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Digital Era Education After the Pandemic

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FOREWORD

The 4th International Conference on Innovation in Education (ICoIE). The conference is organized by the Doctoral Study Program of Educational Sciences of the Graduate School of Universitas Negeri Padang, Indonesia. The theme of the conference is “Digital Era Education After The Pandemic”.

In the future, the role and presence of educators in the classroom will be increasingly challenging and require very high creativity. Changes in the world are subject to the demands of the era of the Industrial Revolution 4.0 and the era of Society 5.0, where information technology has become an integral part of human life. Everything becomes borderless with the use of unlimited computing power and data, influenced by the development of the internet and massive digital technology as the backbone of the movement and connectivity of humans and machines.

Transformation of Indonesian education is manifested in independent learning, by adjusting the interests and talents of each child. Educators are required to strengthen their competencies by conducting research and innovation in responding to future educational challenges. Education must be liberating, awakening, life, and dialogic. The current development and progress of science and technology must give birth to new or transformed ways of solving all the nation’s problems in various sectors, such as education, manufacturing, banking, services, and so on. Things that must move through the open mindset, long life education, create new values, and take responsibility.

Through this conference, we provide a forum for researchers, scientists, education practitioners, and students to share their research findings and innovative ideas in education. The conference was conducted on December 10 & 11, 2022, and was held at Graduate School Universitas Negeri Padang, Indonesia.

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PAPERS

FULL PAPERS

Student's Perception of Virtual Breadboard Simulator and TeamViewer in Digital Electronics

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Keywords: Virtual Breadboard Simulator, Teamviewer, Digital Electronics.

Abstract: This research aims to describe the quality of digital electronics practicum with Virtual Breadboard Simulator and TeamViewer. This quality can be seen in the effectiveness and perceptions of students. The research uses descriptive quantitative research methods. The research subjects were 21 students majoring in Electronic Engineering at D3 Padang State University who took the Digital Electronics Practicum course. Data on student perceptions of product display aspects (Simulator and TeamViewer) were obtained from student response questionnaire sheets with indicators of clarity of usage instructions, legibility, image display quality, color composition, communication facilities, and ease of operation. The data were analyzed using the percentage of responses from students according to their respective indicators. The results showed that students had a positive reaction to practicum activities. Therefore, it is concluded that the digital electronics practicum with the Virtual Breadboard application has good quality if the implementation is assisted by TeamViewer, which is carried out in groups and works together in real-time in building a circuit.

1 INTRODUCTION


Vocational education as education-for-work is based on the philosophy of essentialism, pragmatism, and existentialism (Sudira, 2012). Education that has the combined characteristics of education and training functions (Vokasi, 2020), Balanced theory and practice-oriented towards specific skills and job readiness of graduates (Haris et al., 2020), (Utami et al., 2018). Vocational education based on its characteristics has very important practical/practice learning (Sasongko & Widiastuti, 2019).


The purpose of the practicum is to test and apply the theory and scientific evidence learned in a course or portion of a course (Haryoko & Jaya, 2018). Practicum is also defined as a learning strategy that allows students to empirically practice cognitive, affective, and psychomotor abilities using laboratory


facilities (Utami, 2017).


Practicum is usually carried out in a real (hands-on) laboratory, besides having advantages, it also has several limitations, including (1) unable to meet distance learning needs (Altalbe, 2018); (2) requires longer instruction time; (3) unable to provide for students' special needs (Burkett & Smith, 2016); (4) expensive equipment and operations (Crandall et al., 2015); and (5) unable to accommodate all the material and limited time, resulting in failure to meet the expected learning objectives (Brinson, 2015).


Laboratory practicum in vocational education is very important to make students active in the learning process (Belmawa, 2020), (Jaya, 2010). Moreover, the knowledge gained through direct experience in the laboratory is proven to be more profound and has a long-term effect (Kastelan et al., 2015). Direct experience in the laboratory can also be constrained

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if a situation changes suddenly, such as the current pandemic phenomenon.

In addition to the problems above, the education system in Indonesia has undergone changes due to the COVID-19 pandemic. The distance education system is one method for overcoming social distance-related obstacles to direct learning. one of the applications of a distance learning system such as online lectures will facilitate the learning process without the need for face-to-face meetings(Dewantara et al., 2020). This impact also has implications for digital electronics practicum learning.

Digital Electronics Practicum is one of the subjects that must be taken by students (UNP, 2018). This course examines and exercises various digital circuit types. Digital circuits are the foundation of all digital systems currently in use(Luković et al., 2016). Circuit logic is a central concept in understanding how computers and electronics work. Currently, several software has been produced that can visualize and simulate it, such as Virtual Breadboard Simulator.

1.1 Virtual Breadboard Simulator

A simulator is software that simulates physical instruments such as measuring instruments or other real systems. A simulator is a form of an interactive multimedia object consisting of heterogeneous formats consisting of sound, graphics, hypertext, text, animation, images, videos, which contain both implicit and explicit learning objectives and are digital. The purpose of the simulator is to provide simulative facilities that allow students to conduct experiments conducted like a real (hands-on) laboratory.

A breadboard is a circuit board whose function is to arrange electronic components and place them without soldering them to electronic circuits. A breadboard is used to connect one component with other electronic components via cables. Virtual Breadboard Simulator is one of the simulators that can be used to support the Digital Electronics practicum.

The Virtual Breadboard Simulator provides virtual tools and materials in the form of Breadboard with its power supply, various types of TTL logic transistors, switch components, LED and 7-segment displays, cables, and logic probes, and much more. This simulator is developed by James Caska which is open source. The Virtual Breadboard Simulator display is shown in Figure 1.

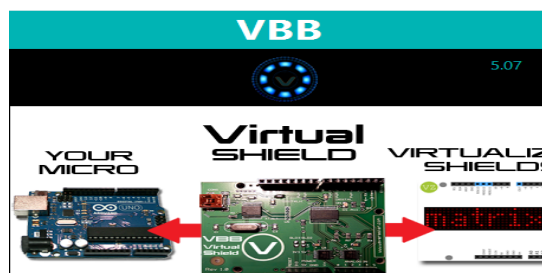


Figure 1: Initial View of Virtual Breadboard Simulator.

Figure 1 depicts the display of the Virtual Breadboard simulator. This simulator enables students to design circuits that are more complex and sophisticated than in actual practice. Due to the limited number of components available in the physical kit, this is the case (Lum Tan & Venema, 2019). In Virtual Breadboard there is a menu for building sequential or combinational sequences.

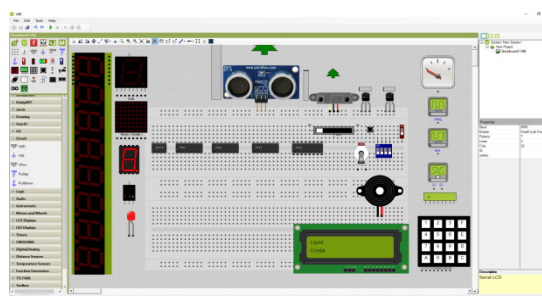


Figure 2: Tools in the Virtual Breadboard Simulator.

1.2 TeamViewer

During the Covid-19 pandemic, the use of communication media for digital electronics practicums needs to be increased. Communication media used to support practicum activities can run collaboratively online so that there is interaction between lecturers and students, between students and practicum equipment. One of the software used is TeamViewer. The TeamViewer interface looks like Figure 3.

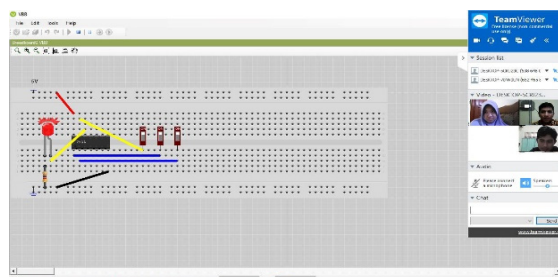


Figure 3: TeamViewer Interface and Virtual Breadboard Simulator.

Supporting online practicum activities with software that offers a collaborative approach, with an online meeting menu and TeamViewer remote desktop access. TeamViewer is a speedy and easy-to-use remote meeting and desktop control solution that also boasts a high level of security. For the sake of a complete answer, TeamViewer can be used to (1) meeting functions, such as for training sessions; (2) display the desktop for meetings, collaborations or presentations; (3) assist coworkers, friends, or customers remotely on an as-needed basis; (4) Use these free Android and iOS meeting applications to join in on the go! (5) Linked machines may use a variety of operating systems; and (6) TeamViewer operates under Windows, Linux Operating System or Mac OS.

Based on the need to conduct a Digital Electronics practicum, this study seeks to characterize student reactions to the display component of the Digital Electronics Practicum which was carried out with a Virtual Breadboard simulator and online collaboration with TeamViewer.

2 METHOD

This research uses descriptive quantitative research methods. The research subjects were 21 students majoring in Electronics Engineering D3 Padang State University who took the Digital Electronics Practicum course. Data on responses were obtained from student response questionnaires with indicators: 1) clarity of usage instructions, 2) image display quality, 3) legibility, 4) color composition, 5) ease of operation, and 6) communication facilities (Muchlas, 2015). Determination of the tendency of student responses is done by using the percentage technique using equation (1) as follows:

$$P = \frac{(n_1x_1) + (n_2x_2) + (n_3x_3) + (n_4x_4) + (n_5x_5)}{Nx5} \times 100\%$$

P represents the percentage of reaction, as described by the expression in Equation (1), n_1, n_2, n_3, n_4, n_5 each represents the number of selections for a score of 1 for the choices STS (strongly disagree), 2 for TS (disagree), 3 R for (undecided), 4 for S (agree), and 5 for SS (strongly agree); and N indicates the number of questionnaire items.

The successful implementation of the digital electronics practicum learning model may be determined based on the descriptive analysis of the collected data and the student response rate criteria presented in Table 1.

Table 1: Student responses rate criteria.

Range	Level
80% - 100%	Very Good
66% - 79%	Good
56% - 65%	Poor
0% - 55%	Very Poor

3 RESULT AND DISCUSSION

Students data responses on product display aspects are presented in Table 2.

Table 2: Student responses to product display aspect.

Component	Student		
	Score	Maximum Score	%Average
Clarity of learning and usage instructions	468	630	74,29
Image display quality	245	315	77,78
Legibility	242	315	76,83
Color composition	258	315	81,90
Ease of operation	279	315	88,57
Quality of communication facilities	280	420	66,67
Total	1772	2310	76,71

Based on Table 2, a graph can be made showing student responses to the product display aspect as shown in Figure 4.

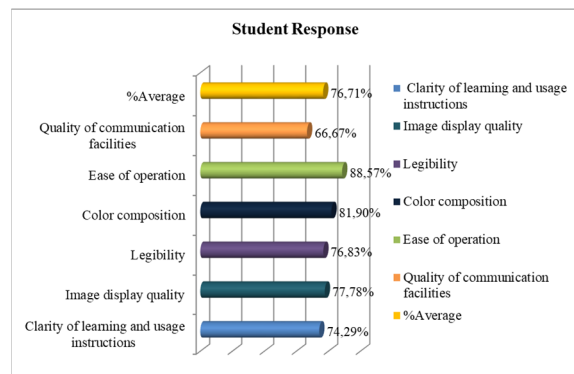


Figure 4: Student responses to product display aspect.

In the aspect of clarity of instructions for use, a value of 74.29% was obtained. The meaning of these values explains that the models and support systems developed for the user guide are easy to learn and apply.

The picture quality was also responded well by students. The results obtained are 77.78%. This value indicates that the images and illustrations displayed on the model and its support system, in particular, Simulator programs and online collaborative support systems are effective in arousing curiosity and fostering student motivation.

Figure 4 also shows that the readability of the perceived product is very good with a perception level of 76.83%. These results indicate that the display of letters in the Virtual Breadboard simulator program as a substitute for real tools and materials, as well as the TeamViewer program as an online collaborative work tool, facilitates pupil comprehension because it is simple to read.

The color composition aspect was very well received by students with an average level of education by 81.90%. These results indicate that the composition of the supporting colors has been changed to generate an aesthetically acceptable composition in the student's answer.

In the aspect of ease of operation, a response of 88.57% was obtained, which indicates that the model and its supporting system are easy to operate. Ease of use is reflected in the results of student assessments which show that the menus provided by learning support devices are easy to recognize, read, understand, and execute.

Regarding the quality of communication, it was revealed that there was a poor response from the qualitative data collected. This is due to the fact that participants may encounter unanticipated technological issues, such as slow internet connections, which prevent the practicum from being completed normally. Nevertheless, with a mean response rate of 66.67%, the subject generally gave a good response to aspects of the communication skills of the support system. This demonstrates that services like as chat rooms, voice over IP, video conferencing, and file transfers may be utilized efficiently and without difficulty used to support practical activities. Researchers pay attention to the results of the analysis, it can be stated that in student responses, the product applied has given a good appearance with an average response rate of 77.71%.

4 CONCLUSIONS

The conclusion of this study is that the Digital Electronics Practicum using Virtual Breadboard Simulator gets a positive reaction when TeamViewer is used to facilitate its implementation. This is confirmed by response statistics indicating that

students respond well to practicum activities. Due to the epidemic, TeamViewer can be utilized to facilitate online collaborative digital electronics practicum through online practicum learning.

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Contextualizing the Principle of Microlearning to Design Microcontent for English Language Teaching in Post-Pandemic Education

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Abstract: Microlearning is a challenging approach in education. However, the way to develop microlearning-based learning material may be unclear. This study was purposed to, first, transform the principles of microlearning into the guiding descriptors of microlearning-based instructional material for English language learning. Second, the study explored the relevance of microlearning-based learning object materials for post-pandemic English language teaching. This highlighted the potential of microlearning for alternative English language teaching and learning in the digital era of post-pandemic. This study was qualitatively approached by employing library research to answer the research questions. This study began by reviewing academic literature regarding the principle of microlearning, the principle of material development, and the principle of language learning. Then, in the next phase, were three explorations of language teaching before the pandemic, during pandemic and post-pandemic. The result of the study revealed the guiding descriptor on procedure on how to develop microlearning-based material for language learning. The result also exposed the relevance of the implementation of microlearning in post-pandemic education.


1 INTRODUCTION


Microlearning is relatively novel compared to microteaching. The term microteaching was introduced by Allen and Eve in 1963 as a reduced class size and time teaching experience (Allen & Eve, 1968). Then, it developed as a method to educate pre-service teachers (Belt & Baird, 1967; Kallenbach & Gall, 1969; Schaefer & Stromquist, 1967). Meanwhile, microlearning as a counterpart term of microteaching was less known until 2005 (Swertz, 2005). Microlearning was introduced as a new challenging approach in teaching and learning activities by Theo Hug (Hug, 2005a). This, later, became a popular approach in certain areas such as training (Hogle, 2021; Javorcik & Polasek, 2019; Margol, 2017; Shail, 2019), language (Brebera, 2017; D Edge et al., 2012; Darren Edge et al., 2011; Kovacs, 2015a), computer (Polasek & Javorcik, 2019; Skalka et al., 2021) and health (Filipe et al., 2020; Gawlik,

2021; Gross et al., 2019). Microlearning has received more attention over the last decade and has usually been investigated in relation to information and communication technology. As microlearning focused on the student characteristic, social media occurred as one of the media to deliver microlearning activity; telegram (Aldosemani, 2019; Redondo et al., 2021), Twitter (Aitchanov et al., 2013; King, 2018; Wakam et al., 2021), and Facebook (Islambouli et al., 2021; Kovacs, 2015a). Besides, mobile learning is bound to be a popular microlearning tool (Beaudin & Intille, 2006; Hug, 2015; Sunardi, 2020; Tong-ming, 2012).

Studies on the employment of microlearning can broadly be categorized into teaching and learning in educational institutions and non-educational institutions. The Majority of educational institutions that utilized microlearning occurred in the higher education. Aigerim(2014) design microlearning as tool to prepare student before taking CCNA

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examination. Buhu & Buhu(2019) constructed microlearning in higher education for textile education. Leela(2019) created living books (mobile learning and augmented reality) as part of a microlearning technique to foster computational thinking in vocational students. Stratton et al.(2020) produced three microlearning-based melanoma films with CSE material for digital transmission to PCNPs in various forms to teach nursing students. In the other hand, microlearning also utilized by non-educational institution as self-learning application to learning certain material. Edge et al. (2011) developed mobile microlearning application to help participant learn mandarin. Simons et al(2015) constructed a hybrid health support intervention system for changing health behaviours that combines electronic and physical support services, including a mobile micro-learning health quiz. Göschlberger & Bruck(2017) designed microlearning mobile application as a training supplement for new worker. Orwoll et al. (2018) utilized microlearning app as nurse companion to deliver standard practices on Central line-associated bloodstream infection treatment.

Within the last two decades, microlearning has been becoming an instrumental element of language education. The studies of microlearning occurred in various foreign language education (Aldanazaruly & Kazimovich, 2013; Aldosemani, 2019; Brebera, 2017; Darren Edge et al., 2011; Hug, 2006; Kovacs, 2015a; Unterrainer, 2012). On the use of microlearning in language education commonly address the learning process (Brebera, 2018; Darren Edge et al., 2011; Hosseini et al., 2020; Mohammed et al., 2018; Tolstikh, 2021) and the learning material development (D Edge, 2012; Kovacs, 2015b).

This issue of our study differs from that of issues in the previous areas of studies on microlearning. The previous study relatively discussed the development of instructional design based on certain particular objectives. Despite the empirical studies of exploring microlearning in learning material development has been conducted, no one to the best of our knowledge has studied the guiding descriptor to design microlearning lessons for English Language Learning. The study is purposed to, first, transform the principles of microlearning into the guiding descriptors of Microlearning-based Instructional Material for English Language Learning. Second, the study explores the relevance of microlearning-based learning object materials for post-pandemic English language teaching. This highlights the potential of microlearning as an alternative approach in English

language teaching and learning in a digital era of post-pandemic education.

Microlearning and Learning Material Development

Microlearning is a learning process through bite-sized and well-planned modules in the form of short-duration learning activities (Allela, 2021). This process includes microlearning as a learning methodology, as a method and related technology and as a process of creating subject matter. Microlearning reflects a growing reality today, namely fragmentation which includes fragmentation of information sources and units of information used for learning (Langreiter & Bolka, 2005a). Microlearning is also relevant to the limitations of brain work due to cognitive overload due to the long learning format (Mayer & Moreno, 2003), even though the attention span of adults is twenty minutes (Allela, 2021). Therefore, the basic idea of microlearning is to make learning materials in a concise form (granules or nuggets), but can accommodate an achievement or sub-achievement of learning in a format that is easily learned at one time, available when needed, contains only the necessary information and action-oriented, as well as practical.

The term microlearning is not as popular as a similar term, microteaching (Hug, 2005b). Microteaching is defined as a short teaching process by taking one or two skills to be taught (Paduri et al., 2017; Remesh, 2013). Microlearning, on the other hand, focuses on the micro-learning process through well-planned small modules in short-duration learning activities (Gstrein & Hug, 2006). This principle was in line with learning that emphasizes essential aspects, short duration and can be accessed anywhere and anytime. The learning process supported by microlearning-based teaching materials was an ideal choice to deal with educational changes after the pandemic period and the characteristics of students who are dubbed digital natives or digital natives.

The scenario of the learning process in microlearning is a framework that allows students or users to get the information they need (Allela, 2021)The microlearning learning scenario is a sequence of processes to acquire knowledge. The learning sequence contains a variety of models that have a specific purpose (Swertz, 2005). This sequence includes levels or levels to gain knowledge that begins with behavioural, emerging, causes, change and reflection (Peschl, 2006) . Microlearning has a unique arrangement of learning paths or phases

and can be adapted to the desired learning needs. Park & Kim (2018) suggested three steps of microlearning; intro, learning and organizing. In the intro phase, the focus was on content introduction. In addition, a diagnostic quiz to generate students' prior knowledge becomes an activity at this stage. In the learning phase, Park and Kim believed that the learning situation takes place interactively. Therefore, the recommended activities are gamification, interactive videos, quizzes or application demonstrations. And at the last stage, the focus lies on summarizing learning activities.

On the other hand, in designing the microlearning phase, Zhang & West (2020) focused on essential proof principles. the designed microlearning was broke down into three different points; introduction, lessons, and feedback. The introduction emphasized on attracting students' attention and bringing out students' learning schemes. In lessons, to teach practical skills, microlearning lessons provided timely learning with sufficient information for participants to learn the skills they need. In addition, quizzes were delivered in the lesson phase. And in the feedback, it looks like the conclusion of the whole activity. Lesson design provided clear feedback on student activity and progress.

Another learning phase design was proposed by Lee et al (2021). The design, adapted from Jahnke et al. (2020), unpacked the phase of microlearning activity into four main activities; Capture student attention, Present content, Generate performance, and Provide feedback and Assess performance. In the first phase, before starting the micro course, students read a short text that gives an overview of the course. This phase, intendedly, helped students understand the meaning of the topic. Then, the next phase focuses on how students interact with microlearning lessons. Students read or interact with interactive information after recognizing the significance of the topic. The lesson didn't just feature learning materials; instead, learners interact with them in a variety of ways. This was different from ordinary one-way textbooks or e-books, where students can only read information. Furthermore, after the interactive lesson and short exercises, many of which were gamified tasks, were presented after students have engaged and possibly mastered the subject. And in the last phase, Students are given feedback at the end of the microlesson. The drills applied give them quick automatic feedback on their performance.

2 METHODOLOGY

This study was qualitatively approached by employing library research. There were two objectives of this study; transform the principles of microlearning into the guiding descriptors of English learning object materials designing, explore the relevance of microlearning-based learning object materials for post-pandemic English language teaching. The library research was utilized to answer first and second objectives. In library research, actual information related to research questions is explored through source identification (George, 2008). There are three main things in library research; finding, sources, and tools. Finding is defined as an effort to find facts about the information needed and identify reliable and up-to-date sources. Sources are translated as evidence of results or synthesized answers from observations, opinions and all actions of research results. While the last thing is that the tools in question are all sources of knowledge. It includes dictionaries, encyclopaedias, book catalogues and other materials both printed and electronic (George, 2008). In this study, factual and actual information about the conceptual framework was obtained from books and scientific articles.

The first objective was transforming the principles of microlearning into the guiding descriptors of English learning object materials design. The principle of microlearning was analysed based on three underpinning principles; the principle of microlearning, the principle of teaching and the principle of material development. **The principle of microlearning** consisted of self-paced learning, bit sized, focused on one learning objective, and incorporating various media. **The principle of language teaching** comprised Transfer, Reward, Self-Regulation, Identity And Investment, interaction, and Languaculture (Brown & Lee, 2015). Last, **The principle of material development** derived from Tomlinson (2012). The underpinning principle was connected with the stage of learning of microlearning by the simplification of Peschl(2006), Allela (2021), and Jahnke et al.(2020). The stages consisted of schemata activation, content, exercise and assessment. The second objective was exploration the relevance of microlearning-based instructional materials for post-pandemic English language teaching. The process divided into three exploration of language teaching in before pandemic, during pandemic and post-pandemic.

3 RESULTS

The systematic review of the literature found that the concepts of microlearning, learning material, and language learning were all followed in the creation of microlearning-based learning materials for language learning. The systematic review of the literature's findings identified the guiding description for creating microlearning-based learning materials. Additionally, the outcome demonstrated the applicability of the microlearning approach to post-pandemic education characteristics.

3.1 The Guiding Descriptor of Microlearning

The Principle of Microlearning

The identification of principle of microlearning came from the definition by Hug (2005a) which compromise four main principles; self-paced learning, bit-sized, focused one learning objective, and incorporating various media. Based on the definition of microlearning, there were three main characteristics; small modules, separated learning process scenarios and a short duration of learning time. The first one is bit-sized or small modules. Small modules can be associated with the term microcontent or small content that is structured and cannot be broken down into smaller parts, and also has a specific focus (Leene, 2006). In more detail, these definitions turn out to be the main characteristics of microcontent which are structured, focused, unbreakable, traceable, and self-sustaining. This characteristic of microcontent in microlearning can reduce the effort in compiling long material by arranging material in pieces of different information but having a single coherent information unit (Langreiter & Bolka, 2005b). Beaudin et al.(2007) argued the design of technology let student to break larger lesson into smaller part. Buchem & Hamelmann(2010)saw microlearning as small learning steps with small chunks of information can be used for learning in- between and on-demand. Kerres(2007) determined microlearning lesson as spilt up into small unit lesson as stand-alone lesson unit. Based on this principle. The guide descriptors are:

- The lesson is chipped into small part
- The lesson is in small chunk information
- Lesson is split up into small unit lesson

The next guiding descriptor based on the principle short time. The duration of time in processing

information in microlearning is relatively short with the support of the two characteristics mentioned above; small modules and separate scenarios (Hug, 2005b). The process of preparing scenarios consisting of small modules or microcontent can shorten the process of acquiring knowledge (Pusawiro, 2006). The abbreviation in the microlearning learning process was carried out based on the process that is passed in the formation of microcontent by selecting the focus of the learning outcomes. In addition, learning with a short duration can be associated with time constraints in obtaining information (Allela, 2021; Mayer & Moreno, 2003).Bruck et al(2005) argued the learning module is breaking down into small part name *microcontent*. This situation only needs short time to fulfil the activity. Besides, Allela (2021) portrayed microlearning as a short time in order to cope with learner short attention span. Cole & Torgerson(2017) Typically, micro-activities are between two to ten minutes each. Based on this principle. The guide descriptors are:

- The lesson is in the small parts separated by the phase of learning
- The lesson is delivered in short time activity
- Each lesson is not more than 10 minute to finish it

Next is self-paced learning. Self-paced learning was described as learning that is controlled by the individual in order to accomplish personal learning objectives, with the learner having control over the amount of material consumed as well as the length of time required to fully acquire the new knowledge (Inkson & Smith, 2001; Xu et al., 2019). The main focus self-paced learning was the flexibility student learning. Flexibility was seen as a significant notion in individualizing the learning and teaching process, spanning all actions of learners from admittance to courses through the completion of the learning process (Bergamin et al., 2012). The flexibility broke the limitation of place and time (Demir-Yildiz & Tatik, 2019; Howard & Scott, 2017).(Carter & Youssef-Morgan, 2022). The process of microlearning activity let the student to determine the pace of learning. The student can freely choose the lesson structure,(Darren Edge et al., 2011) Student are allowed to do repetition on visiting the provided module. The student has own control on the access of the module to visit anytime.(Beaudin et al., 2007) the application was designed to meet the feel of the user whenever they are motivated to do lesson. although the learner can determinethe lesson they want to choose, the designer of the microlearning create lesson in sequence level of learner (Bernhard Göschlberger & Bruck, 2017). The creator

determined the phase of the lesson based on each objective.

The design of microlearning let the student access in the gap or spare time(Gabrielli et al., 2017). Small learning steps with small chunks of information can be used for learning in- between and on-demand. (Buchem & Hamelmann, 2010). Based on this principle. The guide descriptors are:

- Student are able to choose the phase of its learning.
- Student are able to repeat the lesson module
- Students are able to visit the lesson module anytime
- Students are freely and no time bound to do the lesson
- Students are able to choose the lesson
- The lesson phase is determined by the creator of microlearning based on the objectives of the lesson.
- Students are free to take the lesson in their chosen time
- Students are able to use the lesson in every situation of learning while learning or after learning

Incorporating various media happened as another last characteristics of microlearning. As the vast variety of technology in teaching and learning activity, the incorporation of those variety led microlearning elevated into new level.

Microlearning can instantly engage learners and keep them interested throughout the short course by using a range of material kinds (Allela, 2021). (Beaudin, 2007) mobile application. (D Edge, 2012) adaptive flashcard in mobile application. (Bernhard Göschlberger & Bruck, 2017) Gamification in elearning activity. (Simons et al., 2015) health quiz on mobile application. (Allela, 2021) microlearning can be on different form such as gamification, quiz, infographic, video, podcast, flashcard. The guide descriptors are:

- The lesson can be delivered in mobile application
- The lesson can be in the form of flashcard inside mobile application
- The lesson can be delivered in the form of gamification activity
- The lesson can be delivered in the form of quiz

The Principle of Material Development

Anything created by individuals (authors, instructors, or students) to convey information, use language to create experiences, and encourage language acquisition is referred to as material development

(Tomlinson, 2012). As a result, while creating instructional materials, it is important to first determine the needs of the students and take learning objectives into account. Then, by improving or tailoring it to better meet the requirements of learners, they may develop the content. Teaching materials can be modified and completed by decreasing, adding, removing, and altering them (Tomlinson, 2012). The study related with this principle are: the first is that the design of learning material may use big vocabulary flashcard that attracts student attention. The flashcard has bright design. To enrich the variety, microlearning can be on different form such as gamification, quiz, infographic, video, podcast, flashcard(Allela, 2021). Darren Edge et al.(2011) design micromandarin app that consisted 2 modes, dark and light. In the default, the app employs light mode. It dominantly haswhite colour.To gained attention, B Orwol(2018) created the content of microlearning that has the purpose to let the participant self-assessment through gamification app. This lead nurse attracted to app. It is also delivered by (Cates, 2017)which craft the content of microlearning that apply content and location awareness to engage user attention.

Furthermore, Bernhard Göschlberger & Bruck(2017)suggested that the application used some criteria in assessment quiz to give the level of achievement. This would lead user to challenge himself. Besides, Microlearning tasks should provoke the search for relevant information and discussion. Darren Edge et al(2011) portrayed it in the design of Micro Mandarin app that consisted 2 modes, dark and light. In the default, the app employs light mode. It dominantly has white colour. The content is so big and not have too many written texts on it. In related with principle of learning material that are more at ease with texts and illustrations,

Allela (2021) suggested that microlearning can be on different forms such as gamification, quiz, infographic, video, podcast, flashcard. In the term of learning material should more relaxed with materials which are obviously trying to help them. the microlearning program delivered on the basis to improve user retention on the new vocabulary related with house (Beaudin, 2007). The app automatically aware with the condition. Moreover, to help learner confidence, Microlearning may let the repetition activity lead student to gain accuracy of getting better in vocabulary learning (D Edge et al., 2012).

Furthermore, Beaudin et al.(2007) argued the application was designed to meet the feel of the user whenever they are motivated to do lesson. The student can freely choose the lesson structure . (Carter

& Youssef-Morgan, 2022). Next, Micromodules provide learners with real-life simulations, making it just as effective as using it in the outside world (Kerres, 2007). In the term of effect, microlearning should be able to be re accessed to make knowledge retention last longer (Hug, 2006).

In order to cope with student different learning style, microlearning, microlearning can be on different form such as gamification, quiz, infographic, video, podcast, flashcard (Allela, 2021).

Based on the discussion and finding above, the guiding descriptor related with material development are:

- The lesson on microlearning is delivered in attractive design
- The fragmentation of the lesson in microlearning are suggested to be delivered in various form
- The microlearning lesson consisted of materials that has white colour
- the microlearning content should engage student attention by delivering attractive activity.
- The activity of microlearning assessment should provide scoring system or level of achievement
- The microlearning content should not have too many contents on it
- The unit lesson may consist not only text but also illustration and in the various form of content.
- The unit lesson needsto use up-to-date vocabulary or material based on the context needed
- The unit lesson should let student to repeat the content
- The content of unite lesson should follow the context based on the syllabus or curriculum
- The student can select the lesson freely
- The unit lesson provided context of the language
- The unit lesson of microlearning can be accessed anytime
- The unit lesson is in various object

3.2 Microlearning for Post-Pandemic Education

Microlearning are in line with the process of future educational development which is influenced by aspects of technological development, the direction of education after the covid-19 pandemic, the characteristics of learners or digital learners and changes in the roles and responsibilities of teachers. During the pandemic COVID-19, the significant development of education encourages microlearning-based learning object as major concern for future

learning. According to the report by the Organization for Economic Co-operation and Development (OECD, 2021), significant changes have occurred in school closures and distance education. Distance education is the main alternative to ensure the implementation of the learning and teaching process. In addition, flexibility in the use of existing resources is supported by central level policies for the distribution of education during a pandemic. In this process the existence of technology becomes essential in education. The internet has become a supporting factor for the implementation of distance education during the pandemic. The existence of internet infrastructure in the implementation of distance learning or online learning was the foundation for the successful implementation of online learning. Education providers must be ready to face changes by adapting education patterns in the future (Oyedotun, 2020).

Post-pandemic education is pinpointed on shifting in type of learning, the use of technology, and adapting to the characteristics of digital learners. The sudden shift from face-to-face learning to online learning during a pandemic, paved the way for hybrid learning in the post-pandemic period. Srinivasan et al. (2021) showed that the majority of research respondents stated that online learning was not a preference in their learning. In addition, the results showed that the respondents felt that they had decreased ability in teaching and learning activities. However, on the other hand, the experience in implementing online learning rendered the teacher want to link face-to-face and online learning with certain criteria. This was evident from the majority of respondents also want hybrid learning. It is necessary to prepare a learning system in dealing with the post-pandemic period. The period after the pandemic will be influenced by the emergence of the latest COVID mutations, which forces educational institutions to be ready to prepare a learning system that adapts to the existing situation (UNESCO, 2020). As the result, the use of technology is the epicentrum of post-pandemic education.

With technology, education is moving to adapt to the digital era. The focus on educational changes in the digital era are on knowledge structure, knowledge distribution, acquisition of microcontent and micro knowledge (Hug, 2007). This also should look into the characteristic of digital learner. The evolution of technology affects changes in the way of learning, especially in digital learner (Noguera Fructuoso, 2014). Young people are starting to not be interested in spending time listening to lectures, because they prefer to directly use or apply the knowledge and

skills acquired (A Buhu & Buhu, 2019). In many cases they need the option to study anytime and anywhere, not just in school (Nicholas, 2008). Hence, the characteristics of Microlearning approach happened as meeting point of the demand in post pandemic education. Microlearning attached to short-time activities, small content and focused learning goals (Allela et al., 2018; Makhlof, 2015; Tennyson et al., 2021). Besides, self-explanatory learning content turned out to be one of strong feature of microlearning (B Göschlberger, 2016).

4 CONCLUSIONS

The present study was designed to transform the principles of microlearning into the guiding descriptors of Microlearning-based Instructional Material for English Language Learning. Second, the study explores the relevance of microlearning-based learning object materials for post-pandemic English language teaching. There are two main principles as the basis to create the guiding descriptor to design microcontent; the principle of microlearning itself and the principal material development. As the result of reviewing literature of those principle, there are five main focus the principle of short-term, bit sized, self-paced learning, focused on one objective, and use various media. While in the term of material development, the principle derived from the list of good learning material proposed by Tomlinson. Moreover, the study explored the relevance of microlearning-based learning object materials for post-pandemic English language teaching. The main factor that concludes microlearning is the Hybrid Learning, Digital Learner, UNESCO Post Pandemic Movement, The Use of Technology, and Learning Loss. Although the study has successfully demonstrated the guiding descriptor. it has certain limitations in terms of lack of additional principle such as the principle of language learning and the principle of learning media. Another possible area of future research would be to design microlearning learning material based on the result of this study.

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Literature Study: The Importance of Character Education for Elementary Students in the Digital Era in Forming

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Abstract: Pancasila students are profiles of graduates who demonstrate character and competence to strengthen the noble values of Pancasila students and stakeholders. The Pancasila student profile underscores the importance of strengthening character education by making it a character direction in Indonesian education. Instilling the value of diversity can be started from an early age. This can aim to provide stronger reinforcement and cultivation in student character. These efforts can be made through cultural introduction activities both in learning activities and outside of learning. The social development of elementary school-age children begins to develop. Elementary school-age children are also familiar with the digital lifestyle. The digital era that is felt is not only positive, but also has negative values. This is where the role of teachers, parents and the community also contributes to instilling character values in the digital era. The hope is that the implementation of global diversity in the digital era can be carried out properly, precisely, and is beneficial for the students themselves.

1 INTRODUCTION


Rich in culture, Indonesia is a pluralistic country. Indonesia itself has many islands and is bordered by the sea, so that each region has a different culture (Basyriah et al., 2019). Pancasila is one of the national pillars as the basis of the nation which can bring strong differences. Apart from Pancasila, the 1945 Constitution and Bhineka Tunggal Ika also play an important role in maintaining the unity and integrity of the country (Sagalane, n.d). One of our efforts to maintain this integrity is education. Education cannot be separated from the environment that forms a good personality. Education in schools must not only teach cognitive matters, but must be able to instill good character in students, which can be a prerequisite for building a nation's generation (Farhani, 2019).


In reality, there are still conflicts in life that create feelings of anxiety and peace. One person's differences cause discomfort and even come across as


threatening. this can happen. One reason is a lack of respect for cultural differences and other people. This is stated in Pancasila, especially in paragraph 3 which reads "Indonesian Unity". The character and abilities expected of Indonesian students can be summarized in Pancasila. Where Pancasila has 5 foundations for state and social life which can improve noble behavior in the Indonesian nation, especially for noble character, is character education (Basri et al., 2021). The Ministry of Education and Culture (Kemdikbud) designed Pancasila values for students which were realized by implementing the Pancasila Profile which contains the ideal profile of Indonesian students who practice Pancasila values.

The embodiment of Pancasila students in an effort to strengthen character education encourages the birth of humans with the main characteristics of critical reasoning, creative, independent, faithful, pious to God, noble, cooperative, and global diversity so that they have the ability to independently increase and use knowledge, study, and internalize character values in behavior. The character of global diversity

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is one of the hallmarks of the character in the Pancasila student profile. This character forms a person to protect the noble culture, locality and identity that exists in Indonesia, and has the basic characteristics of global diversity, such as being open-minded through interaction with other cultures, strengthening mutual respect, and creating a new culture in Indonesia in a positive way so that does not conflict with the noble culture of the country.

Pancasila students can develop awareness and diversity to avoid prejudice and other cultural stereotypes such as bullying, intolerance and violence. In this way, he is believed to be able to bridge cultural differences and create equal and harmonious coexistence. Pancasila students are empowered to promote social justice at the local, regional, national and global levels. You are expected to be interested and actively involved in realizing the purpose of this article is to write about the importance of character education for students in shaping individuals from conceptual or non-research global diversity.

2 METHOD

The research design used was a literature review. Literature review is a literature search and research by reading and examining various journals, books, and various other published manuscripts related to research topics to produce an article relating to a particular topic or issue (Marzali, 2016)

3 DISCUSSIONS

3.1 Pancasila Students Profile

Pancasila is the most appropriate word to summarize all the characters and competencies expected of every Indonesian student. This study, examining various documents related to character and competence in the 21st century, also found that the values contained in Pancasila are in accordance with the competencies recommended by the global community. So, being a Pancasila student means being a student who has a strong identity as a nation of Indonesia, who cares about and loves the motherland, but is also able and confident to participate and contribute to solving global problems (Istiningsih& Dharma, 2021).

The term student used to refer to this profile means anyone who is currently studying. This term is wider than "students" or "students" which only

represent people who participate in an organized educational program. Being a lifelong student is one of the characteristics of a Pancasila student profile, so even though they are no longer students because they have completed their education, all can always remain students. Despite the fact that a lifelong learner does not know the end or end of learning, graduate profiles suggest that desired characteristics and skills can only be attained through graduation.

Pancasila students are profiles of graduates who demonstrate character and competence to uphold the noble values of Pancasila to students and stakeholders. The Pancasila student profile emphasizes the importance of strengthening character education so that it becomes a character direction in Indonesian education. The integration of the character profiles of Pancasila students is supported by curriculum documents (2013) regarding core competencies and IPS core competencies which are a major part of integration with other subjects (Istiningsih& Dharma, 2021).

The formation of Pancasila students in an effort to strengthen character education encourages the birth of human beings who are critical, creative, independent, faithful, pious, have noble morals, mutual cooperation, and global diversity so that they have the ability. Add and use information independently, learn and internalize character values in behavior. Internalization of Pancasila values can be achieved through continuous habituation and integration into learning (Hasudungan& Abidin, 2020).

An important element of the Pancasila student profile

1. Believe, fear God and have a noble character religious morality, personal morality; morality for people; morality towards nature; and state morality
2. Global diversity Cultural recognition and appreciation, intercultural communication in cooperation as well as reflection and responsibility to experience diversity
3. Cooperate Collaboration, caring and sharing.
4. Independent Awareness of oneself and the prevailing situation and self-regulation

3.2 The Global Diversity Dimension

Global diversity is one of the characteristics of the Pancasila student profile. Forming a person who maintains the nobility of Indonesian culture, place and identity, this figure shows the basic characteristics of global diversity, such as being open-minded in dealing with other cultures, strengthening mutual respect and creating a new

culture. In Indonesia positively so as not to conflict with the nation's noble culture (Pancasila Student Profile - Directorate of Elementary Schools, n.d.).

Embedded character education is a process of learning manners, ethics, and manners that prioritize behavior based on contextual and cultural norms (Indiyarti Putri & Imron, 2019). The attribute of global diversity as part of the Pancasila student profile is one of the attributes that shapes Indonesian students' appreciation of culture, place and national identity. so that it is open to local, national and global cultural diversity (Rahayuningsih, 2022). Communicating the value of diversity can start at an early age. This can tend to solidify and solidify the character of students. These efforts can be translated into learning activities and outside learning through cultural performance activities. In addition to teacher assistance, parents and the community also participate in teaching these values.

Indonesian students have the opportunity to maintain a noble culture, place and identity, be open to interact with other cultures, respect each other and form a positive new culture that does not conflict with the country's noble culture. Important components of global diversity are cultural awareness and appreciation, intercultural communication skills in dealing with others as well as reflection and responsibility for experiencing diversity (Kemendikbudristek, 2022).

3.2.1 To Know and Understand the Culture

Pancasila students can identify, recognize, and describe different groups based on behavior, gender, communication style and culture, describe identity and group formation, and learn about local, regional, and regional levels by analyzing how to become members of a social community. Groups at the national and international level, national and global level.

3.2.2 Intercultural Communication and Interaction

Pancasila students respect, understand and accept existence, see the uniqueness of each culture as a rich perspective, and build mutual understanding and empathy for others, and communicate with different cultures on an equal basis.

3.2.3 Reflection on and Responsibility for Diversity or Diversity

By learning and experiencing cultural diversity,

Pancasila students develop an awareness and experience of diversity to avoid prejudice and stereotypes about other cultures such as bullying, intolerance and violence. In this way, I can reconcile cultural differences and create an equal and harmonious life for myself.

3.2.4 Social Justice

Pancasila students are interested in and actively participate in realizing social justice at the local, regional, national and global levels. This potential can be used as a means to strengthen democracy and participate actively in building a peaceful, inclusive, socially just and sustainable society.

3.3 Implementation of Global Diversity

One of the values of the Pancasila student profile is global diversity. Indonesian students have the opportunity to preserve their noble culture, place and identity, be open to interact with other cultures, respect each other and form a positive new culture that does not conflict with the noble culture of a nation in conflict. One of the sub-elements of the Pancasila student profile with global diversity is an assessment of the uniqueness of each culture in dealing with others, consideration, understanding, presence and perspective, understanding and empathy for cross-cultural communication. Skills are developed for others.

The realization of global diversity is reflected in mutual respect which is built through friendship between school elements regardless of religious background, ethnicity, customs and mutual respect. Education is learner-centered and therefore focuses on students' personalities, experiences, perspectives, backgrounds, skills, interests, abilities, and learning needs. In this context, the new teaching strategy should encourage interaction between teachers and students. Friendly activities encourage friendlier interactions between teachers and students (Sibagariang et al., 2021). This activity builds a school culture that becomes a forum for friendship. Culture is a product of an organization and is rooted in the mental attitude, dedication, commitment and loyalty of all members in the organization.

The existence of school culture plays an important role in improving school quality and teaching quality. School culture influences the behavior and habits of school children to see and solve problems that exist in the school environment, so that they can provide a foundation and direction for an effective and efficient teaching and learning process because they are closely related to each other. educational process. A

positive school culture provides its own color and is in accordance with specific school management practices (Cahyani et al., 2020).

3.4 Global Diversity Character Development

One of the profiles of Pancasila students is the nature of global diversity. In this case, students with a Pancasila profile and global diversity have a passion for preserving noble cultures, places and identities and are open to interacting with other cultures, mutual respect and the possibility of forming a new culture. It is positive and does not conflict with noble culture.

Three key elements make up the globally diverse profile of Pancasila students, namely:

- Get to know and appreciate culture
- Intercultural communication skills in dealing with other people
- Reflection on and responsibility for diversity experiences

Diversity means diverse, different, many, diverse and so on, causing many differences that exist in every life, diversity focuses more on national values, namely there are differences in ethnicity, race, religion, culture, language, etc., that exist in the country of Indonesia (where unity is the link in the chain of diversity). Global diversity is respect for diversity. Global diversity is tolerance for differences.

Here are some activities that can contribute to the global nature of diversity: flag ceremony, sing folk songs, literacy program, through pictures, by example, and oral statement (Yasinta et al., 2022) (Yasinta et al., 2022). *First*, the flag ceremony is a mandatory Monday activity from elementary to high school to instill national values in students, accompanied by values such as discipline, leadership, cooperation and togetherness. Believing in the value of global diversity, can be found in introducing national values to students by introducing the Indonesian flag and national anthem to help students know and love their own nation. *Second*, folk songs are songs that take place and develop in the environment with local poetry and language. Students do marching exercises with all students, the purpose of which is to train student discipline and instill the value of diversity by singing the national and regional anthems and singing with all students and teachers.

Third, teaching the value of global diversity to middle school students, the teacher read short stories to students during class. *Fourth*, the teacher's creativity in creating and using media images effectively and efficiently inspires students to participate in learning so that basic education goals are achieved. *Fifth*, at school, teachers are role models

for students, attitudes and behavior are always felt by students, so if you want to change student character for the better, teachers also behave well. *Sixth*, oral communication is one of the things a teacher does when trying to convey the value of global diversity to students, because the first step a teacher can take is to convey it directly.

Below are some student activities that can contribute to the global diversity of learning: not picky friends at school; get along with everyone in the school environment, regardless of religion, ethnicity, race, etc; use tolerance; do not interfere in other people's worship; watch cultural performances from the archipelago, even if the performances are not from their own tribe; learn foreign languages to find information; exchange students abroad; open for external development; fostering local culture; and do the flag ceremony every Monday.

3.5 Character Education in the Digital Era

In this era of all-round technology, it has made children look very passive and rarely socialize in the family and society. The attention of today's children is more to pay attention to the screen in front of their eyes than to play with their peers. So it's not uncommon for children to lose valuable time playing with family, studying, developing their talents or playing with their friends because their attention has been taken over by cellphone screens or existing technology. Here the role of parents is very important in guiding, monitoring, and managing children's time from the digital devices used.

4 CONCLUSIONS

Pancasila is the most appropriate word to summarize all the characters and competencies expected of every Indonesian student. The term student used to refer to this profile means anyone who is currently studying. Pancasila students are profiles of graduates who demonstrate character and competence to uphold the noble values of Pancasila to students and stakeholders. The key elements of the Pancasila student profile are Faith, Fear of God Almighty and Noble Character, Global Diversity, Mutual Cooperation, Independence.

Global diversity is one of the characteristics of the Pancasila student profile. The attribute of global diversity as part of the Pancasila student profile is one of the attributes that shapes Indonesian students' appreciation of culture, place and national identity.

Communicating the value of diversity can start at an early age. The form of global diversity is reflected in mutual respect which is built through friendship between school elements regardless of religious, ethnic, cultural and mutual respect backgrounds.

Three important elements make up the profile of Pancasila students who are globally diverse, namely: Recognizing and appreciating culture, intercultural communication skills in dealing with others, reflection and responsibility for experiencing diversity.

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Triple Helix Analysis: Blockchain in Improving the Community's Economy after the Covid 19 Pandemic in Sungai Penuh and Kerinci

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Abstract: During the Covid-19 pandemic, the community's economy declined. It requires an immediate resolution. As three sets of development resources, the triple helix is also responsible for solving these problems. Blockchain technology is also an alternative technology to solve this problem. This research is to explain the interaction of universities, industry players, and local governments in solving this problem. This study uses qualitative analysis with a type of field research. Interviews were conducted with policymakers. The use of blockchain technology can be the right solution to improving the community's economy, especially in the field of tourism, which is indeed the foundation of the community in the Kerinci and Sungaienuh areas. On the other hand, each Helix has a different role which causes it not to be well coordinated. This paper also shows the weaknesses and evaluations that can be done using statistical analysis, especially in areas where the economy is not yet developed.


1 INTRODUCTION


Covid 19 has destroyed the global community's economy. The impact of the economic downturn reached its lowest point in society. Covid 19, in statistical data, affects increasing the community's poverty rate. Data shows that the number of poor people in Kerinci is still very high compared to several districts or cities in Jambi Province. According to data from the Central Statistics Agency (2019), the population of Kerinci Regency is 237,791 people. As much as 18.45 percent of that number is included in the category of poor people.


Uses the term deprivation trap to understand the core problem of poverty in third-world countries, where the elements of the ruins are closely intertwined in a chain of interrelated links, which see that poverty is experienced by people in the third world, especially rural communities who live in rural


areas (R Chambers, 1988). caused by the interrelationship of factors that cause poverty, such as a "vicious circle" so that they are trapped in poverty, which is divided as follows: Poverty is the most determining factor compared to other factors. The fulfillment of food, clothing, shelter, education, and health needs characterizes it. Inadequate income is caused by insufficient income for daily needs, creating weaknesses in other poverty. Weak physique, namely the existence of a high dependency ratio among family members in terms of earning a living, because the level of labor productivity is deficient. Alienation, as they are uneducated, live far away, or are out of reach of communication, thus perpetuating poverty, where government services or assistance do not reach them. Vulnerability usually, low-income families do not have reserves in the form of money or food to deal with emergencies. Powerlessness, poor people do not have the power or


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strength to face stronger (influential) people who often exploit themselves. Usually, low-income families do not have reserves in the form of money or food to deal with emergencies. Powerlessness, poor people do not have the power or strength to face stronger (influential) people who often exploit themselves. Usually, low-income families do not have reserves in the form of money or food to deal with emergencies. Powerlessness, poor people do not have the power or strength to face stronger (influential) people who often exploit themselves.

To overcome the problem of poverty, in the last few decades, there have been many collaborative programs between universities, local governments, and private companies, as well as state-owned enterprises which have been developed to address people's economic problems. The Triple Helix is an analytical model developed that describes and explains the dynamics of institutional arrangements between universities, industry, and government agencies, with the common goal of creating an innovative environment for the development of a knowledge-based economy (I.A. Ivanova & L. Leydesdorff, 2014).

There are three strategies in community empowerment: policy and planning, social and political action, education, and awareness (J Iffe, 2013). Empowerment through policies and planning is accepted in the development or changes in structures and institutions for more equitable access to resources or services and opportunities to participate in community life. Empowerment through social action emphasizes the importance of political struggle and change in developing adequate power. At the same time, empowerment through education and awareness develops the importance of an educational process that can equip community members to increase their strength.

One community empowerment expert stated that the orientation of community empowerment is currently focused on helping people develop themselves and implement new innovations that continue to develop (Wilson B. Sikhondze, 1999). According to Sikhondze, this process must be carried out using participatory or engagement processes. The targets are individuals and groups, and the technology used is practical.

Another view of empowerment was "The expansion of assets and the ability of poor people to participate, negotiate with, influence, control, and hold responsible institutions that affect their lives" (M Porter et al., 2002). Empowerment is defined as an intervention that is an effort to strengthen resources and community participation in increasing their

capacity so that they can determine their future. The definition of community empowerment in development aims to carry out a process of change so that the community understands its benefits and role in development programs, can formulate needs with the potential or resources they have, and can determine development priorities—problems to be solved according to their needs and potential.

The PDRB of Kerinci Regency from 2016 to 2020 has continuously increased. It can be seen that in 2017 the PDRB in Kerinci Regency was Rp. 8,875.71 billion, which increased from 2016, amounted to Rp. 8,052.84 billion, and until 2020 the PDRB in the Regency will reach Rp. 10,447.13 billion (*PDRB Kabupaten Kerinci Menurut Pengeluaran Atas Dasar Harga Berlaku (Milyar Rupiah), 2018-2020*, 2020).

Agricultural information is the best application of knowledge to promote and create opportunities for development and poverty reduction. Effective integration of ICT in the agricultural sector will lead to sustainable agriculture by preparing timely relevant agricultural information, which can provide the right information to farmers in making farming decisions to increase their productivity. ICTs can quickly improve farmers' accessibility to market information, production inputs, and consumer trends, positively impacting their production quality and quantity. Marketing information, new livestock, crop management practices, plant/livestock diseases and pests, availability of transportation, information on market opportunities, and market prices of agricultural inputs and outputs are essential for economic production efficiency (Al-Hamidi et al., 2010).

Sustainable development has three main objectives, namely: economic objectives, ecological objectives, and social objectives (Bernal & Adames, 2017). Economic objectives are related to efficiency and growth issues; ecological goals are related to the problem of natural resource conservation; and social goals are related to poverty reduction (poverty) and equity (equity). Thus, the goal of sustainable development basically lies in the harmonization between economic, ecological, and social goals.

Blockchain technology can help provide solutions by overcoming visibility and traceability challenges (Hasanah, 2018) and ensuring food quality and safety management (YZ Surentu et al., 2020). Blockchain technology promises a transparent, tamper-resistant, secure system (F Casino et al., 2019).

Based on a survey conducted by the International Society for Horticultural Sciences (ISHS), obstacles in adopting ICT by farmers, especially horticultural farmers, namely: limited ability; gaps in training,

awareness of the benefits of ICT, time, cost of the technology used, system integration and software availability. Respondents from developing countries emphasized the importance of ICT technology costs and technological infrastructure gaps (N Taragola et al., 2009).

The research entitled *Community Empowerment Through Social and Educational Institutions* explores the role of social and educational institutions in Bajulmati in community empowerment (B R Simbolon et al., 2022). This study uses a qualitative approach. The informants in this study consisted of government agencies, empowerment activists from social and educational institutions, and the surrounding community. The study results show the role of social and educational institutions in empowering the Bajulmati community. Communities are empowered through exploiting the potential of nature and human resources, always to be optimistic and independent, and empowered through educational institutions. School education aims to increase competitiveness, They concluded that campuses or universities are crucial in community economic empowerment, especially in rural areas. One sector that has an impact when campuses enter society is the human resources sector. The campus recommendations in his research are said to increase farmers' income through financial management, infrastructure, and the suitability of potential and business strategies (Almasdi Syahz, 2003).

His research on SME empowerment concluded that the implementation of a community empowerment strategy policy, namely developing SMEs, would not be maximized if it was only carried out partially, for example, only in the field of capital economics, but would have more impact if the assistance was oriented towards a comprehensive view of the needs SMEs, for example, individual and group quality assistance including assistance in developing their potential (R Karsidi, 2007). With a process of involvement that is massive, participatory, and also more in favor of the bottom-up process, the results of the empowerment process are more visible. They will become independent when the mentoring ends and the business continues. Based on this thought, the author wants to examine further the effectiveness of campus collaboration with local government and the private sector in strengthening the community's economy in Sungaipenuh City and Kerinci Regency.

First, this study aims to determine the level of cooperation carried out by triple helix entities, namely universities, the government and the private sector, in terms of strengthening the technology-

based community economy. Second, to obtain data on weaknesses and obstacles to the triple helix collaboration process in improving the economy of a technology-based society. Third, find out the programs that can be carried out jointly between universities, local government, and the private sector in the future.

2 RESEARCH METHODS

The method in this study will use qualitative analysis with the type of field research where the findings are not obtained through mathematical or statistical procedures that favor calculation (A Strauss & J Corbin, 2003).

This research was conducted in the City of Sungaipenuh and Kerinci Regency. The selection of informants in this study was carried out using a purposive sampling technique. The researchers determined which informants felt that the informants were closely related to one another. Sources of data in this study are primary and secondary. Primary data comes from observation and interviews. To find primary data in this study are leaders and policymakers in tertiary institutions, local government, and the private sector in the City of Sungaipenuh and Kerinci Regency. Secondary data is obtained from Sungaipenuh City and Kerinci Regency, such as documents directly related to the object under study in Sungaipenuh City and Kerinci Regency.

The data analysis process in qualitative research is carried out after data acquisition and in detail inside and after the field. The technique used to analyze the resulting data is a qualitative data analysis technique modeled by Miles and Huberman: data condensation, data display, and inference or validation (Susilawati et al., 2020).

Observation, interviews, and documentation do data collection. This data collection is carried out for a certain period according to data validation needs. Data condensation refers to selecting, focusing, simplifying, abstracting, and transforming data contained in field notes in research. The next step after data condensation is data presentation. A set that states the relationship between categories of information that represents qualitative data. Furthermore, by making a detailed description of the case and its environment.

The final stage of data analysis is verification and drawing conclusions which are interpreted as drawing the meaning of the data that has been displayed. Thus the verification process is an effort to find meaning from the data that has been collected by looking for patterns, themes, similarities, differences, things that often appear, and so on.

3 THEORETICAL REVIEW

3.1 Triple Helix Perspective

The triple helix model can be conceptualized as components, relationships, or links built between actors and functions in the system (I.A. Ivanova & L. Leydesdorff, 2014). Links or engagement can be measured in several ways, including the number of citations to academic papers generated by industry; participation of academics in industrial research activities; university research grants awarded by industry or government (Y Kim et al., 2012). Regarding their functions, universities are responsible for new products, the industry generates wealth, and the government is responsible for legislative control (I.A. Ivanova & L. Leydesdorff, 2014). However, the potential for innovation does not originate from the institutional space of each Helix constituent actor but rather from areas that overlap due to their interactions (I.A. Ivanova & L. Leydesdorff, 2014). This institutional stakeholder role approach is considered a potential source for innovation and growth of the entrepreneurial ecosystem, which is critical for regional economic development and social transformation (A Brem & A Radziwon, 2017; I.A. Ivanova & L. Leydesdorff, 2014; J Kolehmainen et al., 2016). Less research-intensive areas increasingly realize that knowledge applied to local resources can enhance economic and social development, so institutions that produce knowledge are significant (I.A. Ivanova & L. Leydesdorff, 2014). Previous lessons show that higher education institutions can significantly impact the knowledge base development in rural and peri-urban areas (J (Kolehmainen et al., 2016; JJ Ferreira et al., 2017).

Learning dynamics are essential in the entrepreneurial ecosystem (G Secundo et al., 2017). Regarding the role of government, research shows that public policies that support entrepreneurship, in particular addressing knowledge and competency gaps, are essential for developing micro-rural enterprises that create jobs, alleviate poverty, mitigate populations, and contribute to economic growth (Bernal & Adames, 2017; FM Edoho, 2016). Industry's role in the Triple Helix is not only to develop knowledge but also to participate in regional innovation and development by supporting entrepreneurship through corporate social responsibility (CSR) programs, both voluntary and as a result of government agreements (R Steurer, 2010).

Although empirical analysis of the Triple Helix stakeholder effect is limited, several studies have

been conducted, focusing on various outputs, such as regional company formation (Y Kim et al., 2012), local niche innovation projects (A Brem & A Radziwon, 2017) and entrepreneurial innovation performance (M Guerrero & D Urbano, 2017).

3.2 Economic Development Phase

With this in mind, distinguish three specific phases of economic development: (1) Innovation-driven economy (IDE): rich countries versus developed countries. (2) Efficiency-driven economy (EDE): a country with high economic growth and development in recent years, such as strengthening the private sector and public incentives for economic development. (3) Factor-driven economy (FDE): countries with low levels of economic development which usually have a large agricultural sector that provides livelihoods for the majority of the population, most of whom still live in rural areas (M Porter et al., 2002; N Bosma & J Levie, 2010).

Thus, entrepreneurship is increasingly crucial for the development of a country (S Martínez-Fierro et al., 2016), and entrepreneurs are the best agents of change (Acs & Amorós, 2008; AJ Van Stel et al., 2005; N Bosma & J Levie, 2010). He introduces innovation, increases competitiveness and competition (Acs & Amorós, 2008; JJ Ferreira et al., 2017; N Bosma & J (Levie, 2010; PK Wong et al., 2005), pushes the competitiveness of the State to a higher level (JL Curbello & I Peña, 2012; JL González et al., n.d.).

3.3 Technology Transfers

Technology transfer is divided into two, namely horizontal transfer and vertical transfer. Horizontally is the transfer of technology from one field to another. Meanwhile, the vertical transfer is the transfer of technology from research to application, Grosse, (Robert Barr et al., 1977). The technology transfer process also needs to pay attention to the technology readiness level (technology readiness level) Arwanto and Prayitno (2013) as a criterion for when a technology can be widely used. Research generally focuses on stages 1-3, while production occurs when technology has reached at least stage 6. Bridging between stages 3 to 6 is the most difficult, whereas stages 4 and 5 include converting prototype components to mass production components for testing and further development.

4 DISCUSSION

4.1 Helix Readiness Levels

4.1.1 Local Government

The government has prepared organizational tools through offices and agencies, which are divided based on the object of the problem. For example, for economic and MSME issues, the government will give authority to the industry agency. For health issues, the government will give authority to the health service, and for tourism issues, the government will give authority to the tourism agency. Fajrann (Chairman of the Sungaipenuh City DPRD) said, "The government, through related agencies, is implementing a community empowerment program, especially MSMEs in Sungaipenuh City."

4.1.2 University

The collaboration built between the campus and the Kerinci Regional Government is still limited to research collaboration, where there is no further follow-up on any research by lecturers and students regarding the research. Rahmat Fauzi (Head of the Center for Religious and Cultural Studies at IAIN Kerinci) said, "Institutions have been formed on campus, but institutional work programs are still running alone in the process of strengthening the community's economy without concrete cooperation with local governments."

4.1.3 Private Sector

The private sector has two patterns to strengthen the local community's economy. Some directly form an organizational structure to manage CSR, while others still combine it with a general organizational unit. Both types of patterns have advantages and disadvantages of each. Companies that precisely form devices will be more planned and directed.

Mulyadi (Head of Bank Sembilan Jambi) said that "We must carry out the SME development program, namely UMKM Go Digital, but currently, there is no institution that can be invited to work together concretely to carry out the program,"

Institutionally, it can be concluded that the three helixes have prepared themselves by forming a structure in the management of cooperation. The structure has been equipped with a work program but has a different focus from one helix to another.

4.2 Triple Helix Partnership Program

Several campuses are in Sungaipenuh City and Kerinci Regency, namely IAIN Kerinci, STIE Alam Sakti Kerinci, AKPER, and others. Several companies are actively conducting business activities in the City of Sungaipenuh and Kerinci Regency, such as PTPN VI, Micro Hydro Power Plants, Banking, and others. Triple Helix faces challenges due to the economic conditions of the people still having difficulty getting up after the Covid-19 pandemic. In addition, there are problems on a local scale that must be resolved, such as waste and ecological damage. It is urgent because the City of Sungaipenuh and Kerinci Regency are centered on the tourism industry, so the natural beauty is a determining factor in improving its performance.

The Covid-19 pandemic is a challenge for the tourism industry. Restrictions on the movement of people have undermined the growth of the tourism industry. In the broad sense of service management, government policies cannot yet be felt in the tourism industry. The government provides many Direct Cash Assistance (BLT) to SMEs that sell goods, not services. Another thing that is problem in Sungaipenuh City and Kerinci Regency is the problem of accessibility. It must be immediately given a solution by making a particular strategy. It is acknowledged that all entities or those representing the role of the triple helix are highly anticipated to support the economic development of the people of Sungaipenuh and Kerinci. Several areas that are urgently needed to be resolved are community economic problems, especially SMEs that have been affected by the Covid-19 Pandemic. Then there is the ecological problem, where many forests are logging at the foot of Mount Kerinci, and the garbage problem, an obstacle in Sungaipenuh City.

This campus started a Community Service program a long time ago. IAIN Kerinci, for example, spends one billion rupiahs annually for lecturer service and research programs. IAIN Kerinci organizes the Real Work Lecture (KKN) program with thematic methods every year. This program allows students to carry out community service programs as one of the obligations to complete their studies. The program is expected to be able to answer the problems that exist in society.

The results of interviews with the leadership of the IAIN Kerinci show that the work program is more directed at improving education and religion in the community. Religious moderation is one of the crucial themes promoted by IAIN Kerinci in society. Work programs are more likely to lead to that theme.

The government sees the other side of the problems that exist in society today. The local Government's focus is on economic issues and waste. Kerinci and Sungaipenuh have great tourism potential, but the people's economy is still too low. MSME development is one of the strategies currently being promoted by the local government. The SMEs in question are more directed at the downstream tourism industry. It follows regional strength.

Apart from economic problems, waste is a significant problem in the cities of Sungaipenuh and Kerinci. As a tourist destination, it is an obligation that clean environmental conditions are the primary support. The comfort of the tourists is greatly disturbed by the garbage. Currently, the waste problem is big because there is no final waste disposal site the local government can manage. The private sector, represented by companies operating in the City of Sungaipenuh and Kerinci, has a slightly different trend. Even though the potential in the region is tourism, most corporate social responsibility programs focus more on developing the creative economy.

Hendi Fresco (Manager Mangun Jaya) said, "There are differences in the focus of work. Usually, the government helps in the licensing process if the Campus is more inclined to increase the capacity of Human Resources, both in strengthening morale and work skills, while if the company is more towards facility assistance". One of the mentoring programs carried out by Helix was carried out for members of the Barokah Coffee Cooperative, Kayuaro District, Kerinci Regency. Bank Indonesia for five years, providing assistance or programs where the programs are continuous; Development of Coffee Drying Domes, HR Capacity, exhibitions, export training, competitions, coffee production machines, and coffee marketing. Currently, the Koerintji Barokah cooperative has entered stage 5, where after the completion of stage 5, the ground coffee marketing program, Bank Indonesia will move to another target.

4.3 Farmer Quality Improvement Cooperation (Quality Control System)

The Koerintji Barokah Cooperative together becomes Rikolto Partners, a Non-Governmental Organization (NGO) from Belgium that focuses on increasing the capacity of Village Human Resources, which has the potential to improve the economy, increasing agricultural capacity, especially Koerintji Barokah Coffee Farmers together in Jernih Jaya Village which will make farmers better.

The Plantation Service has a budget for assistance to Farmer Groups, which is open yearly. However, each Cooperative requires samples of coffee seeds, solar purer domes, and other agricultural tools. The Plantations Service will provide 10,000 Arabica Coffee seeds to the Cooperative in 2022, distributed to coffee farmers. With each Helix's capabilities, duties and work portion, the government can play a role in training, capital, markets, and networking in community empowerment. Meanwhile, Higher Education can play a role in strengthening human resources, networking, innovation, and technology. At the same time, the private sector can take the role of investment, technology, and innovation. To unite these strengths, Helix can do business meetings, university meetings, and market meetings. Helix can manage joint programs and have a significant impact on MSME development.

4.4 The Triple Helix Barrier

Barriers occur due to several factors. First, there are differences in several interests based on each helix's point of view on societal problems. Second, the intensity of communication between the helices is still very minimal. Third is the lack of budget for each helix in implementing community service and CSR. Hendra Bustomi (Creative Economy Activator) said, "The regional government program, campuses, and private companies are still separate, running separately. No forum has been formed, so the program cannot focus."

So far, each helix seems to have not resolved the existing problems. In this case, the government has the most challenging task because the government must, of course, be the main engine in the empowerment process. The government is expected to be able to become a bridge for another helix for the technical process going forward. Inequality of knowledge in the application of technology still occurs in society. So at the application level, it is still challenging to implement. It is necessary to develop knowledge in the community in order to be able to use technology effectively.

4.5 Triple Helix Program Opportunity

Managers of local tourist destinations that are still traditional, for example, Village-Owned Enterprises (BUMDES) or individual tourism managers, have difficulty marketing the tourism objects they manage. In Kerinci, there are also hundreds of natural tourism objects managed by BUMDES and the local community, such as hot springs, waterfalls, and tea

and coffee plantation agro-tourism. However, this tourist attraction is starting to be empty of visitors because management is still carried out traditionally.

Opportunities for utilizing blockchain technology can be described with the following concepts;

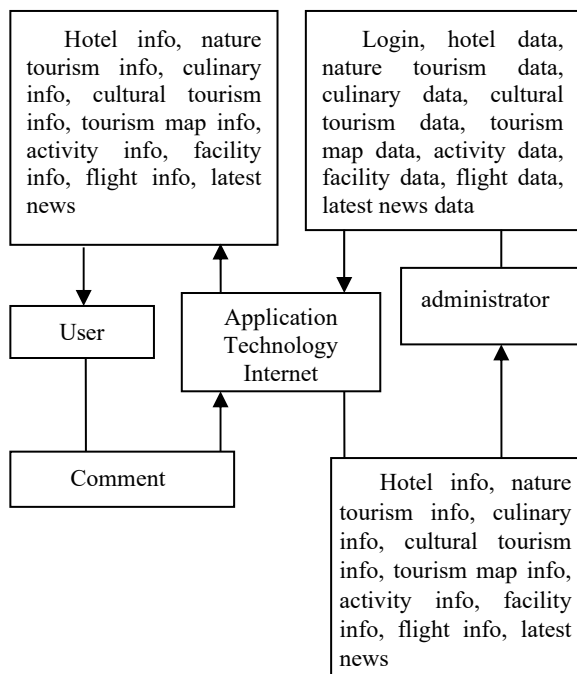


Figure 1: Opportunities for utilizing blockchain technology.

In addition to natural tourism potential, Kerinci's cultural tourism potential is promising. The socio-cultural life of the Kerinci people is still very much bound by custom. The community has inherited the Ancient Script, which is still used by the community in their daily communication. The Incung script is said to be a relic of the ancient Malay era. It can be proven through inscriptions and relics of historical objects, which are still neatly stored by traditional leaders, usually called *depatis*.

Technological developments enable virtual-based shared programs. Joint programs derived from digital methods can be further implemented and evaluated with each institution. Digital methods enable continuous work programs. Because all programs implemented are accessible, there is no longer any program overlap between institutions.

Fuad (Manager of Media *Piknikkerinci*'s social media accounts) said, "The potential for tourism in Kerinci is enormous, so it can still be developed. With technological advances, work programs must sync between the Government, Campuses, and Private Parties to strengthen the community's economy."

The Creative Economy approach is an option for developing existing regional potential. Entrepreneurship is a strategy that can be carried out if you look at the potential and economic strength of today's community. With minimal capital and technological resources, entrepreneurial nature is looking for opportunities to get maximum results with minimal capital. The government's role as an actor driving the Creative Economy as a Catalyst (Suryana, 2013) encourages SMEs can survive during a pandemic, namely in the form of providing financing, incentives, and protection.

4.6 Research Findings

In the research process, the triple helix program in the field was greatly influenced and received direct intervention from the Indigenous Institutions. For example, the decision-making process in rural areas still depends on local customary rules. It is consistent with that suggested by (Scioli et al., 1997). A fourth helix can be added to the model, representing Culture-based publics, Civil Society and Arts-Based Innovation. The Quadruple Helix model emphasizes the natural environment of society (Scioli et al., 1997).

Customary institutions participate in community economic development. In fact, according to prevailing social norms, *adat* is responsible for the economy of the community it shelters. *Adat* does not only provide input in development programs but also has resources that the community can utilize to develop the economy independently.

An example of a government program that strengthens the position of *adat* is the granting of customary forest management rights. The *Perhutani* program provides more substantial power to customary stakeholders or equivalent to the Regional Government.

Indigenous peoples regulate themselves in relations with their members through customary law, not only socially, but now indigenous peoples also have the right to manage their own resources such as customary forests, independently. The government has given them authority, even though it is still not optimal at this time, because indigenous peoples still have to receive assistance to manage their resources. Weaknesses in their skills and networks are points that can be corrected by the government, the private sector, and universities" (Interview with the Chairman of the DPRD Kota Sungaipenuh).

5 CONCLUSIONS

Several areas urgently need to be resolved immediately, and it is hoped that the role of the triple helix is to address community economic problems, especially SMEs that have been affected by the Covid-19 Pandemic and ecological and waste problems. The three helixes have prepared themselves by forming a structure to manage cooperation, but these structures are not yet related.

The structure has been equipped with a work program but has a different focus from one helix to another. Apart from these obstacles, what can be contributed by each helix is that the government can play a role in training, capital, markets, and networking in community empowerment. Meanwhile, Higher Education can play a role in strengthening human resources, networking, innovation, and technology. At the same time, the private sector can take the role of investment, technology, and innovation.

Customary institutions have become a force equal to other helices, especially in the Kerinci and Sungaipenuh areas. Therefore customary institutions can be included in the helix concept.

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Technology Assistance for Successful Project-Based Learning Implementation During Covid-19 Outbreaks

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Abstract: Implementing project-based learning during the covid-19 pandemic is a challenge. Thus lecturers need technical assistance to make it run well. This article describes how the lecturers used technology assistance while implementing project-based learning. It was a qualitative method with a descriptive approach. Observation, interview, and document analysis were used to gather the data. The result showed that; technology assistance was found in each stage of project-based learning, such as preparation, planning, creating a project, monitoring and revising, and evaluation. In addition, various technology was used during the implementation of project-based learning, such as Google Search engine, Google Form, Zoom Meeting, Instagram, and YouTube.

1 INTRODUCTION


In preparing students to face the challenges of the 21st century, teachers must equip students with basic skills (hereafter is 4Cs) such as communication, critical thinking, collaboration, and creativity (Partnership for 21st Century Learning, 2015). However, the 4Cs can only be obtained when students actively participate in learning (Rahmawati, Suryani, Muhammad, & Sukarmin, 2020). Furthermore, 21st-century learning forces teachers to design their learning in a way that will enable them to prepare students for the twenty-first century's workplace (Jia, Oh, Sibuma, LaBanca, & Lorentson, 2016).


One of the methods that can facilitate students to actively engage in the learning process and bring the workplace environment into the learning process is Project-based Learning (hereafter PjBL). PjBL allows the students to design, plan and carry out a project that produces various outputs, such as a product, publication, or presentation (Patton in Riswandi, 2018). Language expertise emphasizes that PjBL is a task with a planned outcome conducted in and outside the classroom (Sultana, 2015).


Nevertheless, implementing PjBL since the Covid-19 outbreaks is not easy.

During the Covid-19 outbreaks, most countries apply community activities restrictions enforcement (PPKM) to reduce the transmission rate of Covid-19. Therefore, online learning is required to facilitate teachers in delivering the material to students. Implementing online learning forces teachers to use technical assistance in the teaching-learning process. Technology assistance in the teaching-learning process raises a new term called educational technology. The 2008 AECT defines educational technology as the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources (Januszewski & Molenda, 2008). In addition, technology learning assistance is the effort to integrate the teaching-learning process with educational technology.

Some studies focus on the investigation of technical assistance in online learning. The first study, "Experiencing technology integration in Education: children's Perceptions," found that students in this study were more independent when they learned using computers (Baytak, Tarman, &

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Ayas, 2011). The second study, "Prospective teachers' perception of barriers to technology integration in education," revealed that for preservice teachers, parents and security were barriers to integrating technology in education (Dinc, 2019).

By recognizing the critical role of technology in the successful teaching-learning process, the present study aims to investigate the technical assistance in implementing PjBL. Next, this research is guided by the question: "How is technology-assisted learning during the implementation of project-based learning?"

2 LITERATURE REVIEW

2.1 Project-Based Learning

Since there is no absolute definition of PjBL, experts define PjBL by describing its characteristics and activities. PjBL contains at least three constructivism-related qualities: context-specific, student-centered, and learning that involves sharing knowledge and understanding (Coco in Kokotsaki, Menzies, & Wiggins, 2016).

There are three main activities in PjBL coverage: beginning in the classroom, moving out into the world, and returning to the classroom (Fried-Booth in Stoller, 2002). Furthermore, the other study highlights six PjBL activities: preparation, planning, research, conclusions, presentation, and evaluation (Papandreu in Thuan, 2018). Then, the other research study stresses the activities of PjBL, covering essential questions, planning, scheduling, monitoring, assessment, and evaluation (Mayasari, 2017).

Considering the explanation above, it can be concluded that activities in PjBL implementation can plausibly vary, and teachers can design classroom activities tailored to the student's learning needs.

2.2 Why Teacher Needs Technology Assistance in the Implementation of PjBL?

The reason for using technology in the classroom is to help students develop the skills demanded by the 21st-century workforce (Rahmawati et al., 2020).

There are several ways that technology can be incorporated into education. It should offer a rich learning environment, help students gain a multidimensional understanding of a complicated phenomenon, encourage a flexible arrangement of information for challenging learning materials, and

accommodate various demands based on individual characteristics (Pilten, Pilten, & Sahinkaya, 2017).

The following reason is that online learning cannot run optimally without the help of technology. To slow the spread of Covid-19 during epidemics, most nations implement PPKM. Therefore, online education is necessary to help teachers provide learning.

3 METHOD

3.1 Research Background and Setting

The study was carried out at the English Education Study Program at a private university in East Java. The teaching-learning process was carried out online during the research. The qualitative method was used to investigate the integration of technology in the implementation of PjBL. The case study approach is chosen because it aims to understand complete and in-depth cases (Hamied, 2017).

3.2 Participant

The research participant was an English lecturer in one of the private universities in Kediri, East Java, Indonesia. The participant was chosen because she used technology assistance to implement PjBL in her teaching-learning process.

3.3 Instrument, Data Collection, and Data Analysis

Three instruments were used to gain data: observational form, interview guide, and document. Data were collected through the observational form, interviews, and documentation. The observation was carried out during one semester. While observing, the researcher records the activities and takes some notes. The interview was unstructured to clarify the data obtained in the observation. In the end, the researcher was asked for supporting documents such as lesson plans, students' project, and students' scores.

The data from the document analysis were used as secondary data in support of the primary data. The collected data from the observation were then analyzed by storing and classifying them into some points. First, the researcher transcribes the observation data. Then, it was continued by adding pattern codes (categories or themes) to analyze the data. These stages were needed to ascertain the trustworthiness of the data analysis process.

4 FINDINGS AND DISCUSSIONS

This section presents the answer to the research question: “How is technology-assisted learning during the implementation of project-based learning”?.

4.1 Findings

The result showed that technical assistance was found in all stages of project-based learning: preparation, planning, creating a project, monitoring and revising, and evaluation. However, the technology used in all stages was various. The choice of technology used in each stage was based on the needs. A summary of technology assistance learning is depicted in Table 1.

Table 1: Technology Assistance learning.

PjBL Stages	Technology Assistance
Preparation	Students had to send their reasons for choosing one of the writing professions through Google Forms.
Planning	Students conducted their research (using a search engine machine) on the writing profession that they had chosen. Then, students have to compose an essay draft.
Creating project	The lecturer showed an example of a video essay carried out through a Zoom meeting.
Monitoring and revising	Students had to report their progress regularly through Google Forms.
Evaluation	Students had to upload their products on Instagram and YouTube.

The first technology assistance was found in the preparation stage. In this stage, the lecturer sent a file (through WhatsApp Group) entitled “20 jobs for the writer,” including a task related to the final project, and asked the students to read the file. After the reading activity, the students had to do a task. The task was to choose one writing job they were interested in. Then, the students had to work on their paper explaining the reasons for choosing the job and send their work via the Google form to which the lecturer provided the link. The second integration was found in the planning stage. In this stage, the lecturer instructed students to write a draft. However, before the composition of the draft, the students were asked to do mini-research related to the writer’s chosen job using search for information with the help of search engines (e.g., Google Search) for information compilation.

The third integration was found in the creative project stage. In this stage, the lecturer assigned

students to do a project in the form of a video essay from the essay they had previously written. First, the lecturer showed an example of a video essay and then discussed what items had to be displayed in the video essay. This activity was carried out through a Zoom meeting. The fourth integration was found in the monitoring and revising stage. The students had to report their progress regularly through Google Forms during the project completion. The lecturer would read the report and give some notes to be revised. It was to minimize errors before the project submission. The last technology assistance was found in the evaluation stage. There were two versions of the video essay: the short version and the full version. The short version was uploaded on Instagram, and the full version was uploaded on YouTube.

In addition, the lecturer used different technology in each activity of PjBL. There were five technologies used in the implementation of PjBL, and are Google form, Google search engine, Zoom meeting, Youtube, and Instagram. The lecturer chose different types of technology for each PjBL activity for utility purposes.

4.2 Discussions

The study aimed to investigate the technical assistance in online learning, especially during the implementation of project-based learning. The findings showed that technology assistance learning was found in every stage of PjBL implementation. First, in the preparation stage. It was found that the lecturer integrated two technologies in the teaching-learning process: delivering materials and collecting the task. The lecturer chose different technology because of utility purposes. Second, in the planning stage, the lecturer tried to simplify the mini-research process using technology assistance, namely a search engine machine. It was to help students save more time and money rather than conducting mini research in the library following the high risk of Covid-19 transmission. Thirdly, in creating the project stage, the technology assistance optimized the lecturer in facilitating the students through sharing the information about the expected product of the project. In this stage, the lecturer could also open or accommodate the question-answer session so the students understood their project well.

Fourthly, in the monitoring and revising stage, the technology assistance enabled the lecturer to monitor the students regularly. The lecturer had the authorization to design the activities of PjBL in the classroom but then allowed the students to complete the project outside the class under supervision due to

the limited duration in the classroom (Sultana, 2015). Finally, in the evaluation stage, uploading the final project on Instagram and YouTube gave some benefits for both lecturer and students, such as helping the students collect the project without time and spatial restrictions and helping the lecturer evaluate the project everywhere. It enabled more viewers to see or assess the result of the student's project.

5 CONCLUSIONS

It can be concluded that technology-assistance learning can be implemented in all project-based learning stages. Besides, the lecturer can utilize various technology for learning and students' needs. All in all, technology assistance brings advantages for lecturers and students as long as there is an anticipation of the drawbacks or barriers and its utility in teaching-learning.

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Euphemism in *SAiA* Short Stories by Djenar Maesa Ayu as a Model for Establishing Language Politeness in Indonesian Language Learning: Corpus Linguistic Studies

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Abstract: This research is motivated by the many unpleasant actions or events that, if stated as they are, will offend other people in communication activities. The purpose of this research is to find out how the euphemisms in the collection of *SAiA* short stories by Djenar Maesa Ayu can be used as a model for forming politeness in Indonesian language learning in Junior High Schools, which is carried out with a corpus linguistic approach. The research data in words, phrases, and clauses were obtained from the speech of the characters in the story, which contained elements of euphemism. Data collection used the document technique through the corpus linguistic method, namely the Indonesian Archipelago Corpus (KORTARA). The triangulation technique is used in validating research data. Research data analysis techniques include categorization, tabulation, and interpretation with substitution techniques to find similarities and differences in euphemism as a replacement form. The findings show that there are eight forms of euphemisms, namely (a) figurative expressions, (b) metaphors, (c) flippancy, (d) circumlocutions, (e) abbreviations, (f) one for one substitution, (g) part for whole euphemisms, and (h) hyperbole; euphemisms in the collection of short stories *SAiA* by Djenar Maesa Ayu can be used as a model for forming language politeness in learning Indonesian discussion texts for class IX at Junior High School related to basic competency 4.10.

1 INTRODUCTION

In daily communication, there are many unpleasant actions or events, but if stated as they are, they will offend other people. Therefore, speakers are trying to find ways to convey ideas, thoughts, and feelings with the same intention that can be conveyed. However, other people's feelings are not offended, so there is much use of euphemisms. The use of euphemisms can be said as a consideration in language. If it is deemed inappropriate, it is replaced with other words or expressions that are better and more polite.

In this regard, understanding is needed in selecting diction so that speech looks more polite in communicating orally and in writing. Politeness in language can show the character of the speaker. Thus, in expressing ideas, thoughts, ideas, and feelings in all conditions, he can choose words or expressions that are good and polite. Brown & Stephen (1987) stated that language politeness is a speaker's attempt to maintain the face (self-esteem) of speakers and

speech partners. According to Leech (1993), politeness is an attempt to make the possibility of impolite beliefs and opinions as small as possible. Therefore, understanding the choice of diction is important to avoid impolite expressions. Forms of speech or expressions that are considered more polite and subtle in linguistics are referred to as euphemisms.

Euphemism or euphemism is a type of change in meaning and part of language style. In literary works, euphemism is certainly used. The form conveyed in this figure of speech is inseparable from language. This figure of speech can respect the reader with adjustments to the context (Saputri et al., 2019). According to Allan & Burridge (1991), Euphemism is a term used to replace inappropriate/inappropriate expressions to avoid the possibility of losing face to the speech partner and the listener. Euphemism refers to the refinement of words considered rude, impolite, and taboo so that the listener or speech partner is not offended. Euphemisms have a lot to do with humans,

both related to nature, bodies, actions, and social reality, which are considered bad (Fadely, 2018).

In literary works, many novels use euphemisms, and this is because many activities or actions, when expressed as they are, will feel rude or offend other people. In the collection of short stories *SAiA* by Djenar Maesa Ayu, there are many elements of euphemism to soften words that are considered harsh, which the author uses to convey messages more politely. The finding of the euphemism element refers to its formation. Allan & Burridge (1991) suggest several views in determining the form of euphemism. These forms of euphemism include (1) figurative expressions, (2) metaphors, (3) flippancy, (4) remodeling, (5) circumlocutions, (6) clipping, (7) acronyms, (8) abbreviations, (9) omission, (10) one for one substitution, (11) general for specific, (12) part for whole euphemisms, (13) hyperbole, (14) understatement, (15) jargon, and (16) colloquial. However, not all forms of euphemism in the collection of short stories *SAiA* by Djenar Maesa Ayu are the same as the forms of euphemism put forward by Allan & Burridge.

The use of euphemisms in literary works can be said to be a form of tolerance in conveying thoughts and ideas by using good and polite language so as not to offend other parties. Likewise, in interactions at school, euphemisms can support the achievement of character education by forming friendly and communicative behavior that is high intolerance. However, in classroom learning interactions, it is not uncommon to use expressions that are considered impolite. It certainly impacts losing self-confidence and feeling unappreciated between students, teachers, and fellow students. Based on these considerations, it is important to study euphemism as a model for forming language politeness in schools.

Much research has been done on euphemisms in educational units. Nawangwulan (2017) examines the use of euphemisms in *the Solopos* editorial in the February-March 2017 edition and their implications as Indonesian language teaching materials in the SMP curriculum 2013 KD 4.1. The findings show the forms of euphemism found in the study, namely figurative expression, one word replacing another, abbreviations, use of borrowed words, flippancy, foreign languages, metaphors, idioms, hyperboles, circumlocutions, and acronyms. These forms can be used as Indonesian language teaching materials for review text material in class VIII SMP.

Sabarua (2019) examines euphemism as an alternative to language politeness in classroom learning interactions. The findings show that euphemisms can be used as an alternative in reducing

teachers' speaking or language activities that have nuances of violence, racism, harassment, or unpleasant expressions. Forms of euphemisms that teachers can use include; euphemisms related to death, euphemisms related to sex, euphemisms related to illness and disability, euphemisms related to bodily excretion, euphemisms related to social reality, which is considered something bad, euphemisms related to unpleasant fate, euphemisms related to bad traits, and euphemisms related to things that can cause harm.

Sabilla et al. (2021) examine euphemisms' form and function in *Tempo*: co-opinion articles and their use as teaching materials for learning Indonesian in high school. The findings show that there are ten forms of euphemism in *Tempo*. Co-opinion articles, namely one word replacing another word, figurative expressiveness, and metaphor. Use of abbreviations, acronyms, general to specific; use of borrowed words. Use of foreign terms. Perphrases. Colloquial and general to specific. This euphemism is used as teaching material for learning Indonesian in editorial text material in class XII high school.

Some of the findings that have been described have relevance to the research that researchers have conducted. The similarities to the research conducted by Nawangwulan (2017), Sabarua (2019), and Sabilla et al. (2021) both study forms of euphemism. The difference lies in the research focus and data sources. Nawangwulan's (2017) research focuses on using euphemisms in Indonesian language teaching materials for reviewing text material in junior high schools. The data source is the *Solopos* editorial. Sabarua (2019) focuses on using euphemisms as an alternative to language politeness in class, and the data sources are students and teachers. Sabilla et al. (2021) the use of euphemisms in Indonesian language teaching materials for editorial text materials in high school, and the data source is *Tempo*—co-opinion articles. Unlike the research that has been done before, this research focuses on the form of euphemism as a model for forming politeness in language learning Indonesian discussion text material in junior high school, and the data source is a collection of short stories carried out with a corpus linguistics approach to facilitate the data collection process. Cheng (2021) argues that corpus linguistics is an empirical method in linguistic analysis and description to study the language used by speakers naturally. Corpus linguistics works by analyzing data through a compilation process based on categories and units of analysis. In the next stage, the most important categories and units of analysis in corpus linguistics are word lists, keywords, and

concordances. A word list is many words in the linguistic data and the number of times they appear in the source text. Keywords are groups of words with the highest frequency of occurrence and are assumed to represent the main topic in the text. Concordance is a list of words that collocate with other words and form a new meaning based on the context.

The use of corpus linguistics in this study is to use technology in education, bearing in mind that the data in the research findings are not small. Hence, the research findings are more reliable by using corpus linguistics, namely KORTARA.

Based on the description that has been explained, this study aims to find out how the euphemisms in Djenar Maesa Ayu's collection of *SAiA* short stories can become a model in shaping politeness in Indonesian language learning in junior high schools.

2 METHOD

Based on the problems that become research studies that focus on in-depth and thorough analysis processes, this research is qualitative research with descriptive methods (Moleong, 2010). This method is used to examine the use of language referring to euphemisms in fictional stories in the form of a collection of short stories. Analytical and operational approaches are also used to support the data review process. An analytic approach is useful for looking for differences and similarities in meaning components in linguistic forms with similarities/synonyms. In contrast, an operational approach is an approach that is useful for finding similarities and differences in the use of linguistic forms that are synonymous in various contexts (Pateda, 2010). Data in the form of facts are presented and become the research results (Ulfatin, 2014). The data of this research are in the form of words, phrases, and clauses that contain elements of euphemism in the collection of short stories *SAiA* (Ayu, 2017), which are obtained from the speeches of the story characters. The research data source is a collection of *SAiA* short stories which contains 14 short stories and one novel excerpt, namely *Air (A)*, *Dan Lalu (DL)*, *Nol-Dream Land (NDL)*, *Sementara (SM)*, *Kulihat Awan (KA)*, *Fantasi Dunia (FD)*, *SAiA (SI)*, *Qurban Iklan (QI)*, *Urbandit (U)*, *Gadis Korek Api (GKA)*, *Insomnia (I)*, *Dewi Sialan! (DS)*, *Mata Telanjang (MT)*, dan *Ranjang: Sebuah Cuplikan Novel (RCV)*. The process of collecting research data used the document technique. The document in question is a collection of short stories *SAiA* by Djenar Maesa Ayu through free engagement and proficient viewing to

obtain credible findings (Mahsun, 2007). To facilitate data collection, researchers use research tools in linguistic applications, namely the Indonesian archipelago (KORTARA), where spoken and written language is collected systematically (Nesselhauf, 2011). The triangulation technique is used in validating research data. The analysis of research data refers to the view of Wiyatmi (2017) that categorization, tabulation, and interpretation can be used in analyzing data in literary works. Data processing techniques are also used to support the findings, namely substitution techniques. Substitution techniques are used to find/find similarities and differences in euphemisms as substitute forms. The replacement technique replaces elements with the same meaning as the Big Indonesian Dictionary (Sudaryanto, 1993).

3 RESULTS AND DISCUSSION

3.1 Forms of Euphemism in the Collection of *SAiA* Short Stories by Djenar Maesa Ayu

This research focuses on the form of euphemism in the collection of *SAiA* short stories by Djenar Maesa Ayu as a model for forming politeness in language learning Indonesian discussion text material in junior high school, corpus linguistics. Based on the theory used as an indicator in research according to Allan & Burridge (1991), the forms of euphemisms in the collection of short stories *SAiA* by Djenar Maesa Ayu found as many as eight forms of euphemisms. The form of euphemism in the collection of *SAiA* short stories by Djenar Maesa Ayu was collected using the Indonesian Archipelago.

Forms of euphemisms	Amount	Percentage
Figurative Expressions	4	2.9%
Metaphor	12	8.8%
Flippancy	2	1.4%
Circumlocution	10	7.3%
Abbreviations	2	1.4%
One-for-One Substation	98	72.4%
Part of Whole Euphemisms	6	4.4%
Hyperbole	2	1.4%
Amount	136	100%

Based on Table 1, it is known that in the collection of *SAiA* short stories by Djenar Maesa Ayu, there are eight forms of euphemisms, including figurative expressions with a percentage of 2.9%, metaphors

with a percentage of 8.8%, flippancy with a percentage of 1.4%, circumlocutions with a percentage of 7.3%, abbreviations with a percentage of 1.4%, one for one substitution with a percentage of 72.4%, part for whole euphemisms with a percentage of 4.4%, and hyperbole with a percentage of 1.4%. Based on the findings obtained, it can be said that the euphemism that often appears or is used is the one-for-one substitution euphemism

3.1.1 Forms of Euphemism Figurative Expressions

Words, phrases, clauses, and sentences can be regarded as euphemistic forms of figurative expression if they are symbolic, simile, or figurative. That is, the form of euphemism figurative expressions is a form that refines words or expressions by symbolizing, likening, or alluding to other forms.

- Sometimes I also want to fly far into the past. Far back into the past. He did not meet his father, who just **let go**. (A, 2017, p. 6)
In sentence (1), the phrase *hands off* is chosen as a euphemism for not wanting anything to do anymore. The *hands-off* phrase is a verb phrase that refers to an activity. In sentence (1), the phrase *hands-off* does not mean letting go of hands, but it means not wanting to have anything to do with them anymore. The author feels the use of figures of speech has a finer sense of value than not wanting to deal with it anymore. This phrase is an expression that states the indifference of the opposing character as a form of refinement.
- They did not care even though I cried for mercy and groaned in pain. Only when they punished me did their opinions no longer contradict **each other**. (SI, 2017, p. 72)
In sentence (2), the phrase *no longer contradicts* is chosen as a euphemism for the same/agree. Phrases *no longer opposite* are adverb phrases that refer to location or position. In sentence (2), the phrase *no longer opposites* does not mean opposite or across the street but has the same meaning or agreement. This figure of speech is the same as sentences *of opposing opinions* considered more subtle than contradictory. The author uses the figure of speech no longer contradictory to show freedom in expressing so that sentence (2) has a more refined sense value.
- His friends disappeared as if **swallowed by the Earth** because of panic. The only testimony that can be obtained about Nayla is from neighbors who say that she comes home in the morning drunk after the discotheque disbands every day. (I, 2017, p. 111)

In sentence (3), the phrase *swallowed by the Earth* is chosen as a euphemism for disappearing or disappearing. The phrase *swallowed by the Earth* is a verb phrase. However, in a sentence (3), the phrase *swallowed by the Earth* does not mean being eaten by the Earth but has the meaning of disappearing or disappearing. The author feels that using figures of speech has a more subtle sense of value than the word vanishing. This phrase is an expression that states the indifference of the opposing character as a form of refinement.

3.1.2 Forms of Metaphor Euphemisms

Words, phrases, clauses, and sentences can be said to be a form of metaphorical euphemism if they are an implicit comparison between two different things. That is, the form of metaphorical euphemism is a form that refines words or expressions by comparing two vaguely different things.

- Dull hair that has been dyed a dark brown color. Height tricked with high heels and thicker than the tombstone. Anyone can become **the Goddess of the Night**. (DS, 2017, p. 116)
In sentence (4), the phrase *Goddess of the Night* is chosen as a euphemism for prostitutes or prostitutes. The phrase *Dewi Malam* is a phrase that refers to a noun that compares Dewi Malam with the character in the story. The Goddess of the Night is known as the nickname of the moon because of the beauty of its light at night. However, in sentence (4), the phrase *Goddess of the Night* does not have the meaning of the moon but has another meaning. The author's use of the Night Goddess metaphor avoids the immodest and most disgusting words/expressions so that it is in line with the language of euphemism as a polite expression in conveying satire and feelings.
- Every day Nayla spends time going to and from school with the driver, who, in the middle of the road, often invites her to play dice. If Nayla guesses the number of the dice correctly, she is allowed to crush **the lollipop** under her driver's pants. If Nayla guesses the wrong number on the dice, she must allow the driver's **lollipop** to be dipped in **the chocolate** under his pants. (SM, 2017, p. 52)
In sentence (5), there are two forms of metaphorical euphemisms: the word *chocolate* and the phrase *lollipop*. Both euphemisms refer to nouns. The author compares chocolate and lollipops with euphemistic meanings regarding sex, namely female and male genitalia. *Chocolate* said was chosen as the euphemism for the vagina, while the phrase *lollipop* was chosen as the euphemism for the penis. Based on

the context of the sentence, it is known that Nayla's character is a child. Hence the word *chocolate* and the phrase *lollipop* is judged to be more subtle than their true meaning by directly stating female and male genitalia. Through these metaphors, the author intends that readers can use metaphorical forms in certain circumstances to avoid taboo words.

3.1.3 Forms of Flippancy Euphemism

Words, phrases, clauses, and sentences can be flippant euphemisms if they contain meanings other than statements. That is, the form of flippancy euphemism is a form that has a meaning beyond what is stated.

- Even Nayla knows that people who often **sell morals** in various media are actors and users too. All eyes were opened when they were caught in a room with a woman in a five-star hotel room. (SM, 2017, p. 54)

In sentence (6), the phrase *sale moral* is chosen as a euphemism for selling adab. The phrase *sale moral* refers to the verb, which is the act of indulgence. The sale means selling, while moral means good and bad teachings regarding deeds. Based on the context of the sentence, the phrase *sale moral* has a different meaning, the author conveys the insinuation that many public figures show good morals, but the actual behavior is the opposite of what is shown to the public. Thus the phrase *sale morals* in a sentence (6) has meaning outside of a statement or is flippant. *Moral sale* phrases are considered more refined, so the euphemism serves to smooth speech.

- So when Nayla's child shared what her mother had told her friends, she suddenly became a laughingstock. Moreover, when her friends told their mothers, Nayla became **a target**. (FD, 2017, p. 63)

In sentence (7), the phrase *used as a bully* is chosen as a euphemism for a toy or object of anger. The meaning of the phrase *bully* does not mean an artificial object resembling the moon. However, in the context of sentence (7), the meaning that arises is a toy or target of anger, so the meaning of a toy or target of anger is more euphemistic, using the phrase *bully material*. Thus the phrase *material for the moon* in a sentence (7) has meaning outside the statement or is flippant.

3.1.4 Circumlocution Euphemisms

Words, phrases, clauses, and sentences can be said to be a form of circumlocutionary euphemism if used in some longer and more indirect words. That is, the

form of circumlocution euphemism is a form whose expression is longer than the actual meaning.

- Then told to stand all day without anyone covering his feet. However, the screams of pain that wanted to come out of his mouth could only then scream in his mind. No heat could burn him alive for Lalu except for **the coals in his mother's eyes**. (DL, 2017, p. 10)

In sentence (8), the clause *coals in his mother's eyes* mean anger or anger. However, in writing, it is not written directly. However, using words or expressions that are longer to be considered subtle compared to *anger* or *rage*. Based on the context, sentence (8) explains that the author expresses the fear of Lalu's character to his mother so that from the eyes of the mother character, you can already see anger and fury. The value of the taste of the *ember clause in his mother's eyes* is considered more polite in its disclosure.

- Darkness has taught me always to forgive those around me. Since childhood, I have chosen to hide in the dark. When my husband comes home drunk, I pretend to **close my eyes into the darkness**. (MT, 2017, p. 127)

In sentence (9), the clause *closes that entering darkness* means sleeping. The clause *closing into the dark* refers to the verb. Claus *closed into the darkness* of the euphemism of the word stretch/sleep. Based on the context, sentence (9) describes the character I, who is used to hiding in the dark, so the word sleep is expressed by *closing the expression to enter the darkness*. This clause has a more refined and polite taste value than the word delay.

3.1.5 Forms of Euphemism Abbreviations

Words, phrases, clauses, and sentences can be said to be abbreviated euphemisms if they are abbreviated words into several letters. The form abbreviation euphemism is a form in which the expression is shortened to a letter or a combination of letters.

- Nayla feels that people who lie too often can no longer distinguish between lies and truth. They also treat people with **HIV/AIDS**, like Nayla, without feelings. They see Nayla as lower than animals. (SM, 2017, p. 54)

In sentence (10), there is an abbreviated euphemism for the word *HIV/AIDS*. This form of euphemism refers to a noun, namely disease. Based on the context of the sentence (10), the author conveys that the character Nayla suffers from a disease that makes people around her view her as lower than animals. The community calls *HIV/AIDS* a cursed disease because society has been

indoctrinated that the disease is considered to only be contagious to certain people. *HIV/AIDS* stands for *Human Immunodeficiency Virus* and *Acquired Immune Deficiency Syndrome*. Therefore, *HIV/AIDS* is considered more subtle than the phrase cursed disease, so this euphemism avoids taboo words.

3.1.6 One for One Substitution Euphemism

Words, phrases, clauses, and sentences can be regarded as euphemisms where one word replaces another word if that form can replace other forms. The use of a word is considered more euphemistic than one other word. It usually uses synonyms to produce a more refined expression.

- The thick yellow water was overflowing from my mouth, they said. I took fifty calming pills I downed. It should have been a hundred pills like the ones Marilyn Monroe consumed until she **died**. (A, 2017, p. 7)

In sentence (11), the word *death* is chosen as a euphemism for death. The word *death* is synonymous with the word death. The word *death* in this context is considered softer than death because it refers to a person, namely Marilyn Monroe. The word dead is usually used for animals and plants, so the use of the word is considered taboo which animals and plants often use.

- The number that lights up on the elevator wall reminds Nayla of **her wedding date**. The grand **wedding** that his parents wanted. Nayla left a real soul mate. (NDL, 2017, p. 43)

In sentence (12), the word *marriage* is chosen as the euphemism of marriage. The word *marriage* is synonymous with the word marriage. Likewise, in sentence (11), marriage is considered more refined than marriage because it refers to people. The word mating or mating is usually used for animals during reproduction, so this word is considered impolite and taboo because animals often use it.

3.1.7 Forms of Part for Whole Euphemisms

Words, phrases, clauses, and sentences can be considered part of whole euphemisms if the form is the form of a special word into a more general word.

- He sat quietly in the courtroom's **prison chair** as the public prosecutor presented evidence of a baseball bat, school uniform, and bloodstained shoes. (SI, 2017, p. 75)

In sentence (13), the phrase *prison chair* is chosen as the euphemism for the defendant's chair. The phrase *prison chair* is especially for people accused in court or people subject to punishment. The phrase *prisoner's chair* is a word that is commonly used by

the community because it is considered more refined than the defendant's seat.

- However, what can fight metabolism? Is there anything that can stop the stomach's rumbling when the intestines are no longer strong enough to hold the dirt lining up? (QI, 2017, p. 79)

In sentence (14), the word *dung* is chosen as the euphemism for dung. Based on the context, the sentence describes a state of the stomach that is not well and cannot hold back excretion. The dirt in question is feces. However, the word *dung* is a word that is more commonly used as a smoothing expression than the word dung. The use of the form *part for whole euphemisms* is in line with the meaning of euphemism, namely the removal of bodily waste by replacing feces with *excrement*.

3.1.8 Forms of Hyperbole Euphemism

Words, phrases, clauses, and sentences can be a form of hyperbole euphemism if the form exaggerates and exaggerates the statement. That is, the form of hyperbole euphemism is a form whose expression softens a word by using an exaggerated expression.

- After that, Nayla forgot. He is too young to digest it. Nevertheless, after he meets someone in middle school, someone who always makes **butterflies fly in his stomach**, someone who spreads rainbow colors in every step, and someone who does not always create darkness like her parents, Nayla is also intoxicated with first love. (SM, 2017, p. 53)

In sentence (15), the clause *of butterflies fluttering in his stomach* is chosen as a euphemism for laughing out loud. This form of euphemism in the form of hyperbole is considered excessive because it expresses things that are impossible to happen. However, using hyperbolic clauses is considered more euphemistic so that the speech does not seem frontal, so *the butterfly flying in the stomach* clause is more pleasant to hear than the laughing-out-loud phrase.

- Experiencing all such humiliation is not necessarily surprising. Nayla is **full of eating experiences**. (SM, 2017, p. 55)

In sentence (16), the phrase *satiety eating experience* is chosen as a euphemism for many life experiences. The author exaggerates his story in this sentence as if the experience is edible. However, the expression is considered euphemistic, so the author softens the expression using hyperbole.

3.2 Utilization of Euphemism Forms in a Collection of Short Stories as a Model for Establishing Language Politeness in Learning Indonesian in Junior High School

In understanding learning, there are teaching and learning activities. The activity shows interaction involving teachers and students. In learning interactions, students must actively practice good communication skills so that students understand that the material provided by the teacher is visible. Therefore, students need to use good and correct language without ignoring politeness. Due to the characteristics of students, especially in junior high schools, they tend to imitate what is heard due to limited vocabulary, so in this case the teacher as an educator must be careful in choosing words or expressions in the learning process. In responding to this, the teacher can use euphemisms in manipulating words or expressions considered rude to form politeness in students' language.

The use of the study of euphemistic forms in the collection of *SAiA* short stories by Djenar Maesa Ayu as learning can be represented through learning Indonesian in the 2013 Curriculum, discussion text material with KI and KD as follows.

- (1) KI. 4. Demonstrate the skills of reasoning, processing, and presenting creatively, productively, critically, independently, collaboratively, and communicatively in the concrete and abstract domains following what is learned at school and other sources from the same theoretical point of view.
- (2) KD. 3.10. Examine the opinions and arguments for and against the discussion text related to the problems read and heard.

KD. 4.10. Present ideas/opinions, arguments for and against, and solutions to actual problems in discussion texts by paying attention to the structure and aspects of language and oral aspects (intonation, gestures, pronunciation).

Through the analysis of euphemisms in this study, the collection of *SAiA* short stories by Djenar Maesa Ayu was taken and used as a form of skill improvement through the analysis of the short stories presented to form a more critical mindset in students. Euphemism is important to convey in KD discussion text because, in learning, there is a presentation or delivery of ideas/opinions that require skills in choosing the right words or expressions so that in conveying ideas, it does not offend other parties. That is because arguments support and contra related to the issues discussed in the discussion text learning. The

existence of euphemisms can show how students express whether students agree or disagree with actual problems with good and polite words or expressions. Therefore, the study of the form of euphemism in this study can be used as an example for students to understand meaning as well as being realized in communication activities so that politeness can be formed in language, considering that euphemism is a form of refinement of polite words so as not to offend other parties.

4 CONCLUSIONS

Euphemism refers to the refinement of words considered rude, impolite, and taboo so that the listener or speech partner is not offended. The author uses euphemisms in the collection of short stories *SAiA* by Djenar Maesa Ayu to avoid words or expressions that have negative feelings. Based on the results of the research shows that there are eight forms of euphemism in Djenar Maesa Ayu's *SAiA* short story collection, namely (a) figurative expressions with a percentage of 2.9%, (b) metaphors with a percentage of 8.8%, (c) flippancy with a percentage of 1, 4%, (d) circumlocutions with a percentage of 7.3%, (e) abbreviations with a percentage of 1.4%, (f) one for one substitution with a percentage of 72.4%, (g) part for whole euphemisms with a percentage of 4, 4%, and (h) hyperbole with a percentage of 1.4%. The euphemisms in Djenar Maesa Ayu's collection of short stories *SAiA* can be used as a model in learning Indonesian in grade IX Junior High Schools regarding basic competency 3.10 and 4.10 regarding discussion texts to serve as examples. Besides being able to be used as a model, the euphemisms in Djenar Maesa Ayu's collection of *SAiA* short stories can help shape students' characters to communicate more politely. The results of the findings assisted by corpus linguistics in the form of KORTARA are expected to be a reference for other linguistic researchers, so that they can take advantage of developing technology in research. Through this research, it is also hoped that other researchers can examine euphemisms in different objects to maximize them as a reference.

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Development of STEM Based e-Module Using Flip PDF Corporate on Energy Conservation Law Materials

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Keywords: Conservation of Energy, e-Module, STEM.

Abstract: This study aims to develop a STEM-based e-module on energy conservation law. This research uses the Research and Development (R&D) method with a 4D development model. The 4D development model consists of four main stages: define, design, develop, and disseminate. The evaluation of validators comprised of media and material experts carried out this research to the build stage. The Data collection techniques are through interviews; the student needs analysis and validation questionnaires from media and content experts. The results showed that the percentage of product value based on media experts was 94.91%, with valid criteria covering aspects of appearance, presentation, and quality of supporting media. The product value based on material experts is 95.00%, with valid criteria, including parts of the suitability of practicum objectives with learning outcomes, clarity of practicum series, and STEM components. Thus, the STEM-based e-module on the energy conservation law material has met the valid criteria for teaching materials in practical activities.

1 INTRODUCTION

Education is the most crucial aspect of the development of a country because education aims to prepare quality human resources to face challenges in the 4.0 industrial revolution era (Syahirah et al., 2020). Education that is held must be able to improve the quality of one's self in order to be able to adapt to advances in the field of technology which is increasing rapidly (Sari, 2020). The creation of intelligent, responsible and adaptive human beings to the development of the times can be realized through education, in particular through science learning. Science learning aims for individuals to have mastery of the basics of science followed by mathematical abilities. Mastery of the basics of science and mathematics can be obtained through learning using the STEM approach (Zulaiha & Kusuma, 2020).

STEM is an approach that integrates science, technology, engineering and mathematics in the learning process. The application of technology is a supporting tool to help students understand the concepts being studied. The application of the technique aims to train students to design, assemble, draw, and do other activities so that students understand the procedures for solving problems.

Furthermore, mathematics aims to simplify the concept of science itself more systematically and mathematically (E. Susanti et al., 2021). Applying STEM to learning can encourage students to design, develop and utilize technology and apply knowledge (A. Susanti, 2020).

Accuracy in choosing the presentation method or approach is the key to success in actualizing the learning outcomes that have been formulated (A. Susanti, 2020). In addition to the choice of approach, the quality of learning and the achievement of learning objectives are also influenced by the use of teaching materials (Arisya et al., 2021). One of the teaching materials that educators can develop is a module. A module is a teaching material that is systematically arranged in a language that is easily understood by students according to their level of knowledge and age so that they can learn on their own (independently) with minimal assistance or guidance from educators (Prastowo, 2012). Technological advances have developed the print module into an electronic module (e-module). E-module is an embodiment of multimedia-based teaching materials. E-modules were born due to teaching materials integrated with technological advances (Pratiwi, 2021). E-modules can be developed on a STEM basis. STEM-based e-modules are electronic learning

modules that integrate related disciplines. The use of STEM-based modules in learning can build professional characters who have skills, good time management, work with colleagues, use technology and effective ways to solve a problem being discussed (Syahirah et al., 2020).

The law of conservation of energy in this study describes the conservation of mechanical energy. The law of conservation of mechanical energy explains that an object's total mechanical and potential energy at any point is always constant. The magnitude of the mechanical energy at any point is sometimes constant due to the influence of non-conservative forces acting on objects (Sulistyaningsih et al., 2022). The amount of mechanical energy that is not constant due to non-conservative forces is a discussion that needs further study by students in learning. Proof of the law of conservation of energy can be done by using a mini roller coaster.

The mini roller coaster is a prototype designed to resemble the trajectory of a roller coaster ride (Maulidah et al., 2022). This tool has been successfully designed in the fundamental physics laboratory, but the module for using this tool in learning fundamental physics has yet to be available. Therefore, the researchers took the initiative to develop a STEM-based e-module on energy conservation law. In developing the e-module, researchers will use the software flip PDF corporate. This software is easy to use, with the appearance of publishing as a flip (back and forth) like an actual book.

2 METHOD

This study uses the Research & Development (R&D) method. In this study, the crucial target is developing STEM-based e-modules on energy conservation law materials to be used in fundamental physics courses. This study used a 4D model consisting of four main stages: define, design, develop and disseminate. This research is limited only to the development stage. The activities carried out at each stage of development are described as follows.

2.1 Define

The define stage is a stage that aims to determine and define the needs in the development process. This stage is often called a needs analysis. In the context of developing teaching materials in the form of e-modules, the definition stage is carried out by:

2.1.1 Curriculum Analysis

Curriculum analysis is carried out by reviewing the curriculum documents used by the study program so that the curriculum needs develop teaching materials.

2.1.2 Formulate Learning Objectives

Learning objectives need to be formulated to limit the extent to which teaching materials will be developed.

2.1.3 Analysis of Student Needs

Analysis of students' needs for teaching materials in the form of e-modules needs to be done to determine whether development needs to be carried out based on the needs of students. Student needs are analyzed by distributing questionnaires to students who have contracted fundamental physics courses.

2.2 Design

The design stage aims to produce a prototype that will be made. The activity carried out at the design stage is to outline the e-module that will be developed.

2.3 Develop

The Develop stage is the development stage of the outline made at the design stage. After the product has been successfully created, it is then evaluated by a media and material expert validator. Validation is done by giving a questionnaire to the validator to assess the product developed according to the Likert scale, which consists of four categories, namely: Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD). In addition to providing an assessment, validators are also asked to provide suggestions to produce even better products. The assessment results from the validator are then presented using equation (1).

$$P(\%) = \frac{\sum x}{x_m} \times 100\% \quad (1)$$

With:

P = average value (in%)

$\sum x$ = total score

x_m = maximum score

The calculation results are then interpreted based on the table of product validity criteria presented in Table 1.

Table 1: Product Validity Criteria.

Percentage (%)	Category
81 – 100	Very high
61 – 80	High
41 – 60	Moderate
21 – 40	Low
0 – 20	Very low

(Riduwan, 2010)

3 RESULTS AND DISCUSSION

The product of this research is a STEM-based practicum e-module on the law of energy conservation. In developing this e-module, the steps taken by the researcher are as follows.

3.1 Define

In the define stage, the researcher performs several activities to determine and define the needs in the development process. These activities are curriculum analysis, formulating learning objectives, and analyzing students' needs for practicum e-modules. The analysis results are used as a reference in the development of STEM-based e-modules on the law of energy conservation.

3.1.1 Curriculum Analysis

In the curriculum analysis stage, the researcher reviewed the curriculum document in the form of the Syllabus for the Basic Physics I course used in the Department of Physics Education, FKIP, Siliwangi University. As a form of confirmation regarding the contents of the document, the researcher also conducted interviews with the lecturers in charge of the courses. The results of the selected Sub-CPMK curriculum analysis are Sub-CPMK-5; namely, students can comprehensively identify the concept and application of business and energy. Students are expected not only to understand concepts but also to be able to use the concepts learned to solve problems related to everyday life. Support is needed in the form of hands-on and contextual learning methods.

3.1.2 Formulate Learning Objectives

The learning objectives to be achieved through practicum activities using STEM-based e-modules on the law of energy conservation consist of goals from knowledge and skills aspects. From the aspect of knowledge, the learning objectives to be achieved are that students can apply the concept of work and

energy to solve problems related to energy conservation law on mini roller coasters. From the skill aspect, students can design practicums to solve problems related to the motion of objects on a roller coaster trajectory.

3.1.3 Analysis of Student Needs

Analysis of student needs for STEM-based practicum e-modules on the law of conservation of energy is carried out by distributing questionnaires to students who have contracted Basic Physics courses. The questionnaire consists of 3 parts: an analysis of the use of practicum modules in general, an analysis of the use of practicum modules on the law of conservation of energy, and an analysis of the usefulness and components of the module. The questionnaire consists of 17 questions, with details of 16 questions being fixed responses and one other question being an open question. The number of respondents to the questionnaire is 80 students. Based on the results of the needs analysis that has been carried out at the define stage, a practicum e-module is needed to help guide the practice of the law of conservation of energy with the following specifications: (1) The module is solving practical problems and only contains guiding questions so that students can solve and design own practicum, (2) Integrate technological advances (software) to help analyze the physics data of the practicum results (3) Have an attractive design and contain various representations (video, images, text, animation, etc.), (3) Easy to access using a PC or mobile and does not require ample storage space.

3.2 Design

At the design stage, the researcher outlines the e-module that will be developed. The outline of the STEM-based e-module on energy conservation law material consists of a Cover, Preface, Table of Contents, Description of the Practicum Module, Instructions for the use of the Module, Graduate Learning Outcomes, Course Learning Outcomes, Course Learning Sub-Achievements, Learning Objectives, Real World Problems, Tools and Materials, Exploration, Conclusions, and Bibliography. The module outline or writing plan containing a module's outlines is then developed at the development stage.

3.3 Develop

The development stage aims to produce a STEM-based e-module on the material of the law of conservation of energy that is valid and practical. However, the research achievements reported in this progress report have only reached the stage of validator evaluation. In contrast, trials for students to see the practicality of e-modules have yet to be carried out.

The development stage is done by developing the module outline that was prepared at the design stage. The outline was developed in Microsoft Word, which will later be converted to PDF format and flipped using Flip PDF Corporate software. The cover display of STEM-based e-modules on the law of conservation of energy can be seen in Figure 1.



Figure 1: The cover display of STEM-based e-modules.

The validator then evaluates the product that has been developed. The validator consists of media experts and material experts.

3.3.1 Product Validation Results by Media Expert Validators

Three media expert validators validated the developed e-module with an instrument in the form of a questionnaire. The questionnaire for product assessment in terms of media consists of 3 aspects, namely appearance, presentation, and quality of supporting media, which are translated into ten statements. The results of the media expert validation are presented in Table 2.

Table 2: Media Expert Validation Results.

No	Assessment Aspect	Total Score	Max Score	Percentage (%)
1.	Appearance	32	36	88.89
2.	Presentation	36	36	100
3.	Supporting media quality	46	48	95.83

Final Score Overall Media Expert Validation (%)	94.91
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In Table 2, the percentage of the final value of the overall media expert validation is 94.91%, with very high interpretation criteria.

3.3.2 Product Validation Results by Material Expert Validators

Three material expert validators has validated the developed e-module with an instrument in the form of a questionnaire. The questionnaire for product assessment in terms of the material consists of 3 aspects, namely the suitability of practicum objectives with learning outcomes, clarity of practicum series, and STEM components, which are translated into 11 statements. The results of the material expert validation are presented in Table 3.

Table 3: Material Expert Validation Results.

No	Assessment Aspect	Total Scores	Max Score	Percentage (%)
1.	Conformity of practicum objectives with learning outcomes	24	24	100
2.	Explanation of the practical circuit	56	60	93.33
3.	STEM Components	44	48	91.67
Final Score Overall Media Expert Validation (%)				95.00

In Table 3, the percentage of the final value of the overall material expert validation is 95.00% with very high interpretation criteria.

The research product in the form of a STEM-based practicum e-module has been successfully developed through this research. The developed products are categorized as valid for use in learning activities based on the assessment of media and material experts. Media experts provide assessments related to three aspects, namely appearance, presentation, and quality of supporting media, each of which meets valid criteria. From the appearance aspect, the design, colour composition, and appearance of the letters are appropriate and attractive. The presentation aspect gets the maximum percentage, meaning that the e-module is presented wholly and systematically to facilitate the achievement of learning objectives. The next aspect of the media expert's assessment is the quality of the supporting media. Supporting media here include pictures and videos so that they are multi-representative to support students in solving the

problems presented. In addition to assessments from media experts, there are also assessments from material experts covering three aspects: the suitability of practicum objectives and learning outcomes, clarity of practicum sequences, and STEM components, which also receive assessments with valid criteria.

The aspect of conformity of practicum objectives with learning outcomes gets the maximum rating from the validator. This means that the practicum objectives in the e-module are by the learning outcomes to be achieved and have been formulated at the defining stage. The next aspect is the practical aspect. The practicum series is presented by considering the complexity of the problems and their suitability for application at the higher education level. To support problem-solving, the e-module is equipped with a video that presents real-world problems and illustrated images adapted to the existing concepts in the material on the Law of Conservation of Energy. The e-module is made so that students can design their practicum to reach solutions to the problems to be solved so that the questions presented at the exploration stage are constructed correctly and correctly according to the concepts in the Law of Conservation of Energy material. The third aspect is the STEM component aspect. The e-modules developed for practicum activities have facilitated aspects of science, technology, engineering, and mathematics in the STEM approach presented in the practicum series.

This research has only reached the stage of testing the validity level of the developed media. Follow-up is needed from this research, namely to determine the level of practicality of the developed media. A practicality test is needed to see whether the media developed meets students' needs and the desired product specifications based on the results of the media development needs analysis (Wulandari et al., 2022). In addition to validity and practicality, this media also needs to be implemented in learning to see the effectiveness of the media being developed so that it can have a good influence on learning. These influences include increasing problem-solving abilities, creative thinking abilities and students' understanding of concepts (Zulaiha & Kusuma, 2020).

4 CONCLUSIONS

Based on the results of the research that has been carried out, it can be concluded that:

- 1) The STEM-based practicum e-module on the law of energy conservation has been successfully developed through the 4D development method. The steps taken to produce a research product in the form of an e-module are defined, designed, and develop (up to the evaluation stage of the validator).
- 2) The validity of the STEM-based practicum e-module on the conservation of energy law material based on media experts gets a percentage of 94.91% with valid criteria covering aspects of the display, presentation, and quality of supporting media. Based on the material expert, the validity of the e-module gets a percentage of 95.00% with the criteria of valid, covering aspects of the suitability of practicum objectives with learning outcomes, clarity of practicum series, and STEM components.

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Perceptions of Teachers and Students About Changes in the KTSP 2006 Curriculum to the 2013 Curriculum on Cultural Arts Subjects

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Keywords: Perceptions, Curriculum Changes, KTSP 2006 Curriculum, 2013 Curriculum, Arts and Culture Learning Subjects.

Abstract: Cultural arts learning can shape students' character to increase competence in expressing beauty and harmony, including appreciation and expression, both in personal and social life, so that they can enjoy life and realize a harmonious life. The change in the 2006 KTSP curriculum to the 2013 curriculum in the arts and culture learning subjects caused various perceptions from teachers and students. The research purpose is to describe the perceptions of teachers and students about the change from the KTSP curriculum to the 2013 curriculum. The method used in this study is a literature study to examine the perceptions of teachers and students based on goals, philosophical foundations, theoretical foundations, juridical foundations, and characteristics. This study's assessment of indicators produced a positive and negative perception of the change from the 2006 KSTP curriculum to the 2013 curriculum. Positive perceptions from teachers and students dominate these two perceptions because teachers and students can accept curriculum changes because they can shape student character. Still, negative perceptions come from the teacher's unpreparedness in obtaining curriculum changes from KTSP 2006 to 2013 and inadequate cultural arts learning media in each academic unit.

1 INTRODUCTION

Based on the conceptual foundation of the cultural arts curriculum, it is a learning that can develop sensitivity and competence in expressing and competence in defining beauty and harmony. Competence in revealing beauty and harmony includes appreciation and expression, both in personal and social life, so they can enjoy life and realize a harmonious life (Peraturan Pemerintah Republik Indonesia Nomor 19 Tahun 2015 Tentang Standar Nasional Pendidikan, 2005).

When traced following the conceptual foundation of the curriculum above, cultural arts is learning that functions in structuring the nation's character (Kementerian Pendidikan Nasional, 2010). Learning

artistic skills can increase knowledge of social livelihoods. In addition, students can increase cultural elements that impact respecting others, such as respecting themselves. Students are part of humans who have complex life needs. This cultural element is done for the sustainability of human life to increase cultural aspects and impact other humans living (Suriasumantri, 1994).

The implementation of learning is adjusted to each education unit's education unit. The comparison between learning materials with the availability of time and learning achievement is not comparable to material based on the curriculum because music and dance focus on practice. Coupled with the curriculum changes from each change of government leadership, it creates new problems, especially for teachers and students, after the evolution of the education unit-

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level curriculum (KTSP) to the 2013 Curriculum. It was officially carried out by the Minister of Education and Culture of the Republic of Indonesia in 2013 (Sopandi & Prabowo, 2014).

The KTSP curriculum is an operational curriculum developed and disseminated to regions and academic units. This curriculum is a curriculum that maximizes students in the classroom (Mulyasa 2014). It can be explained that the teacher functions in acting out the application of KTSP in improving learning materials in the school. Learning activities are based on the level of knowledge of the teacher. Therefore, teacher competence is needed to determine the quality of education to impact the quality of the next generation of education (Hamalik 2015). Thus, the role of teachers in applying KTSP in learning cultural arts is complementary and can increase the competence of thinking and feeling the power that can develop the soul and gain experience. Meanwhile, the role of cultural arts education is education that functions as a creation of student character following the needs of intellectual improvement interpersonally, visual, musical, linguistic, numerical, creativity, spiritual, moral, and emotional (Khumaeni & Susanto, 2021). Furthermore, the application of the curriculum is a process of the implication of principles, ideas, programs, or structuring of the curriculum into learning practice to change the expected group of people—the interpretation of curriculum results from the educators as the plan that gains influence from several factors.

- Curriculum characteristics include a context space for the expression of ideas and ideas in a curriculum and provisions for curriculum users
- The insertion strategy is a way that is carried out in the application, such as discussions, seminars, workshops, the availability of curriculum books, and other activities that can support the implementation of the curriculum
- 3) Characteristics of curriculum users include knowledge, skills, evaluation, and educator behaviour towards the curriculum and competencies in realizing it in the learning process

2 METHOD

The use method in this study is a literature study by identifying the perceptions of teachers and students about the changes in the 2006 KTSP curriculum with the 2013 Curriculum in the Arts and Culture subject. Several indicators are used to study the KTSP 2006 curriculum with the 2013 Curriculum, including basic concepts, objectives, philosophical foundations,

theoretical foundations, juridical foundations, and characteristics. The data collection method is related to changes in the KTSP 2006 and 2013 curricula, namely educating teachers' and students' perceptions of changes in the KTSP 2006 and 2013 curricula. The data were obtained from reviewing several journals about the perceptions of teachers and students about changes in the 2006 KTSP curriculum and the 2013 curriculum. The literature study in question is to analyze the perceptions of teachers and students about changes in the KTSP 2006 curriculum with the 2013 Curriculum in the Arts and Culture subject based on the reviewed journals. This literature study is needed to examine the identification of teachers' and students' perceptions of changes in the 2006 KTSP curriculum with the 2013 Curriculum in the Arts and Culture subject (Sugiyono, 2017).

3 RESULT AND DISCUSSION

The following are some explanations about the use of theories in this paper. Perception is supplied as an activity that can stimulate brain consciousness. Perception is acquiring knowledge in recognizing objects and places assisted by the five senses. Another opinion states that perception is an activity that can interpret from stimulants received by the person so that it can be meaningful and resonate with the individual in question. Slate's opinion states that perception is a process related to the messages and information of the five human senses. A person's perception influences three factors; (a) the subject, (b) the object or target, and (c) the situation, as depicted below.

The subject is a characteristic of a person related to perception. This characteristic is managed by perceiving distinctive features in personality, behavior, goals, interests, experiences, and expectations. If there is no one element of interrelationship, there will be a negative perception because one might not be interested in something.

- The perception of an individual influence the object or target. A thing or target presents the central element in the discussion. Its distinctive features include sound, movement, size, equality, and background.
- The situation is where perception is created for the aspects categorized into perception, namely time and place. If the subject or object is not changed, then the case will be different and influenced by a person.

The education curriculum has been known for more than a century. In Indonesia, the curriculum became familiar in the fifties, which the Americans widely used. A curriculum can be interpreted as a learning design for achieving educational goals (Nasution, 2017). Another opinion states that the curriculum is categorized into learning methods, evaluating students, changing learning personnel, guidance and exclusion, supervision, administration, and learning structure. Following the sound of Law no. 20 of 2003 concerning the National Education System, Article 1 (19), which states a set of planning and arrangements regarding learning objectives, contents, and materials and how to use them are used as a guide in the application of the learning process in achieving educational purposes (Mulyasa, 2014).

Next, the application of the curriculum includes three points: program development, learning implementation, and evaluation.

- Program development includes the development of annual, semester, module programs, weekly and daily programs, enrichment and remedial programs, and guidance and counseling programs
- Implementation of learning. Learning is communication between students and the state of the learning situation that impacts changing attitudes. Internal factors and external factors influence the transmission in question. Internal factors come from within the learners themselves, and external factors come from the state of the learning situation. Application in the learning process is the task of the teacher to change the behavior of learners in a better direction (Anggreni, 2020)
- Evaluation of learning is carried out through in-class assessments, basic ability tests, final assessments of educational and certification units, benchmarking, and program assessments

Based on Law No. 20 of 2003, article I is proposed by the educational unit in the academic service group organized by formal, informal, and other types of education channels, including

- Formal education is an educational path that is compiled and tiered, including primary education, secondary education, and higher education (Makris et al., 2022)
- Non-formal education is an educational path outside of formal education that is carried out in a structured and tiered manner
- Informal education is an educational path derived from the family and environment

Based on the Minister of National Education Regulation No.22 of 2006 concerning Content

Standards for Primary and Secondary Education Units. The educational task of each educational region is to develop competency standards and essential competencies into the operational curriculum at the Saruan education level (Suriani, 2021). Therefore, the curriculum of KTSP can be designed, developed, and applied by each academic unit and improve by taking into account the National Education System article 36, which is

- Curriculum development carried out is based on National Education Standards to realize national education goals
- Curriculum at all levels and types of education developed through a foundation based on educational units, the environment, and students
- The unit-level curriculum of primary and secondary education is developed by schools and school committees referring to graduate competency standards and standards

The basic concept of KTSP is contained in the National Education Standards (SNP article 1 paragraph 15). KTSP is prepared based on competency standards and essential competencies from development by the National Education Standards Agency (BSNP).

- KTSP is designed based on the environment of the educational unit, potential, and regional characteristics, as well as the socio-cultural of the local community and students
- Schools and school committees are developed curricula at the level of educational units and their syllabus following the basic framework of the curriculum and competency standards of graduates under the supervision of the district/city education office, the religious department in charge of education
- the curriculum at the level of educational units for study programs in higher education is developed and determined by each education level following the National Education Standards (Mulyasa, 2014)

KTSP aims to state that realizing independence by implementing academic units by granting authority (autonomy) to the educational valley and supporting schools to carry out decision-making in a participatory manner in curriculum development. In particular, KTSP aims to (a) develop the quality of education through independence and school initiatives in improving; (b) increase concern for school residents and the community in developing the curriculum, managing, and empowering human resources; (c) the improvement of proficiency between academic units about the quality of education achieved.

The basis for the development of KTSP is based on laws and government regulations, including Law no. 20 of 2003 concerning national education systems, PP no. 19 of 2005 concerning national education standards, Permendiknas no. 22 of 2006 concerning content standards, permendiknas no.23 of 2006 concerning graduate competency standards, permendiknas no. 24 of 2006 concerning the application of permendiknas no.22 and 23. The characteristics of KTSP can determine the optimization of performance, the learning process, the management of learning resources, the professionalism of educational personnel, and the assessment system (Pamungkas, 2021).

The Principle of Application of KTSP is based on seven basic foundations, as explained below.

- The curriculum's application is based on students' development and environment to master competencies that can benefit students. Students can use this to obtain quality educational services and find opportunities for self-actualization.
- The curriculum is carried out based on five pillars of learning such as (a) learning based on God Almighty; (b) understanding of learning; (c) efficient implementation of learning; (d) practical learning; and (e) learning that can find identity, practical, active, and creative learning processes.
- The curriculum application obtains services to improve students' competence, development, and circumstances by considering the development of the personality of Godly, intellectual, social, and moral students.
- The curriculum is carried out to create environmental conditions between learners and educators to respect each other.
- The curriculum is carried out with an approach to various ways and multimedia, adequate learning resources and technology, and empowering the situation as a learning resource
- The curriculum is carried out by utilizing natural, social, and cultural conditions as well as regional wealth to succeed in education by involving all analysis materials
- The curriculum includes all the content of local content learning skills, and self-development is carried out in relationships that are fostered continuously following the circumstances between classes and educational levels

Based on the Minister of Education and Culture Regulation No. 65 of 2013. It states that the standards of the primary and secondary education process are explained in the application of learning skills in the

2013 curriculum. This curriculum is interactive, inspiring, and implemented so that students can play an active role in expressing students ideas, creativity, independence, interests, talents, and physical and psychological development (Yuni 2016).

Compared to the 2013 curriculum, its learning activities are centered on the success of student competencies. The 2013 curriculum is based on character and competence and may change to provide education following the orientation towards results and material in the education process. The curriculum can give birth to the next generation of the nation who are productive, creative, and have character. Through a creative level, students can develop productively to provide solutions in the future that are increasingly complex.

The purpose of the 2013 curriculum can be to produce human beings who are productive, creative, and innovative, continuously following educational goals that create a noble character and civilization. Several factors can determine the success of the 2014 curriculum. The elements in question are the principal's leadership, teacher creativity, learning activities, learning facilities and resources, conducive learning conditions, and the participation of school residents.

The basic concepts of the 2013 curriculum are arranged according to three basic concepts.

- **Philosophical Foundations**

The quality of students in curriculum achievement, resources, curriculum content, learning, student status, evaluation of learning outcomes, and students' relationship with social and natural conditions determines the philosophical foundation of curriculum development. All students develop the curriculum 2013 to create quality students to achieve educational goals.

- **Theoretical Foundations**

The 2013 curriculum comes from the theory of educational standards and curriculum theory based on criteria determined by national standards. It is defined as the quality of participants in the use of content standards, process standards, graduate competency standards, educational standards, educational personnel, standards for facilities and infrastructure management standards, financing standards, educational evaluation standards, curricula based on skills designed in obtaining learning experiences for learners for the development of competence in behavior, knowledge of skills, and attitude.

- **Juridical Foundations**

- The juridical foundation of the 2013 curriculum is
- Constitution of the Republic of Indonesia in 1945
 - Law No.20 of 2003 on National Education Standards
 - Law No. 17 of 2005 on National Long-Term Utilization Planning and the determination that is planned in medium-term development planning
 - PP Number 19 of 2005 concerning Educational National Standards was refined by PP No. 32 of 2013 concerning Amendments to PP No. 19 of 2005 concerning National Standards for Education (Ahmad, 2015).

The characteristics of the development of the 2013 curriculum are described as follows.

- Development of elements of balance between behavioral and social features, level of knowledge, creativity, cooperation with intellectual and psychomotor skills
- Schools are part of the community that can get learning experiences planned by students and applied based on the absorption of material from the school and then implemented in the community as a learning resource.
- Development of behavior, knowledge, proficiency, and application in all circumstances in schools and society
- Negating the use of time for behavioral development, knowledge, and proficiency
- Proficiency can create the core literacy skills described in the learner's eyes.
- The core literacy skills are arranged based on the organization of essential abilities. All essential competencies and learning are designed following the achievement of the skills mentioned in the core skills.
- Basic skills are focused on the concept of accumulation in order to empower the content of learning subjects in each tiered education.

This curriculum impacts the enrichment of learning materials at every level of education and the strengthening of knowledge. Based on the explanation above, it shows that the characteristics of the 2013 curriculum are developed in each learning subject that has the achievement of spiritual, social, knowledge, and other behaviors so that students in their daily lives can imply it. Through the knowledge and experience gained, learners can apply to every school and societal condition.

Differentiation of the 2013 curriculum with KTSP. The basic foundation distinguishing the 2013

curriculum from the KTSP (2006 Education Unit Level Curriculum) is described below.

- KTSP 2006 graduate competency standards come from content standards, while the 2013 curriculum competency standards for graduates come from the needs of the community
- KTSP 2006 content standards come from graduate competency standards for learning subjects, as long as the 2013 curriculum content standards come from graduate competency standards
- KTSP 2006 is separated by each learning subject based on the creation of behavior, proficiency, and knowledge, while in 2013, each learning subject took part in the creation of behavior, proficiency, and knowledge knowledge
- KTSP 2006 proficiency comes from all subjects, while the 2013 curriculum of each learning subject comes from the achievement of competencies
- KTSP 2006, each subject is separated, while the 2013 curriculum of each subject is based on core competencies at each level of education
- KTSP 2006 was developed based on basic competence, but the 2013 curriculum was developed through textbooks and educators' manuals
- 7) KTSP 2006 is based on thematic classes I-III of each subject, but the thematic 2013 curriculum is integrated into classes I-IV in each competency

The 2013 curriculum was developed based on students' skills and character creation to develop the quality of education. The 2013 curriculum is designed to develop the knowledge, understanding, abilities, values, behaviors, and interests of learners that can be developed to achieve success and responsibility. The application of the 2013 curriculum is the implementation of achievements in the learning process in each learning subject carried out by the education unit.

Society understood Art and culture in its definition carried out separately. Cultural arts are a new thing in social livelihood; cultural arts can be seen in education as cultural arts learning subjects (Karatas and Oral 2015). Cultural arts learning subjects are learning subjects that describe aesthetic, artistic, and creative works of Art derived from morality, judgment, attitudes, and the risk of cultural arts that are realized through art activities. This learning course was developed to improve the competence of students in order to gain understanding in knowledge. Technological and social to contribute

to the development of historical civilization and culture, both local and national. The scope of cultural arts learning subjects has four aspects, namely fine arts, music, dance, and theater arts (Purnamasari, 2020)

- a. Fine Art: Art that has a good form can be seen with the naked eye
- b. Art Music: Art with a different sound and acceptance by each charm. Target people's history, place, culture, and tastes. The definition of music can be described below
 - Music is a sound that the listener's senses can hear
 - Works that have primary and supporting purposes
 - Buy that can produce bred intentionally by individuals or groups and enjoyed as music (Mawardi, Amirah; Ondeng, Syafruddin; Hanafy, Sain Muh; Yaumi, 2018)
 - Dance art is carried out in the form of dance movements having a rhythm as a psychological expression of a person. Here are several points of view on the definition of dance
 - Prince Soeryo Diningrat: dance is a movement performed by all limbs, included with the sound of the instrument and the arrangement of its rhythm, songs, drums, mimics, and movements adapted to the meaning of the dance
 - Corrie Hartong: Dance is a rhythmic movement of the limbs as a means of delivering messages in the room
 - Sr Soedarsono: Dance is a psychological expression of a person in realizing rhythmic movements that can be enjoyed
 - Theatrical Arts

Theater comes from the Greek word "theatre," which is the show's location. Its development has an outward sign and can be defined as a performance in front of many people. In other words, the theater is a show that includes ketoprak, lundruk, srandul, and other traditional music. The notion of ni theater can also be defined as drama, performing human life in a performance in front of a crowd. Darma comes from the word Yuunani dran, which means to defend or act. Therefore, those who perform the drama can act in the crowd.

Fine Arts

- Fine arts can be grouped into unclean Art, sculpture, billboard, decoration, illustration, and craft art.
- Painting is an art that has two dimensions. In other words, the elements possessed are colors,

fields, and textures. Paintings can be painted with the help of canvases with length and width sizes. In the field of plus, it makes its psychological expression through the results of paintings made by painters.

- Sculpture is a painting art with three dimensions: lines, colors, fields, textures, and volumes. The measure is that the length and width include volume, like chiseled wood carved to produce a beautiful sculpture. Thus the statue comes from a chisel of a large stone created in the spirit of the sculptor's wishes.
- Advertising art is grouped from painting but can also be grouped into bound Art with a function, while painting is free Art. The Art of reclamation has support close to its function: to provide public interest in the declared. The Art of reclaim is the result of rumba Art that can be used to provide knowledge to only people through their merchandise. Therefore, billboards accept punji as a form of interest in an item.
- The Art of decoration comes from a foreign language decoration which means decoration. The decoration is an acceptable art activity for decorating in three-dimensional and two-dimensional spaces. Decorations are made by distillation aesthetically, the arrangement of the room, and adding an ornament.
- The Art of illustration expresses the naked eye through the idea of a story, object, or situation. An image that can explain accordingly can facilitate understanding. It can be said that illustration is the disclosure of images in the form of stories.
- The Art of target craft is an art skill that focuses on the skill of the hand in doing a job. This art form is three- and two-dimensional.
- Changes to the KTSP 2009 and 2013 curriculum created different perceptions of teachers and students in response to these changes. The following are the results of reviews of several journals related to the perceptions of teachers and students about the changes in the 2006 KTSP and the 2013 curriculum (Lorenza, 2018).

The results of Rizkita and Sumayadi's research (2022) stated that the perception of cultural arts teachers at SMAN I Garut had implemented the 2013 curriculum, which has been revised to 2016. This curriculum is done to assist teachers in providing an understanding of the duties and functions of teachers in implementing the new curriculum. This curriculum has many parties involved, such as school

superintendents to all teachers by organizing in-house training (IHT) to socialize the revision of the content of the 2013 curriculum revision to 2016. The reality in the field is different from the socialization of the curriculum revision from 2013 to 2016 to be a scourge for policymakers because there is a discrepancy between curriculum principles and learning material sources (Riskita & Sukmayadi, 2022).

In 2013, especially in cultural arts, many did not conform to the syllabus from the government. Furthermore, the cultural arts learning course focuses on four fields: fine arts, dance, music arts, and theater arts. If the principle of curriculum continuity is not by the target of the learning subject, it lies in the unavailability of cultural arts teacher resources. Continuously, what is meant is that the development of learning activities is carried out non-pause. Thus, students gain learning experiences through the availability of curriculum in the classroom. The perception of cultural arts teachers in this curriculum change affects teacher creativity in learning. The principles of practicality and efficiency can be the focus of the learning process so that the number of teachers needed can be determined (Janko & Pešková, 2017).

Curriculum 2013 has adapted to the periodic development of the times. The vision and mission of the 2013 curriculum can change learning activities and objectives in a good direction, focus on affective, psychomotor, and cognitive character building, motivate students, change student behavior, and explore and innovate the 2013 curriculum (Trundle et al., 2016).

This opinion is supported by other teachers' perceptions of music arts education teachers implementing the 2013 curriculum. This opinion is the result of research by Dewi (2014), which states application of the 2013 curriculum is easier to understand than the KTSP because of the 2013 curriculum (Safiuddin, Salmatian; Atikah, 2020). Students and teachers carry out the curriculum application with high subjective perception. However, ideally, the teacher has four essential competencies that belong to the teacher and can provide an objective perception oriented towards increasing students' competence in the classroom, such as student creativity in learning SBDP cultural arts. Another recommendation from Firdani's research (2017) is the provision of the 2013 curriculum book as a primary source of learning and a reference in the learning process (Firdani, 2017).

Teachers' perceptions of implementing the 2013 curriculum were also carried out by Supandi and Prabowo (2014). The results of his research stated

that teachers consider understanding the application of KTSP 2006 easier than in the 2013 curriculum because teachers do not have adequate competence in the assessment format and assessment procedures in the 2013 curriculum. The cause of the lack of running of the SBDP learning process is inadequate facilities and the teacher's habit of applying thematic learning as has been done by the previous curriculum, which impacts the teacher's inability to understand the SBDP material.

Cronenberg's research (2020) provides teachers' perception of the Art of music in the course classroom. The perception of cultural arts teachers is also seen in research (Sungurtekin, 2021), showing that the practice of cultural arts teachers has not been able to provide stimulants and increase children's musical creativity (Cronenberg, 2021). In this case, the practice given by the teacher has not provided a product learning interface to the study through playing his instrument or creating rhythms by providing material about melodies and rhythms. Thus, teachers are free to use any curriculum, called the creative curriculum used by schools in the UK. This curriculum can give teachers freedom in planning to focus on what the child is interested in (Craft et al., 2014). Therefore, teachers need support in the form of professional training to explore imagination and creative potential in music classes (Sungurtekin, 2021).

This curriculum is influenced by the teacher's assumption that the Art of music is influenced by the perspective of practicing the Art of music that can eliminate negative feelings about administrative decisions influenced by curriculum music. There is a perception of art teachers in wayang kulit learning, namely the positive and negative perceptions of teachers towards wayang kulit in Solo Raya for cultivating cultural character in cultural arts learning. The positive perception of cultural arts teachers in Solo Raya is backgrounded by wayang kulit related to cultural arts learning to support aspects of the curriculum, psychological, moral, socio-cultural, and national values. Meanwhile, the negative perception lies in the child's interest in cultural arts and the availability of both cultural arts learning that is inadequate.

Another reason is that the art and cultural teachers of wayang kulit pure are irrelevant to instilling the character of values. It is because of the assumption that not all teachers come from Java, and not all teachers from Java can teach well and be replaced with another medium (Subyantoro & Fadhillah, 2020).

In addition to teachers' perceptions, there are students' perceptions of cultural arts. This curriculum comes from Widyastuti's (2019) research results

show that foreign dance courses influence 38.67%. It is argued that Manzanera dance is a type of dance that comes from outside the student. The foreign dance consists of two types: classical and people's. Classical dance is a type of dance that comes from the nobility, the educated, and capitalists. Foreign dance is a new type of dance given to students to learn. People's dance is a type of dance that comes from the workers and workers. Therefore, foreign dance can collide rapidly in Indonesia (Widyastuti, 2019).

4 CONCLUSIONS




The results showed that the change from the KTSP 2006 curriculum to the 2013 curriculum impacted the readiness of teachers and students to accept curriculum changes determined by policymakers. Several journal reviews show that positive perceptions from teachers and students dominate it. However, there is a negative perception derived from unpreparedness and inadequate learning media for teachers in accepting the change of the KTSP 2006 curriculum to the 2013 Curriculum.

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Teaching Speaking to Enhance Interactional Competence in Digital Learning Environment: Challenges and Opportunities

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Abstract: The widespread technology utilization in language learning has created a digital learning environment in language classrooms in the past decade. The virtual exchanges alter such significant dynamics of online interaction at higher education in Indonesia. The purpose of this study was to investigate teachers' experiences on how they created a digital learning environment in the teaching of speaking to enhance interactional competence. It is a preliminary study seeking teachers who teach speaking. Open-ended questionnaires were spread via Google form to 19 English teachers of higher education. They were from universities in seventh different provinces in Indonesia, such as; Central-Java, East-Java, East-Kalimantan, NTT, South-Sulawesi, and West-Papua. The questionnaires result showed that each teacher has different challenges and opportunities in creating a digital learning environment for teaching speaking. One of the challenges experienced by teachers in these seventh provinces in Indonesia was an unstable internet connection that influenced the quality of online synchronous interaction. However, some teachers viewed opportunities for their technological competence improvements. In addition, online interaction allows students with shy personalities to speak more fluently and confidently than that in face-to-face interaction where they might experience anxiety. Motivation is also one of the most influential internal factors to create successful learning in digital learning. In conclusion, education in the digital era can be successful by creating a digital learning environment shaped by innovative teachers with good technological competence. Supportive internet facilities provided by the institution and parents' roles, certainly, are included as crucial in supporting the digital learning environment.


1 INTRODUCTION


Interaction is an essential part of face-to-face English language classrooms. Advancements in communication technology in the past decade have transformed face-to-face into a digital culture as well as supporting tools in the educational process. Moreover, the ongoing global COVID-19 pandemic since 2020 has forced educational institutions in most countries around the world to alter the teaching and interaction modes through virtual exchanges (Moorhouse et al., 2021). Teachers' technological competence is required to conduct online learning by


utilizing virtual applications, platforms, or software for real-time virtual exchange or conferences.

Despite the force of using technologies during the pandemic, most, language teachers show many efforts to become innovative-21st-century teachers by utilizing technology and bringing a digital learning environment to their classes. The use of digital technology in education has been considered one of the themes of innovative pedagogies (Herodotou et al., 2019; Kukulkska-hulme et al., 2021; Long & Shi, 2019).

However, virtual teaching and learning have brought attached challenges for tertiary English teachers in Indonesia, particularly in the way how the target language is activated through new applications for

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virtual conferences. Teaching in the digital learning environment is complicated, and it requires teachers to upgrade their technological competence aiming at creating a good digital learning environment to support students' learning. The complexity of digital teaching and learning includes the requirement of teachers' ability to communicate across a screen, engage using a two-dimensional image, facilitate active online interactions, attend to students' emotional needs across distance, maintain the sense of students' presence as not being physically gathered, and overcome troubleshoot on technical problems. They are all become challenges faced by teachers in the digital era.

In a positive vibe and for a sustainable educational process, teachers should overwhelm the challenges of digital teaching-learning with its complexity. The challenges in teaching online themselves should become a problem to be solved which teachers may transform into opportunities to create innovations in language teaching. The constraint of integrating technology for education during the pandemic is an asset toward 'momentous innovation.

(Peters, 2000) of digital pedagogy. It has to be admitted that Covid-19 pandemic bring a great shift on pedagogy and advantages for innovations particularly educational context. A purposive training program was conducted in a city in the middle part of Indonesia aiming at enhancing teachers' technological competencies (Misesani, 2021). Teachers who previously had less knowledge of skills on technology for teaching-learning were endeavouring to upgrade their technological competencies through the training program.

Several types of research on English Language Teaching recently connected the use and integration of technology to students' interactions (Ahmed et al., 2020; Moorhouse et al., 2021; O'Rourke & Stickler, 2017) and interactive practice in terms of online collaborative dialogue (Dooly & Vinagre, 2021; Strawbridge, 2021). They have studied the importance of classroom interaction in a synchronous online learning context. It is important to remark that this paper refers to virtual English classes conducted in the digital learning environment. The focus of this paper is on the teachers' technological competence, particularly how they expand their digital ability and make the best use of technology to create learning opportunities despite the problem of online learning they face. In simple words, what challenges are faced by English language teachers in Indonesia related to virtual exchange for language learning? How the teachers transform the challenges into opportunities

to create a digital learning environment effectively in the post-pandemic?

2 TEACHING INTERACTIONAL COMPETENCE

The concepts of interactional competence have been proposed and conceptualized by some scholars like Kramsch (1986), Hall (1999), Young (1999, 2008), Walsh (2012). The term interactional competence is defined as teachers' and learners' mutual employment of linguistic, interactional, and identity resources in classroom interaction for mediating and assisting in learning of English language

. Walsh (2012) conceptualized interactional competence in the classroom context and termed it as classroom interactional competence attributed to Kramsch's (1986) and Young's (2011; 1999). In the complex process of linguistics interaction, Walsh (2012) suggested that joint competence that is interactional competence rather than solo performance in the teaching of speaking. Teachers who teach speaking skills should know the concept of interactional competence and promote a dialogic interaction approach to students.

Walsh (2012) assured that interactional competence is needed to endure communication encounters. L2 speakers should not only have the ability to produce accurate and fluent utterances but also the ability to understand the context, to listen and understand others' utterances, to clarify meanings, to repair and so on which refers to interactional resources. Having a concurrent view with Kramsch's (1986) that a push for interactional competence could give students an ability to participate in real-life L2 interaction, Walsh (2012) perceived that interactional competence requires extreme mental and interactional ability.

Giving students rich opportunities to interact in classroom collaborative dialogue is crucial to shaping and strengthening their mentality and confidence to speak in English. However, this doesn't mean that teachers just provide some topics and then let students choose freely after which they have a conversation or dialogue without purpose. There should be, still, teachers' interventions to make the teaching of interactional competence possible in a classroom context. Waring (2018) argued that teaching interactional competence should involve the teaching of pronunciation, vocabulary, and grammar as linguistic resources. Teaching linguistic resources is extremely supportive of the existence of interactional

resources such as turn-taking, sequencing, overall structuring, and repair. The complexity of teaching speaking skills reveals in the way students are required to be aware of their knowledge and skill. Therefore, teaching speaking explicitly is ultimate in language classrooms (Burns, 2019). Along with giving models of natural conversations, the teaching of various resources for speaking and communication strategies that is context-specific enables the implementation of real-world ELT.

2.1 Teachers' Roles and Competences in Digital Learning Environment

The educational research field was introduced to a theoretical framework named Technological, Pedagogical, and Content Knowledge (TPaCK) by Mishra and Koehler (2006) to give an insight into the teacher's knowledge and, thus, competence needed for effective technology-integrated teaching. The digital transformation in the educational context has also impacted the teacher's role in classrooms and affected their competencies. The teacher should consider taking into account more on their content, pedagogical, and technological competencies (Kebritchi et al., 2017) particularly for online teaching-learning. Moorhouse et.al (2021) found that in the digital learning environment, teachers need technological, managerial, and interactional competences in the teaching of interactional competence. Huang (2019) comparing the role of teacher in face-to-face and online classroom. Among teachers' cognitive, affective, and managerial roles being compared, it was found that in online learning, teacher's managerial role was at the highest mean.

The teaching qualification of a good teacher and lecturer in Indonesia has been formulated by the Minister of Education Number 16 in the year 2007, comprising Pedagogical, Personality, Professional, and Social Competence. A teacher's personality is attached to their professional identity which inevitably influences his or her identity. It represents the teacher's attitude, self-image, perceived roles, and commitment concerning the use of technology (Shafiee et al., 2022) for the teaching and learning process. The enactment of personal and professional competence, particularly, teachers' perspectives regarding their roles and the challenges faced in technology integration for learning constituted a major theme in this study.

Addressing the pedagogical endeavors to link knowledge and skill for a successful and effective technology-enhance language teaching is the most role of a teacher. Professional roles of teachers in

higher education include teacher-educator, researcher, and community service practitioner. The teacher-educator incorporates the role of instructional designers by creating a socio-cultural context of language classes in which teachers facilitate interpersonal communication in online learning environments which encourage collaboration, dialogue, negotiation, and critical thinking. This instructional design is tied to the notion of a learner-centered approach in the Indonesian curriculum that has been most associated with collaborative learning among peers and teachers.

A digital learning environment can be created mostly by the role of the teacher as an instructional designer which requires pedagogical and technological competence. The endeavor to deal with technological challenges such as malfunctions during online platform use also contributes to the creation of a digital learning environment. Many researchers found that teacher's perspectives and attitudes toward digital learning challenges influence the decision of selecting appropriate instructional approaches, digital tools, strategies, and evaluation in teaching (Hakeem Barzani et al., 2021; Hill et al., 2009; Nazil Iqdam, 2016; Peters, 2000; Romero Archila, 2014; Shafiee et al., 2022; Su & Zou, 2020; Wang & Huang, 2018). In this way, in the digital learning era, teacher's professional development deals with gaining knowledge, confidence, and experiences regarding their values and perceived roles of management and decision making in technology integration (Shafiee et al., 2022). Particularly, in understanding that collaborative dialogue is for sure possible to speak online, teachers should decide to choose the available interactional tools for video conference. This decision is crucial to create digital learning environment where teacher has mastered the chosen online interactional tool.

The teacher should also concern with students' knowledge and skills on online interactional tools. It is unavoidable that sometimes, teaching online is not only teaching the material content or skill but also includes teaching students about how to operate features in online interactional tools. It means that the role of the teacher is still needed even though the use of technology may enhance students' learning. In the digital learning environment, the mediation of technology and the teacher's role are complementary to each other.

2.2 Virtual Exchange as Collaborative Dialogue in Language Teaching and Learning

The term virtual exchange has been widely used to refer to communication through the use of technology which also termed as tele-collaboration, e-tandem or synchronous communication. Dooly and Vinagre (2021) viewed that virtual exchange is a pedagogical approach that can be considered as an alternative for communicative language teaching approach. The concept of online interaction here is synchronous or real-time class interaction where students practice their English speaking. Many researchers grew their attention to the effectiveness of technology-enhanced collaborative dialogue to improve students' language skills (Chang & Windeatt, 2016; Mahmud, 2018; Su & Zou, 2020). Virtual exchange in language classrooms which is carried out synchronously has its growing trend of the use of communication software such as Zoom, Skype, Microsoft Teams, or Google Meet. Some applications also may become online media for virtual exchange such as language exchange apps like Hello Talk or Tandem, or numerous websites with conversation exchange options like LiveMocha which, however, is outside of the classroom context and beyond the teacher's control.

Learners' exchanges in L2 speaking practices are displayed through interactional resources which is done regularly over time, eventually, show developments of their interactional competence in an online task-based learning environment. Balaman and Sert (2017); Su and Zu (2020); and Zeng (2017) investigated the role of collaborative dialogue through synchronous interaction for language learning. They found that technology-mediated task design has an impact on the development of learners' L2 interactional competence. It showed the positive role of interaction and the effectiveness of teachers' design with the basic goal was providing an online task environment to enable participants' engagement in multiparty interaction.

Young adult students have possessed self-regulated learning autonomy including the learning of new technologies useful in digital learning environments. Therefore, teaching them how to operate some programs or online applications does not need great effort. The main point of speaking class through a virtual exchange is to give students rich opportunities to be active in the dialogue using English. Ha Le et.al (2018) found that one obstacle that teachers faced is students' lack of collaborative skills. Therefore, as mentioned previously in this

paper, teachers should facilitate students' collaboration in online learning particularly in the context of higher education. It means that the student's active participation in virtual exchange also becomes a supporting factor in creating a digital learning environment. Opportunities to have dialogue would make such a lively virtual exchange that it is beneficial for students' use and development of linguistic and interactional resources.

Being an interactive speaker means also becoming a good listener who understands what other's speaker intention and the context to give feedback or respond appropriately (Ha Le & Wubbels, 2018). The successful collaborative interaction is signified by the conception of reciprocity, mutuality, alignment, and shared understanding (Arvaja & Hämäläinen, 2021). Therefore, a successful virtual exchange for language teaching learning, particularly in teaching speaking, is characterized by productive interaction through collaboration between peers and also with the teacher. With the intention of achieving successful collaborative dialogue in virtual exchange, teachers should explicitly mention the collaborative goals. In addition, teacher's immediate feedback, correction, and motivation are needed during the virtual exchange. Such a way would make students active in the turn talk and shape their interactional competence whether it is face-to-face or virtual exchange. The mediation of technology is really important to keep students gathered in virtual classes during and after the pandemic.

3 METHODS

This was a qualitative research employing thematic analysis as a method for describing qualitative data which also involves interpretation in the processes of selecting codes and constructing themes (Braun & Clarke, 2008; Kiger & Varpio, 2020). The thematic analysis enables the development of knowledge that is constructed through interactions between the researcher and the research participants which shows that meanings are socially constructed. Six phases of thematic analysis including 1) Transcribing data, 2) Generating initial codes, 3) Collating codes into potential themes, 4) Reviewing themes, 5) Defining and naming themes, 6) Producing a report. (Braun & Clarke, 2008).

The instruments of this study were questionnaires and interview questions. The questionnaires were formulated in two parts including closed-ended and open-ended questionnaires. The closed-ended

questionnaire consisted of 3 items that were adapted from Jin (2021) applying yes-no questions which were done to obtain whether technology integration was used before, during, or/and after covid-19 pandemic. Open-ended questionnaires were administered through Google form, followed by semi-structured interview questions via Zoom conference. These two phases were conducted in rapid time. The questionnaires and interview topics were related to issues or challenges that the teachers encountered during online learning which came from internal and external factors. The internal factors were from the teachers themselves including technological, pedagogical, social, and managerial competencies. (Kebritchi et al., 2017). The external factors were technological issues in creating digital learning environment (Fernando et al., 2020).

The participants of this research were 19 English teachers of higher education. They were from universities in seventh different provinces in Indonesia, such as; Central-Java, East-Java, East-Kalimantan, NTT, South-Sulawesi, and West-Papua. The teachers-participants were coded from T1 to T19 with these details: T1, T2, and so forth until T19. Teachers who had not integrated technology in teaching and learning were T2, T3, T12, T13, T14, T15, T16, T18, and T19. There were 84% of all participants were considered senior teachers who have more than 5 years of experience in teaching English. Most of them have been teaching students at second-year and third-year levels who regarded as having intermediate linguistic and interactional resources.

Table 1: Teachers-Participants Background ($\sum n = 19$ in each category).

Category	Sub-category	n	$\sum n$
Institution Region	Central-Java,	2	19
	East-Java,	9	
	East-Kalimantan,	1	
	NTT,	5	
	South-Sulawesi, West-Papua	1	
Course(s) Taught in 2019-2022 Periods	First-year	2	19
	Second-year	10	
	Third-year	7	
	Fourth-year		
	Others		
Experience in Teaching English	< 5 years	3	19
	5-10 years	8	
	> 10 years	8	

The qualitative data obtained from open-ended questionnaires and interviews were used to generate initial codes and collate them with some themes. The

participants who have chances to be interviewed were eight teachers to get confirmation and further explanation from the questionnaire results. However, other data resulting from the open-ended questionnaire were clear and complete enough to be analyzed in the coding phase, thus, further interviews were not necessarily done.

4 RESULTS AND DISCUSSIONS

The results of this study comprised of three sub-sections which is in the first presents the challenges, the second presents the opportunities, and the third discusses how teachers transform challenges into opportunities and summarizes those into several themes. It is important, here, to provide the closed-ended questionnaire results as a prelude to wider results of open-ended questionnaire results. They are presented in Table 2 as follows:

Table 2: Technology Integration for Teaching (before, during, and after COVID-19 pandemic).

Technology for Teaching	Yes (n)	No (n)
I integrated technology for teaching <i>before</i> covid-19 pandemic	10	9
I integrated technology for teaching <i>during</i> covid-19 pandemic	19	0
I integrate technology for teaching <i>after</i> covid-19 pandemic	17	2

The first table row presents the result of technology integration in language teaching before the outbreak of covid-19 pandemic. It means the time bound was before December in the year of 2019. It can be seen that 10 teachers-participants had already integrated technology which refers to both synchronous and asynchronous internet modes for learning. Particularly, in synchronous mode 5 of 10 teachers (T1-T5) had used zoom for online meetings outside of the official scheduled. The online meetings via zoom were done for discussing students' home assignments. Other than those were used to replace missed-class or make missed-class up. There 4 others of 10 teachers (T6-T7) who integrated technology through asynchronous mode by using Google classroom. Meanwhile, WhatsApp was generally used by all 19 teachers-participants for class communication on daily basis.

One teacher (T10) was considered as remarkable on using technology for language learning, since this

teacher has been consistently using Skype for conversation with foreigners who know and speak English. They could be students, teachers, tutors, or professionals of English language. Here, the dialogic approach in teaching speaking has been used. T10's students were given opportunities to have conversations with other speakers of English from many countries via Skype video conference. The topics were provided by this teacher that students might choose one to be brought into conversation with native or foreign English speakers. This was a program held every two weeks in speaking class started at third semester level.

The second row of table 2 shows that during the outbreak of covid-19 pandemic, all the 19th teachers-participants utilize technology and integrated it to teaching language. In Indonesia, this pandemic was in its outbreak from March 2020 until September 2021 when so many people suffered and died from covid-19 virus. The government of Indonesia, through The Minister of Health and the Minister of Education, issued a lockdown situation where students should learn from home and employees work from home too. The 9 teachers realized there was no other way to have class meeting online to reach out students from distance. This distance learning had made them learning new apps and/or software for teaching-learning process during the social distancing.

The third row shows the result of technology integration after the pandemic or post-pandemic period. There were 17 teachers who consistently integrating technology for classes in combination to face-to-face learning which is usually called as hybrid learning. However, 2 others went back on implementing face-to-face class meetings and no longer used online asynchronous and synchronous platforms. They were 1 teacher from West Papua and another from NTT. The reason for not conducting online class was due to the bad internet connection and low students' engagement during online learning. Particularly, the internet facilities in a university in Papua did not support digital learning environment. The teacher had her own great efforts and internet costs to keep in touch with students during remote learning with low students' presence. Thus, in the post-pandemic period, face-to-face meeting was the best choice for all students.

4.1 Challenges in Teaching Interactional Competence Through Virtual Exchange: Internal Factors

A higher education teacher, also called a lecturer, has a wide range of responsibilities such as teaching,

researching, assessing students, writing-publishing research, and serving community service. In digital learning, preparing a technology-integrated pedagogical approach give teachers a significant additional workload. One of the most online learning issues during the pandemic outbreak was teachers' lack of digital skills or technological competence, students' participation, and bad internet connection. One way or another, this might influence the effectiveness of teaching and learning which resulted in students' learning loss.

Teachers' perspectives on those challenges are worth researching by analyzing their sentences, wordings, or utterances. Here are the challenges faced by some teachers-participants in this study:

Table 3: Challenges of Technology Integration for Teaching related to Teacher's Technological Competence (during COVID-19 pandemic).

Participant	Challenge
T3,12,14,16, 18,19	I never knew or used online platforms before, but because of the pandemic and I used WA to share information
T2, T13	I only used WhatsApp to communicate with my students, I really had to learn a lot about technology for teaching
T15	I tried to have an assistant beside me during online meeting, but then I got used to it. WA was the only social media I know
T14	It is time-consuming work to think the concept of teaching online, maintain user-friendly classes and upload materials to a digital platform.

The requirement for all education stakeholders to utilize technology during the pandemic was keep the learning process going. For these 9 teachers, this was a force because they had not used it prior the pandemic. Online teaching and learning became the most popular option during the pandemic that they had to learn how to apply applications and software others than WhatsApp. The sudden adaptation of online learning during the pandemic seemed to be a big challenge for teachers who had not put technology integration into their teaching practice. This was because many technologies are available on the internet. Each has different features, methods, and protocols that these teachers should have learned as beginners, then, they had to master those immediately in such rapid time.

The prior perception about teacher's technological competence was that it relates only with how to create power point for class presentation, and this was a good opportunity for them to learn new

internet-based technology for remote learning. From further interview results, two of them had to take certain training for using platforms or application while the rest managed to learn by them-selves. They learned from their colleagues and YouTube, while some were trained by trainers from their institution purposefully. By experiencing this, teachers' competences were developed with multimodal technologies. In the view that dialogic interaction is crucial to foster students' interactional competence, synchronous virtual exchange was important. These teachers did not give up with their lack of technological competence. As a matter of fact, they could just assign students to make recording of their English speaking and submit them on due date. Real-time interaction through virtual exchange is so important, that the teacher should give direct feedback about their linguistics and interactional competence although sometimes they could not see each other through cameras.

Teachers also needed money to buy the quota because they used the quota to communicate and share materials from home. The available connection provided in their campuses was at low quality, since all teachers used it for synchronous online classes. Thus, teachers still needed asynchronous way to keep students in touch and shared materials. Even though they were given internet quota from the government, it could not cover all of the online teaching activities.

Following, the challenge of online learning was related to teachers' concern with their students' during virtual exchange. Students' attitude and behaviour toward and during online learning were also included as challenges faced by teachers. One of the teacher's responsibilities in virtual exchange to create such digital learning environment that made students become active, interactive, and enjoy in speaking activities. However, in the early practice of online learning due to the pandemic, the teachers found challenges from students where they made less eye contact, gesture, and spontaneity. Although communication was still possible in virtual exchange, but the teachers felt that body language, gesture, and eye contact were more limited than those in direct or face-to-face meeting.

Teachers from the Centre and the East part of Indonesia, those were T14-T17, T18, and T19 observed that some students did not enjoy practicing speaking online. It was seen that in the virtual exchange, they could not express themselves using English with ease. The new method of virtual exchange might seem awkward to them that they felt uncomfortable. From the teachers' perspectives, it happened because the contagious cases of Covid-19

in these regions were not as many as those in the West part of Indonesia. In addition, most students had problems with the provision of cellular data and compatible gadgets. The low internet connection they have become the reason they turned the camera off all the time during the whole class sessions. Thus, the teachers could not control the students and see whether they were in front of or around their devices. However, some students were still willing to take their cameras on when it was their turn to talk.

Another challenge experienced was students' attendance at the beginning of remote or distance learning. Some of their students could not adapt to the platforms used for online classes which affects the students' attendance. Other students who had supporting devices and internet connections managed to handle the way to use the platform without the teacher's guidance. Many students live in the rural area where the signal was poor even if they have sufficient facilities. However, it was found that a teacher wasted time by calling out each student's name during the online attendance checking. Then, he realized that such a practice was not suitable for online learning. Teachers should have strategies to use the limited time and online resources effectively so that the online classes could be filled with significant knowledge transfer and language practices.

During the Covid-19 pandemic, particularly, the lack of teachers-student interactions was in slow progress because of the lockdown situation in every institution. The teachers considered that students' social and interactional skills could not be elevated through virtual exchange. One way or another, it needed the teacher's role to motivate students to keep on joining online classes and complete the tasks given.

4.2 The Challenges from External Factors: Parents and Institutions

Difficulties in all aspects of human life occurred during the spread of the contagious Covid-19 virus. Parents' economic conditions and educational institutions have also been affected by the pandemic. Lack of financial and technological infrastructures become a major problem, especially in those frontiers, outermost, and least developed regions in Indonesia. The issue of parents' low income has been challenging in NTT and Papua. They prefer their children to go face-to-face classes at their campuses because going online would take so much cost like supportive cellular phone, laptop, and internet connection.

Table 4: Challenges from External Factors in Online Learning (during COVID-19 pandemic).

T 18; T13-T17	Parents living in the city spend so much money for online learning. But how about those who live in remote areas?
	Parents were complaining because their children could not learn well and it consumed much money for internet
T13-T17	Institution chose platforms that are based on cultural, social, structural and limited economic situation.
	Institution is required to provide fast internet connection for teacher and students
T19	Parents' low income is one of the obstacles here. The institution facilities did not support online learning. The online learning was rarely done during the pandemic.

In Table 5, it can be seen that students coming from low-income families were common in these regions. Previously, students may access free internet connection from their educational institutions, but because of the movement of learning from home, students had to buy internet connections on their own. The lack of internet access at home has made learning lost because students could not attend the online classes set by their teachers.

The transformation from traditional face-to-face education to digital learning has brought challenges for universities and institutes. For the stakeholder of every institution, the pandemic situation has been very problematic as complaints came from parents and students. They have to decide what platform should be adopted for their students that suits the surrounding economic condition.

4.3 The Opportunities of Teaching Interactional Competence in Virtual Exchange

Teachers who put great efforts to overcome challenges that might come from internal or external factors were worth researching. The identification of challenges in integrating ICT technologies in higher education should be done with care, because the challenges occurred may be different from one to another campus. It is crucial to see how teachers or lecturers use particular strategies and improve their competencies for effective online learning. The next section presents how the teachers-participants cope with the challenges and transform them into opportunities to retain technology integration as innovative pedagogy in the post-pandemic period.

The results obtained from the interview sessions showed that on technological competence, the teachers perceived that the forced use of technology for learning during the pandemic was the chance for them to gain more knowledge and skill to operate the existing software, platforms, or applications.

T4,T18 : *I should know how to apply online learning applications and platforms to keep on teaching my students from home. I also learned to make contents on YouTube.*

These teachers realized that they should have good knowledge and skill to enter such digital learning environment. In a more positive way, teachers become more digital literate who can operate various existing online applications and platforms. They become more creative and innovative in their pedagogical competence. This result highlights the importance of teachers' technological competence to ensure their professional identity and security. They have become more confident that a 21st century teacher is an innovative teacher who has technological-pedagogical competence.

Some teachers saw that virtual exchange is an opportunity for shy students to speak up more during the class activities in compare to face-to-face class in which shy students might have got nervousness while they were speaking. These teachers found that shy students were more confident in practicing speaking through virtual exchange. One lecturer with a belief that language learning as a collaborative activity had set events to provide students opportunities to interact in online learning by collaborating with his English speaking friends from many countries. Other teachers assigned students into groups to have interaction in English through break-out-rooms. Another lecturer focused on students' fluency rather first, because sometimes students had to deal with bad internet connection that caused loss voices.

T2-T19:I make them work in groups to interact and collaborate in break-out rooms. I found that shy students were more fluent in speaking, despite their errors in grammar use.

T15: Let them interact with each other as long as they use English and understand the meanings. I only give feedback after they finish the conversation. The feedback is usually about inappropriate grammar and vocabulary they use in the conversation.

T8: I have been using Skype in my speaking program. I set the online session for online interaction between my students and my foreign friends. I can manage my time and

schedule easier by using an online meeting platform to teach speaking skill.

A teacher also used pictures and written textual hints to support student discussion which was done as preparation before discussion in English. During the discussion, there might be only three or four students engaged in the turn-talk. However, this was an opportunity for other students to be active listeners who would be asked about the discussion when it was over. One of the characteristics of someone with good interactional competence is that he or she is an active listener understanding the topic being discussed and later, giving a reaction to the speaker/s. In this process of taking action and giving re-action through spoken language here means having interactional competence.

There was also a possibility seen by a teacher to develop online teaching materials by making pdf flipped books which can be linked with YouTube videos relevant to the learning topics.

T9: Era digital become teaching online platform is quite interesting because the lecturer easier to access some resources as a teaching materials. I can make a module with pdf flipped book now.

The responsibility for preparing and planning materials for online courses is on teachers. Adjusting from face-to-face material content to an online setting could be very challenging. With this result, it shows that incorporating multimedia into online course design might be needed by some teachers and it is an opportunity to develop teacher's technological competence. It is important to note that multimedia options allow students to master the material content independently. The developed materials can be accessed by students through platforms that are available in the universities.

Online platforms for education may have not been used in many universities before the pandemic. However, the emergence of remote learning during the outbreak of the contagious covid-19 virus became an opportunity for a university in NTT to implement Microsoft Teams as its official online learning platform. Four teachers from NTT were in the same university in which this platform was purposefully applied for online learning during the pandemic. This online program was started in April 2020 where all administrators, students, lecturers, or teachers were trained for a couple of days. This platform is still used currently for all the hybrid learning courses.

4.4 Themes on Challenges and Opportunities Encountered by English Teachers

The themes related to challenges and opportunities encountered by the teachers in teaching speaking through the virtual exchange to enhance interactional competence are divided into four. Figure 1 shows the result of collating codes of challenges and opportunities encountered by teachers-participants of this research. The first is about the digital transformation in which there are challenges faced by the teachers during the transformation from face-to-face learning interaction to online learning interaction. Teachers had to cope with the challenges of 'being forced'-intention to adopt online teaching, mastering new technologies, and creating a digital environment for students during the pandemic. Then, there are opportunities to conduct hybrid or blended

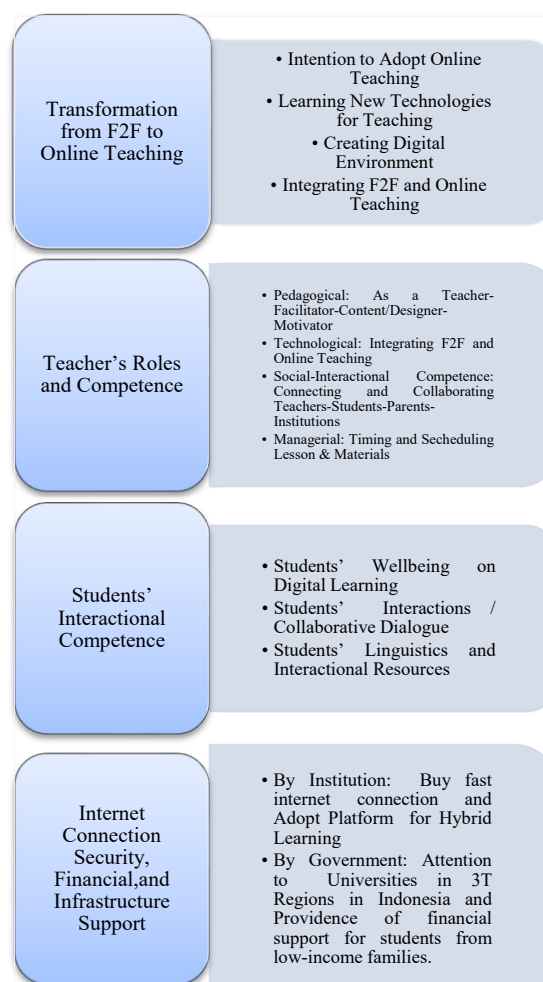


Figure 1: Themes of Challenges and Opportunities in Digital Learning.

learning by integrating both face-to-face and online teaching. The second theme is categorized based on theoretical themes such as teachers' technological, pedagogical, social, and managerial competencies along with technological-infrastructure issues. They are presented sequentially from the most repeated pattern or theme to the least apparent theme in the collected data. The first and most challenging was related to teachers' pedagogical competence in which they have complex roles in online learning as a teacher, a facilitator, content and instructional designer, and a motivator to students. Teacher's technological competence was in the second order because only two teacher participants that hardly adapt to new technologies while others had already familiarized themselves with online learning. Yet, technological competence is crucial in online learning.

The teacher's social competence deals with their role of connecting and collaborating with other teachers, students, parents, and institutions. In this study, it is connected to interactional competence, since this role aims at gaining mutual understanding and thus, collaboration with all aspects that leads to successful language teaching and learning. Carrying out online courses also needs a managerial role in which teachers create timelines and schedule for their students. It all deals with the preparation of instructional course design. Timeline and schedule deal with when the uploaded online materials can be seen by students before the scheduled synchronous virtual exchange. Here, the students have to learn from the available materials before the speaking practice. It is crucial for effective and fruitful interaction through the virtual exchange as students have already possessed background knowledge of the topic.

The students' interactional competence per se became the challenge faced by teachers. Teachers could not control the students as they often turned off cameras during interaction in virtual exchanges. While linguistic and interactional resources still could be observed in virtual exchange, teachers need to assess students' facial expressions and gestures. Teachers' presence during collaborative activities in virtual exchange and their attention to the linguistic and interactional resources employed are vital for the completion of collaborative activities and the achievement of inter-subjectivities. Finally, poor or bad internet connection is commonly a cliché challenge in the digital learning environment.

5 CONCLUSIONS

The challenges of online learning can be transformed into opportunities. Teachers, students, parents, and universities acquire insight into how to prepare and cope with pandemic situations that could happen anytime in the near or far future. Integrating technology for education during the pandemic is an asset towards 'momentous innovation' (Peters, 2000) of digital pedagogy where innovative teachers transform or turn challenges into opportunities.

Teachers who previously had less knowledge of skills on technology for teaching-learning were endeavoring to upgrade their technological competencies through experiencing during the covid-19 pandemic, then, committed to integrating technology after the pandemic. Here, opportunities arose from challenges in terms of teachers' competence and professional development. Identity as a teacher is supported and strengthened through the development of technological-pedagogical competence.

It is affirmative that Interactional Competence is teachable through collaborative virtual exchange (Moorhouse et al., 2021; Zeng, 2017) where teachers, students, parents, and educational institutions are supportive of the digital learning environment. However, physical face-to-face interaction is consistently needed by learners, therefore further investigation of learners' slides is suggested. Face-to-face and online interactions are not to be compared in the post-pandemic era, rather they can be combined which is vastly known as hybrid learning. Giving immediate feedback (on linguistic-interactional resources) in teaching speaking is crucial for students' development particularly to enhance interactional competence.

Students' perception and subjective well-being regarding the effect of virtual exchange to enhance their interactional competence are needed to be investigated for further results. They would be supporting factors in the advancement of interactional competence, in terms of extra-linguistic factors. Last but also important is that about internet connection, the Indonesian Minister of Information and Technology should pay attention and support more to upgrading the Internet-based facilities for education in the Centre and East Regions of Indonesia.

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Character Education-Based Project: Need Analysis to Encounter Society 5.0

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Keywords: Character Education, Character Education-Based Project, Character Education Need, MBKM Curriculum, Society 5.0.


Abstract: This research aims to formulate the need analysis of character education-based project. Character education has been considered and recommended for a wide variety of reasons. This research uses qualitative method. For collecting the data, the researcher uses questionnaire as the instrument. The questionnaires are distributed to elementary teachers in Muara Bungo. It analyses six indicators of content area in character education-based project. The finding shows that character education-based project is needed in this era. The key of character is positive action that students must have to build the self-protection to face the society 5.0 era. The research finds six need analysis: social skill and awareness, Personal Improvement and awareness, problem solving and decision making, self-identified as character education, explicit focus on values and ethics, and academic curriculum integration. Character education-based project model is a learning model which combine the technology-based and character-based. This model aims to create the students have good emotional quotient intelligent (EQ) and good Intelligent quotient (IQ). By implementing character education-based project, it is expected the learning activities experienced by students will be very meaningful in their lives, where they will always remember the character values. By utilizing technology, it could help students in learning process..


1 INTRODUCTION


Character education is needed to face society 5.0 era in Indonesia. Society 5.0 as global trend that everyone has to struggle to face society 5.0. The concept of society 5.0 was explained as a new vision for Japan by the Japanese Prime Minister at the 2019 World Economic Forum Annual Meeting in Davos, Switzerland. The concept of society 5.0 is an information society by accessing data-based services on the internet. It emphasizes an integrated, easy and fast life (Triwoko, 2020). It makes human life be practical and automatic. For example, the use of robots that can help restaurants, clean houses which could be controlled by computers and internet. Practical and automatic in human life is a concern


which will cause the erosion of character values as a human being.

In Indonesia, society 5.0 must be anticipated by strengthening national education and culture so that there will be a mature transformation by mitigating the risk factors that can arise. To achieve this goal, there are two important factors, they are Education and Culture (Kemdikbud, 2022). Education is as a medium to prepare the intellectual aspects of youth, while culture is as a medium to strengthen aspects of "soft skills". In society 5.0, artificial Intelligence (AI) and the Internet of Things (IoT) are used as tools to help humans live a higher quality. It does not become human to be victims of technological sophistication, including symptoms that appear to be no longer able to think critically and fully believe in the capabilities

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of technology. This is the reason why character education is important.

Character education is all the actions performed by teacher, who is able to influence the learners' character. Teachers help to form the student character. This includes how the behaviour of the teacher, the way the teacher talks or deliver material, how does teachers do the tolerance, and various related matters other. Good character really needs to be formed from an early age. Early age is critical period for the formation of human character. The formation of human character must be carried out systematically and continuously involving aspects of knowledge, feeling, loving, and acting. It requires the practice of moral implementation continuously, not memorizing or just knowing, in order to become sturdy and strong. The success of character education must also be supported with an effort to provide the environment which has good education atmosphere and good socialization for students (Sukesi et al., 2020).

The realization of a good educational atmosphere must be supported by a curriculum design that contains character values. Starting from the academic year of 2022/2023, MBKM Curriculum is one of the options that can be chosen voluntarily by educational units or school. There are several advantages of the MBKM Curriculum (Ineu et al., 2022). First, it is simpler and more in-depth because this curriculum will focus on essential material and the development of student competencies in its phases. Second, teachers and students will be more independent because students can choose subjects according to their interests, talents, and aspirations, while for teachers, they will teach according to the stages of achievement and students' development. Third, schools have the authority to develop and manage curriculum and learning process in accordance with the characteristics of school and students. Fourth, learning based project activities will provide wider opportunities for students to actively explore actual issues, to support the development of the students' character and the competencies of the Pancasila Student Profile.

Team-based project method is one of the methods on the main performance indicators of MBKM curriculum (Seidel & Godfrey, 2005) (Lubis, 2015). The goal is to develop student characters and the competencies of Pancasila Student Profile. Based on the explanation, the researcher takes the important point that character education-based project is expected to be able to form the students' character. This is expected to eliminate the moral crisis in student, because good morals can lead students to be ready to face the era of society 5.0.

The character education-based project is a new design of learning model to face that era. Therefore,

a need analysis is needed to gather input from target situation and learning situation. This paper focuses on need analysis from teachers. Need analysis is carried out to answer the accuracy and suitability programs with students and curriculum.

2 RESEARCH METHOD

The research was conducted by using qualitative research design. The data collecting technique was conducted by Forum Group Discussion (FGD) of elementary teachers of one Public School in Bungo-Jambi, Indonesia. The questionnaire was distributed in the end of FGD session. The questionnaire was used to obtain the suggestion about the needs of character values in elementary students' school project. Needs analysis can be carried out through questionnaire as research instrument. The questionnaire consisted of the values which guided by religion, Pancasila, culture, and the goals of National Education. The data is suggestion from elementary teachers toward character education-based project as a new model design of teaching and learning. The qualitative data was analysed by using Miles and Huberman Model (Sugiyono, 2018). This model consists of data reduction, data presentation, and data conclusion.

In the data reduction process, the researcher shorted out and classified the data based on the indicator of need analysis about character education-based project, target situation analysis, and learning situation analysis. After that, researcher designed data presentation by using description and table. By the presentation of these data, the data would be easier to understand. Final step was data conclusion to get the finding of the research.

3 RESULT AND DISCUSSION

This need analysis aims to analyse the character education-based project that will be implemented with the MBKM curriculum at elementary school. After that, the need analysis is divided into three parts: target situation, learning situation, and teacher analysis.

3.1 Character Education Based Project to Face Society 5.0

The character education-based project is a combination of team-based project learning method with character education content. Team-based project

is a learning method that uses projects or activities as learning tools. Teaching approach that is built on learning activities and real tasks that are challenged to students related to daily needs to be solved in groups. Project based learning has the main objective of providing training to students to be more able to collaborate, work together, and empathize with others (Prastyaningrum et al., 2018). Based on those objectives, the researcher would combine character education into team-based project method. Project based learning has the main objective of providing training to students to be more able to collaborate, work together, and empathize with others (Khotimah et al., 2021). The objectives of team-based project consists of moral content.

These moral contents are integrated into the society 5.0 era to create the good quality of students. In the Society 5.0 era, the students must not only be equipped by critical thinking but also, they must have high analysis skills and creativity. High Order Thinking Skills (HOTS) is a breakthrough in finding the concept of knowledge by practicing directly and experiencing how to deal with the problems in the environment (Miterianifa et al., 2021). In this era, the teachers and the students use cell phones and laptops in their daily activities. These two devices are the important tools that can be utilized in the current learning process. The internet network is an important support system in maximizing the transfer of knowledge to students.

Transformation of education to face society 5.0 needs to be carried out from learning infrastructure as well as ways to provide direction and knowledge to students. The character education-based project is an innovation offer in this educational transformation. This is a challenge for teachers to adjust to learning process that must be technology-based and character-based. The technology-based and character-based are combined into a learning model, it is called character education-based project model.

Character education-based project can be implemented in all subjects especially in elementary school. The students are given the simple project that relate with daily life, so they can develop their creativity and their emotional intelligence. By developing the emotional intelligence, the students are able to have good character. It is not only about student, but also teacher. Teachers must be able to develop their emotional intelligence and their creativity in implementing this model. Teacher as a role model of students, must be able to show the good behaviour and develop moral knowing, moral feeling, and moral action. The syntax of character education-based project as follow.

Table 1: Syntax of Character Education-based Project.

No	Learning Steps	Teacher Activities	Students Activities
1	Orientation of basic question	The teacher presents the topic and asks questions how to solve the problem.	Asking basic questions what students should do about the topic/problem solving.
2	Designing product plan integrated technology-based and character-based	The teacher ensures that each student in the group chooses and knows the procedure for making the project (product) that will be produced.	Students discuss preparing a plan for making a problem-solving project including the division of tasks, preparation of tools, materials, media, and resources needed.
3	Arrange a project schedule	Teacher and student make an agreement about the stages of making a project and collection.	Students arrange a project completion schedule by paying attention to the deadline.
4	Monitor the activity and progress of the project by using technology-based and character-based	The teacher monitors the activity of students while carrying out the project, monitors the realization of progress and guides if they experience difficulties.	Students make projects according to schedule, record each stage, discuss problems that arise during project completion with the teacher.
5	Test result	Teachers discuss project prototypes, monitor student involvement, measure achievement of standards.	Discuss the validity of projects that have been made and make product/work reports to be presented to others.
6	Evaluation of Learning Experience	The teacher guides the project presentation process, responds to the results, then the teacher and students reflect/ conclude.	Each student presents a report, other students provide feedback, and together with the teacher concludes the results of the project.

By implementing character education-based project, the learning activities experienced by students will be very meaningful in their lives, where they will always remember the character values. By utilizing technology, it could help students in learning process.

This model aimsto create the students have good emotional quotient intelligent (EQ) and good Intelligent quotient (IQ). It creates the human resource that have good quality for the future. In addition, by using this model will provide skills on how to become long-life education for students and teachers.

3.2 Target Situation Analysis

Analyse needs on target situationthat will use the character education-based project model is important part in need analysis. These analysis states: teacher responses and behaviours towards school situations; what is the scope of the material, who will use this learning model;what competencies must the teacher have to apply this learning model; whether this learning model can be applied in the MBKM curriculum. The situation of using the character education-based project model is expected to have an impact on a more enjoyable learning situation.

3.2.1 School Potential

This need analysis is not only focus in developing the learning model, but some aspect that support to get the achievement also must be analysed.Based on the FGD, the respondent said about the facilities that school has as a potential aspect which can support the implementation character education – based project learning model.

Table 2: School Potential.

No	Learning Facilities	Response
1	School building	The school building consists of: <ul style="list-style-type: none"> • classrooms, • library, • health unit room, • teacher room, • administrative office, • headmaster room, • musholla, • canteen

2	The facility and the media of learning	White board Books Sport equipment
3	Extracurricular	Scout Drumband

The result of school potential analysis, it shows that still has a lack of learning facilities, such as science laboratories, computer laboratories, sports fields, LCD, projectors, etc. For the extracurricular activities, there are still not many offers for interest and talent development activities.

3.2.2 Students' Potential

The potential of students affects the success of the implementation of this learning model. By Exploring students' potential makes them have chance to improve their soft skill in learning process. The soft skills are needed to develop students' character and moral. The respondents note some moral knowledge which students' need.

Table 3: Students' Character Potential.

No	Component of Character	Response
1	Moral knowing	<ul style="list-style-type: none"> • Moral awareness • Decision making • Self-knowledge • Perspective taking
2	Moral feeling	<ul style="list-style-type: none"> • Conscience • Self esteem • Empathy • Humility • Self-control
3	Moral action	<ul style="list-style-type: none"> • Competence • Will • Habit

The result of need analysis in students' potential aspect show that students must have moral awareness, decision making, self-knowledge, perspective taking in exploring students' moral knowing in learning process. Someone who has the knowledge of goodness not necessarily able to act based on his knowledge, if not trained to be habit of doing good. Character also includes the area of emotion and self-habit(Jusmawati et al., 2020). The area of emotion that students must develop includes conscience, self-esteem, empathy, humility, and self-control. After students develop their moral feeling, it is needed action. Moral action that students implement in learning process become students' soft skill

competences. These competences change into will. Moral will that students have implemented in daily activity become habit. So, it needs three a good component namely moral knowing (knowledge about morals), moral feeling (emotional reinforcement), and morals action (moral behaviour).

3.3 Learning Situation Analysis

The learning situation analysis is needed in developing character education-based project learning model. The learning situation that is analysed include school potential, students' potential, and teachers' potential.

3.3.1 Curriculum Potential

The developing of character education – based project learning model need analysis the school curriculum. Based on the FGD, the school use the MBKM curriculum for first grade and fourth grade. The MBKM is a new policy related to improving the curriculum issued by the Indonesian Ministry of Education and Culture for school learning. It is a more flexible curriculum, while also focusing on essential material and developing the character and competence of students (Kebijakan & Tantangan, 2022). The learning can be adapted to the learning needs and students' interests.

This curriculum aims to produce the millennial generation able to understand the material taught by the teacher quickly, not just remember the materials given by the teacher. Students are also expected able to utilize technology in the learning process (Amalia, 2022). Currently technology has an important role in education such as the use of electronic media as a source of learning besides teachers, the emergence of new learning methods such as the blended learning method for facilitate the learning process, and the use of the internet for online learning. There are some activities in this curriculum designed to develop students' character to face society 5.0 era.

The curriculum consists of intracurricular activities, the project to strengthen the Pancasila student profile, and extracurricular. The project to strengthen the Pancasila student profile is carried out by training students to explore real issues in the surrounding environment and collaborate to solve the problem. The concept of MBKM curriculum include (Maulida, 2022):

- Project-based learning that aims to develop soft skills and character according to the profile of Pancasila students.
- Focus on essential materials, such as literacy and numeracy.

- The flexibility of the teacher to carry out differentiated learning based on the abilities of the students.

Based on these concepts, the character education-based project learning model can be applied to the MBKM curriculum. This learning model combines the project-based instructions that integrated the implementation of character values. Character education in elementary schools must get more attention to form a strong foundation of noble character for students (Fajri et al., 2007). Optimization in education shape the personality of students who are good at sorting and selecting associations, actions, and actions in accordance with applicable norms. This implementation is expected to be able to produce a superior generation for golden Indonesia in 2045. The content of character values in the MBKM curriculum can be seen in the dimensions of Pancasila student profile (Kemendikbudristek, 2022).

Table 4: The Dimensions of Pancasila Students profile.

No	Dimension	Element
1	Believe Allah the Almighty, have noble character	<ul style="list-style-type: none"> • Religious moral • Personality moral • Humanity moral • Moral to Nature • Patriotic moral
2	Global diversity	<ul style="list-style-type: none"> • know and appreciate culture • Intercultural communication and interaction • Reflection and responsibility for the experience of diversity • Social justice
3	Work together	<ul style="list-style-type: none"> • Collaborate • Care • Sharing
4	Independence	<ul style="list-style-type: none"> • Self-understanding and situation • self-regulation: management of motivation, goal setting, and evaluation of goal achievement • Critical reasoning
5	Critical reasoning	<ul style="list-style-type: none"> • Acquire and process information and ideas • Analyse and evaluate reasoning • Reflect and evaluate their own thinking
6	Creative	<ul style="list-style-type: none"> • Generate original ideas • Produce original works and actions • Have the flexibility to think in finding alternative solutions to problems

The result show that character values in the dimension of Pancasila students' profile have the achievement at the beginning of elementary school. Students can recognize the symbols of Pancasila and the Garuda Pancasila State Emblem. Implement Pancasila values in the daily life when do the school project (Trisnawati et al., 2022). Project based learning is implemented in cocurricular activity. There are two types activity, namely cross-subject learning and contextual and authentic learning (Rosidah & Pramulia, 2021).

Cross-subject learning consists of the project integrates the core competencies learned from each subject. The main learning objective is to achieve the Pancasila Student Profile (Jupriani et al., 2020). It is designed accordingly the developmental stage of the students.

Contextual and authentic learning is more flexible and more informal learning. The project is designed based local content. Therefore, the project also is designed based on the conditions and resources of the school and surrounding environment, issues that are currently developing, and according to students' interest. Teachers must be able to teach from exploring confidence in each student's ability to learn.

By simple projects that are appropriate to the ability level of elementary school students, creative and innovative products will be produced. The goal is not only to produce products, but how students interact in completing their products by implementing character education values. Character values are also applied by the teacher in Action, so that students see the behaviour of their teacher as an example.

There are three stages of character education: knowing stage, acting stage, and habit stage. The knowing stage consists of components of good character, namely moral knowing and moral feeling. The acting stage consists of academic curriculum integration. Habit stage consists of moral action. These stages become the indicators in character education-based project model for the MBKM curriculum in elementary school (Zahir et al., 2022). It also prepares students' soft skill to face society 5.0 era. So, the students' project must be integrated in character-based and technology-based.

Society 5.0 era requires people to be able to solve social problems or dynamics by utilizing technology, such as the Internet of Things (IoT), Artificial Intelligence (AI), robot technology, or even big data (Balti, 2021). Therefore, the students need to improve their soft skills in order to be able to improve skills in order to become good quality human resources in the future. Students gain knowledge that is integrated with the implementation of character

values and utilize the technology in learning process. It becomes a habit for students.

4 CONCLUSION

The character education-based project model is an adaptation of the development of the team-based project method. This learning model fills in the character values on student projects. The project given to students is a project related to daily activities. Through this model, students are expected to have good character traits so that they become living capital to face the era of society 5.0. The character education-based project is an innovation offer in this educational transformation. This is a challenge for teachers to adjust to learning process that must be technology-based and character-based.

Need analysis of the character education-based project model was carried out at an elementary school in Muara Bungo. Researchers analysed the target situation and learning situation. In the target situation analysis, the researcher observed school potential and students' potential. School potential is related to the readiness of learning facilities at school, while students' potential is related to the moral potential of students to be developed. In the learning situation analysis, the researcher observed the MBKM curriculum that had been implemented at the elementary school in grades 1 and 4.

Based on this analysis, the character education-based project could be tried out at these schools. There are six need analysis in developing character values of students: 1. social skill and awareness, 2. Personal Improvement and awareness, 3. problem solving and decision making, 4. self-identified as character education, 5. explicit focus on values and ethics, and 6. academic curriculum integration. By implementing character education-based project, it is expected the learning activities experienced by students will be very meaningful in their lives, where they will always remember the character values. By utilizing technology, it could help students in learning process.

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Usage of Learning Management System (LMS): A Qualitative Study of Self-Regulated Learning on EFL Learners in University Between Hopes and Challenges

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Keywords: LMS, Self-Regulated Learning, EFL Learners.

Abstract: This study is aimed at investigating the use of a learning management system (LMS) to promote self-regulated learning (SRL) for EFL learners at the University. This paper also is aimed at exploring the supporting and challenging factors in using LMS for EFL learners. This method used qualitative and quantitative studies. The instrument of this study used a semi-structured interview which was adopted from Gambo & Shakir (2021). The respondents of this research are eight EFL learners at University taken by convenience sampling. The questionnaires used are adopted from Prasetya (2021). The respondents are 54 learners. The results of this research showed that most of the features in LMS used by EFL learners are powerful to promote five components of SRL including goal setting, strategic planning, task strategy, elaboration, and help-seeking. The LMS features are divided into three categories. They are learning tools, communication tools, and productivity tools. The hopes of using LMS included the quality of English learning, collaboration, and also self-regulated learning. The challenges faced by learners are technology, capacity, e-learning support system, and self-regulation issues.

1 INTRODUCTION

In this globalization era, technologies become one of an essential things around the world. (Lyashenko & Malinina, 2015)(Cavus & Alhih, 2014). Technology systems are developing very rapidly and extending to various sectors, including the education sector. The implementation of modern technologies have made learning possible at any time and place (Cavus, 2011). One of the technology models is information and communication technology (ICT). It can be an essential role in educational aspect, having a special relevance and correlation in the instructional component, supported by Learning Management Systems (LMS) (Costa et al., 2016)). Therefore, this system requires a variety of current pedagogical models and trends to be able to improve students' skills and preferences to face the 21st century. One of the modern learning trends is Flipped-Class learning. This pedagogical model is often used in the teaching and learning process by adapting current technology, namely videos and virtual lectures from LMS (Zainuddin, Habiburrahim, Muluk, & Keumala, 2019).

In recent years, the practice and use of the Learning Management System (LMS) in learning has expanded and developed. This use also has a very strong influence on the educational process, especially at tertiary institutions (Cerezo, Sánchez-santillán, Paule-ruiz, & Núñez, 2016). Similarly, most of higher education institutions have been widely adopted the Learning Management Systems (LMS) globally for over a decade (Joel, 2015).

LMS is a system that has various infrastructure components that aim to transfer and distribute teaching materials to educational environments. The system includes data on the implementation of education, evaluation, educational targets, both individual and group targets, and controls all the learning processes that are carried out. (Soykan & Şimşek, 2017). Learning Management Systems (LMS) facilitate teachers, lecturers and students with virtual classes that can strengthen the learning process. In a virtual class environment or online class, Learning Management Systems (LMS) is a medium that strengthens class interaction for educational actors and goals (Bradley, 2020).

The use of i-classroom as part of blended learning could facilitate classroom interaction virtually. It also could connect students to their peers and other people, as well as used different ways, to find assistance in their learning (Wong et al., 2020). In addition, using the LMS in the EFL flipped classroom can give five learners' autonomy abilities, namely, receiving and distributing information, monitoring learning activities outside of class, students' pre-class learning content, peer interaction, and self-evaluating learning skills (Zainuddin et al., 2019).

One of the learning subject which uses the LMS is English learning in university. Some findings have reported about the benefits and positive impact of using LMS in English learning. Using LMS can improve students' English learning skill (Yafaei & Attamimi, 2019) (Putri & Sari, 2020), it also can support English teaching pedagogy's full capabilities (R. E. Prasetya, 2021). In addition, LMS makes students interested and motivated in learning English (Zainuddin et al., 2019), Next through LMS English students can improve their achievement and broader their experience (Rachmawati, Fadhilawati, & Setiawan, 2020).

The benefits of using LMS in learning are also related to the learners' positive attitude and behaviour. By using LMS in learning, learners improve their collaborative skill, autonomy (Lyashenko & Malinina, 2015), interaction and communication (Maulana & Lintang Sari, 2021). The important one is using online learning is the way students to regulate their learning through optimizing their cognitive and metacognitive process (Gafaro, 2019), namely self-regulated learning.

Self-regulated learning (SRL) consists of metacognitive, motivational, and behavioral processes that are personally initiated to acquire knowledge and skills. They are goal setting, planning, learning strategies, self-reinforcement, self-recording, and self-instruction (Zimmerman, 2015) (Identity & Rovane, 1998). SRL focuses on the learner's moldable role in explaining goals and strategies, as well as recognizing and reflecting on one's perceptions and influences alongside learning tasks (Triquet, Peeters, & Lombaerts, 2017).

Self-regulated learning is an active constructive process in which the learners take charge of their learning. The learners are characterized by high motivation level and actively involved in planning, setting goals, implementing and monitoring, and evaluating the entire process and their achievement (Saban Kumar K.C., 2021). Self-regulated learning is a system or process in which students plan goals, proactively regulate and manage

their cognition, maintain their motivation and their behaviour to get their goals (Öztürk, 2021).

The purpose of this paper is to investigate the use of learning management system to promote students' self-regulated learning in University in Indonesia. This paper also is aimed at exploring the supporting and challenging factors in using LMS to promote students' self-regulated learning between hopes and challenges.

2 METHOD

The study was conducted in the qualitative and quantitative research design. Qualitative research refers to a flawed structured research methodology to gain in-depth information about the use of LMS to promote self-regulated learning for EFL learners. The study utilized a semi-structured interview. It was conducted the depth interviewing of the respondent by convenient circumstances. The tangible research devices applied in the study composed focused on interviews.

The indicators of interview were adopted from Gambo & Shakir (2021) which focused on five components of SRL in smart learning. They are goal setting, strategic planning, task-strategy, elaboration, and help seeking. The respondents I took were English lecturers who used LMS in their lectures, and students who used LMS in the learning process. The number of interview respondents was 6 students and 3 lecturers.

The quantitative research is used to find out some hopes and challenges of using LMS for EFL learners. The questionnaire is prepared by using five points Likert scales (from strongly disagree to strongly agree). It was adopted from (R. Prasetya, 2021). The next step was to assess reliability and validity of the questionnaire. In terms of overall reliability, the Cronbach's alpha was .830, suggesting high internal consistency. The number of questioners respondents are 54 people.

3 RESULTS AND DISCUSSION

3.1 Findings

To find out the use of learning management system (LMS) for EFL Learners in University in order to promote self-regulated learning, it was conducted by interviewing eight respondents who were taken from every class and every level in English department.

Convenient sampling was used to choose the respondent of this research.

3.1.1 Goal Setting Aspect in Promote SRL Through LMS

All respondents agreed that LMS designed and set to let students through a process of reflection short- and long-term goals of learning. Communication feature of LMS supported them to think about considering what strategies they might use to accomplish and realize those goals. The lecturers posted some announcement about the course goal, informed about learning outcome of this course, learning goal every meeting and materials information every meeting as well. Therefore, students could access them conveniently.

I can manage and set my goal every course because in LMS through announcement site lecturers give information about the learning outcome and learning goal for every meeting (R4,T.1)

I can think what should I do to accomplish my goal through giving some information about learning outcomes in LMS (R2.T1)

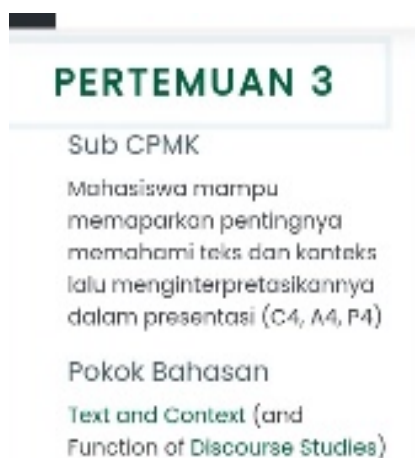


Figure 1: The Information about learning goal every meeting and also the material.

3.1.2 Strategic Planning Aspect in Promote SRL Through LMS

All respondents supported that using LMS could facilitate students to conduct strategic planning for their learning. It is related to students' planning the sequence, timing and completion of activities directed at learning goals. Through LMS features such as announcement every meeting, task or

assignment feature, students can manage or plan and also conduct some strategies to finish the task. In addition, some lectures also gave them the final project of this course using project-based learning, so they can set some steps to accomplish the goals.

There is assignment feature to manage us and to give information the dateline of submitting the assignment, so we can manage our time to accomplish it (R3, T2)

Not only assignment feature but also a quiz feature in our LMS can support us to manage our time because there is dateline of finishing the quiz (R6, T2)

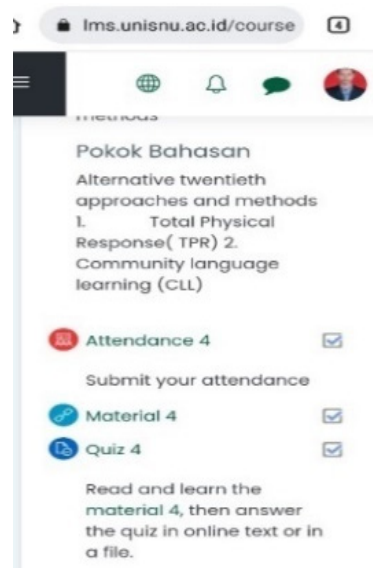


Figure 2: The Quiz Feature from Students' LMS.

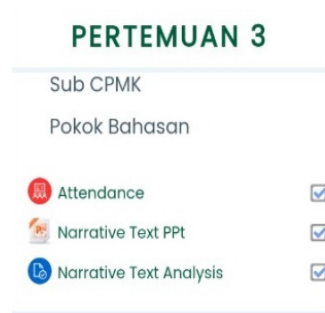


Figure 3: The Assignment Feature from Students' LMS.

3.1.3 Self-Evaluation Aspect in Promote SRL Through LMS

Concerning this aspect, students are able to reflect on their own learning, including their strengths and weaknesses. It can be conducted through some

features in LMS such as grade feature, discussion feature, assignment feature and also reflection site. All respondents agreed that they can conduct self-evaluation by supporting some features in their LMS, such; 1) grade feature; the students can reflect what have been done and what have they got of their learning based on their scores; 2) discussion feature; students can evaluate their own learning and understanding based on the dynamic of discussion between student and student, and also between student and lecturer; 3) reflection site; some lecturers using in project-based learning and setting their steps in LMS post reflection site for the students. It is aimed at reflecting on areas that they have done well in and some areas that need improvement.

We can evaluate our performance in learning based on the lecturer feedback through grade feature, and discussion feature. We can know our weaknesses so we can build it (R6.T1)

There is a reflection aspect In ELT material development course and research method in ELT course which are set in LMS. By using reflection feature, we can write and express what we felt and what we got from those courses (R8, T1)

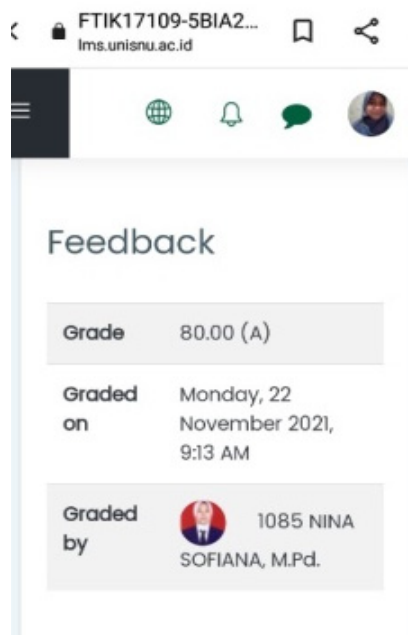


Figure 4: The Feedback from lecturer.

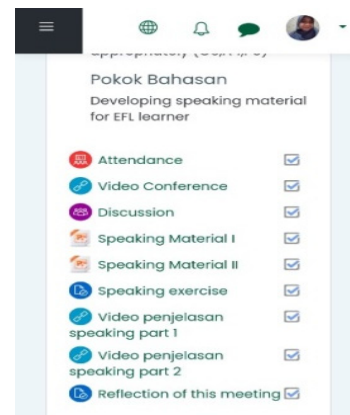


Figure 5: The reflection feature from students' LMS.

3.1.4 Task Strategy Aspect to Promote SRL Through LMS

Similar to strategic planning aspect, it focuses on organizing, planning, and transforming one's own study time and tasks. Based on the interview results, students can manage or plan some tasks given by lecturer due to distributing assignment feature in LMS. From that feature, we can access the instruction and rubric assessment of the task. The important one is students can get the information of the task dateline. Consequently, students can manage their time to accomplish the task. They also can organize some activities, such reviewing the material posted by lecturer, reviewing some discussion that is available in LMS.

We can manage our time to submit our assignment in LMS because the lecturer gives us the dateline information in our LMS. Therefore, we can plan some strategies to finish our task such reading materials and opening material video given by lecturer which set in LMS (R4, T4)

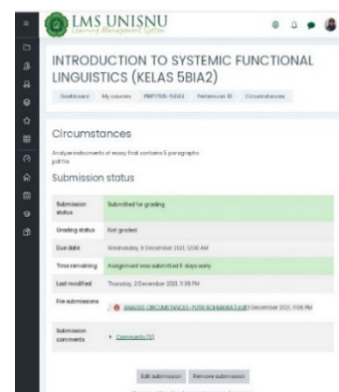


Figure 6: The information about timeline of assignment.

3.1.5 Elaboration Aspect to Promote SRL Through LMS

Concerning this aspect, elaboration is related to combining new knowledge with prior knowledge and constructing meaning from learned materials. For giving new knowledge and information about the course, the lecturers distributed the materials both PPT and PDF formats in LMS feature. In addition, students also got new knowledge from link shared through LMS. Some activities based on those features encourage students to learn and elaborate some knowledge that they have got. Besides, to construct some meaning and knowledge, the lecturer facilitated in discussion feature and also video conference feature so that between lecturers and students can share and elaborate some ideas related to the topic of this course.

To get the new materials or new knowledge, the lecturer posts them in LMS through material feature. The format file usually is using PPT (R1.T5)

Every meeting, the lecturers post some features such attendance, material link, discussion and also video conference link to conduct synchronous learning (R5.T5)

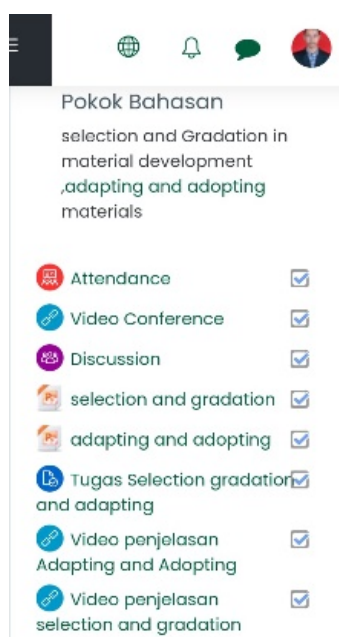


Figure 7: The material and video features.

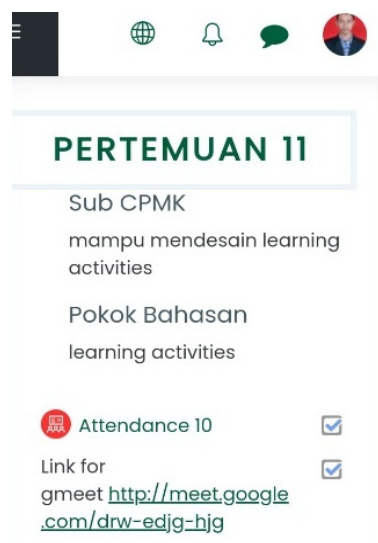


Figure 8: The Video Conference Link in LMS.

3.1.6 Help Seeking Aspect to Promote SRL Through LMS

Organizing and mapping the need for assistance becomes crucial when students experience learning difficulties and stagnation or are faced with a level of performance that is less than desired. With regard to the goal of seeking help students facilitate the recognition that seeking help can be a self-regulated learning strategy. The implementation of this aspect is asking other friends for help, or consultate to the lecturers or resources. In LMS we use discussion feature or video conference to ask for helping.

We can ask for help about the material, the task and also the project by using video conference with lecturer through google meet link. In addition, we can use discussion feature to confirm something unclear in every meeting (R6T6).

3.1.7 Hopes and Challenges in Using LMS for EFL Learners

To find out the hopes and challenges in using LMS for EFL learners in university, this study distributed 11 items related to the hopes and 15 items related to challenges in using LMS. The result can be seen from the table below.

Based on the results above, it can be concluded that more than 75% the respondents agreed that LMS should improve and build the English teaching and learning. Some hopes expected by respondents in using LMS are this system (LMS) can improve the quality and handle the English problems, can improve some component of self-regulated learning such

Table 1: The percentage about general perception of LMS.

Q	SA	A	U	DA	SD
LMS improves the Quality of English Teaching in Higher Education	3 (5.5%)	45(85.1%)	6 (9.2%)	0 (0%)	0 (0%)
LMS makes English Language Pedagogical pleasant	2 (3.7%)	45(83.3%)	7 (12.9%)	0 (0%)	0 (0%)
LMS Improving comprehensive Language Skills	2(3.7%)	40(74%)	10 (18.5%)	2 (3.7%)	0 (0%)
LMS handles with Language Teaching obstacle	1(1.8%)	45(83.3%)	8 (14.8%)	0 (0%)	0 (0%)
LMS generates a collaborative language teaching & learning situation.	4(7.4%)	46(85.1%)	3 (5.5%)	0 (1%)	1 (1.8%)
LMS enhances language teaching interactive experiences	3(5.5%)	41(75.9%)	9 (16.6%)	1 (1.8%)	0 (0%)
LMS stimulates language teaching needs and interests	1(1.8%)	44(81.4%)	9 (16.6%)	0 (0%)	0 (0%)
LMS encourages independent language teaching and learning	7(12.9%)	46(85.1%)	1 (1.8%)	0 (0%)	0 (0%)
LMS implements a comfortable environment to encourage target language practice	3(5.5%)	43(79.6%)	7 (12.9%)	1 (1.8%)	0 (0%)
LMS is appropriate for small or large group activities	4(7.4%)	38(70.3%)	10 (18.5%)	2 (3.7%)	0 (0%)
LMS supports lecturers and students' academic progression	9(16.6%)	42(77.7%)	3 (5.5%)	0 (0%)	0 (0%)

Table 2: Learning Style and Cultural Challenges using LMS.

Q	SA	A	U	DA
Disability in accessing technology	3 (5.5%)	30 (55.5%)	15 (27.7%)	6 (11.1%)
University Support	10 (18.5%)	40 (74%)	4 (7.4%)	0 (0%)
Students' family background	3 (5.5%)	30 (55.5%)	19 (35.1%)	2 (3.7%)
Lack of classroom	5 (5.5%)	29 (53.7%)	17 (31.4%)	3 (5.5%)
Attitude towards ICT	7 (12.9%)	45 (83.3%)	2 (3.7%)	0 (0%)
Electronic learning referred to the student-focused approach	3 (5.5%)	40 (74%)	5 (9.2%)	5 (9.2%)
Materials in textbooks	1 (1.8%)	20 (37%)	25 (46.2%)	8 (14.8%)

Table 3: Pedagogical E-learning Challenges Using LMS.

Question	SA	A	U	D
Requires much preparation time compared to other approaches	3 (5.5%)	29 (53.7%)	20 (37%)	1 (1.8%)
The course is not boundary with conventional time	1 (1.8%)	31 (57.4%)	19 (35.1%)	3 (5.5%)

Table 4: Time Management Challenges Using LMS.

Q	SA	A	U	DA
Lack in explaining the material	4 (7.4%)	25 (46.2%)	17 (31.4%)	8 (14.8%)
Learners are bored because of feeling isolated and disconnected	4 (7.4%)	29 (53.7%)	12 (22.2%)	9 (16.6%)
Lack of student engagement	7 (12.9%)	35 (64.8%)	8 (14.8%)	4 (7.4%)
Lack of evaluating student's task-based performance	4 (7.4%)	28 (51.8%)	16 (29.6%)	5 (9.2%)

Table 5: Technological Challenges Using LMS.

Question	SA	A	U	DA
The unavailability of internet access/ WIFI other infrastructures	4 (7.4%)	32 (59.2%)	11 (20.3%)	6 (11.1%)
The lack of cheaper software	7 (12.9%)	32 (59.2%)	9 (16.6%)	5 (9.2%)

collaboration, exploring new knowledge and experience, motivation and encouraging.

The table below describe some challenges related to using LMS for EFL learners.

Based on the tables above, it can be concluded that the challenges of using LMS by EFL learners are placed into four aspects. They are learning style and cultural challenges, pedagogical e-learning challenges, technological challenges, and time management challenges. The learning style and cultural challenges in using technology are the lack of teachers' or lecturers' ability, the concept of student-centered learning which still weak in Indonesian cultural. The next challenges are about pedagogical e-learning challenges. Those are related to students' motivation and engagement to be interested in learning using LMS. It is also related to some difficulties in assessing student's task-based performance. The third aspect of challenging in using LMS is technological challenging. It is about unstable signal and limited software used by learners. The last aspect is time management challenge. It focuses on long preparation to perform the LMS. It needs more time.

3.2 Discussion

Based on the findings above, it can be concluded that most of features in LMS used by EFL students are powerful to support the students' self-regulated learning including goal setting, strategic planning, task-strategy, self-evaluation, elaboration and help seeking. LMS tools can be addressed into three models they are learning skill tools, communication tools, and productivity tools (Onodipe, Keengwe, & Cottrell-Yongye, 2020).

Some features that related to the learning skills tools are quizzes, attendance, assignment, video conference. Whereas some features related to the communication tools are; announcement and discussion. Then, some features related to productivity tools are material, video material, record grades. Goal setting is one of self-regulated learning components in enhance online learning. Goals involve setting and modifying task-specific goals that serve as criteria against which to gauge progress (Schunk, 2005) (Scroll & For, 2010). Goal setting in Zimmerman's Cyclical Phases Model is included forethought phase (Panadero, 2017). Distributing some features related to goal setting in LMS gives best performance for learners (Handoko, Gronseth, McNeil, Bonk, & Robin, 2019) (Kitsantas, Robert, & Doster, 2004), and positive impact on SRL (Barkah Sanyoto, 2021).

Strategic planning is also essential for encouraging self-regulated learning of learners. Strategic planning promotes students' construction of mental representations of their goals, as well as the organization and management of strategies for achieving them (Eilam & Aharon, 2003). It could be started with determining goals, then the students should manage and plan using specific strategic to accomplish their goals (Chen, 2011). It is similar to task strategy which is one of component of SRL that related to cognitive domain. The cognitive area introduces the resources and also strategies that support in addressing the task. Metacognitive awareness recognizes the difficulty of the task and identifies the knowledge and skills needed for addressing the task (Rowe & Rafferty, 2013), Task strategy also significant correlation and predictor with SRL (Lee, Watson, & Watson, 2020).

The finding of this study also related to elaboration to promote SRL. It is proven by research (Liu, Xiang, McBride, & Chen, 2020) stated that elaboration component gives predominant effect to SRL. Elaboration refers to our ability to embellish new information in long term memory. Elaboration can occur at a shallow or deep level (Mehrens, W.A. & Lehmann, 1991). The last component of SRL is help seeking. It is supported by LMS to facilitate students to ask for help about their problems from teachers and more knowledgeable peers who are able to scaffold them to find or develop solutions (Dong, Jong, & King, 2020). It is proven by previous studies that showed contributing to a better understanding of contemporary university students' online academic help seeking (Cheng, Liang, & Tsai, 2013) (Won, Hensley, & Wolters, 2021).

Some findings related to hopes and challenges in using LMS for EFL learners are supported by some previous studies. Based on Xiao (2020) stated that to improve professional development LMS or Moodle can build with interactive platform and much features (Paragină, Paragină, Jipa, Savu, & Dumitrescu, 2011) (Egorov, Prokhorova, Lebedeva, Mineeva, & Tsvetkova, 2021), add best capacity (Deliwe, 2020). The findings related to some challenges are similar to some previous studies. LMS must be placed on using LMS friendly user interfaces that can enable all tools and functions (Al-Hunaiyyan, Al-Sharhan, & AlHajri, 2020), (Zain, Fadil, & Hadi, 2018) (Sahoo, Odame, Reddy, & Khan, 2020). In addition some challenges are connectivity, e-learning system support, and technological (Bhalalusesa, 2013) and self-regulation issues (Aini, Budiarto, Putra, & Rahardja, 2020).

4 CONCLUSION

This study is exploring the use of LMS to promote self-regulated learning on EFL learners in University. The features of LMS set by English lecturers support EFL learners' self-regulated learning. The component of SRL adopted to conduct this research consists of goal setting, strategic planning, task-strategy, elaboration, and help seeking. Those components are built by some features of LMS are quizzes, attendance, assignment, video conference, announcement, discussion, material site, video material, and also record grades. By using features of LMS encourage and improve students' self-regulated learning. EFL learners' perception about hopes showed that using LMS can improve the quality of English learning both lectures and learners. Some challenges related to this finding showed some aspect including technological skill, capacity and e-learning support system.

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How e-Worksheet Based Blended Problem Based Model Improve Problem Solving Skills?

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Keywords: e-Worksheet, Blended Problem-Based Learning, Problem-Solving Skills.


Abstract: Problem-solving skills are one of the skills that pre-service physics teachers must possess in this century as prospective professional physics teachers. Therefore, one way that can be done to practice problem-solving skills is by providing e-Worksheets based on Blended Problem-Based Learning (e-WB-PBL) model. This study aimed to determine the effectiveness of using e-WB-PBL in improving problem-solving skills. This study was carried out as part of Siliwangi University's physics education study program for pre-service physics teachers taking mechanics courses for the 2022/2023 academic year. This study uses mixed methods with a sequential explanatory design (two groups pretest-posttest). The sample was determined by purposive sampling with a full selection of 85 pre-service physics teachers. The control class consisted of 43 pre-service physics teachers, and the experimental class consisted of 42 pre-service physics teachers. The control class applies Discovery Learning (DL) learning, while the practical course applies Blended Problem-Based Learning (B-PBL). Statistical tests were used to analyze the data that were acquired, including N-Gain, to determine the improvement in problem-solving skills after using e-WB-PBL; the effectiveness of e-WB-PBL was determined by calculating the effect size, and the effect of e-WB-PBL was determined based on the results of the Mann Whitney test. The results of the N-Gain analysis show that the improvement in the problem skills of the experimental class is more significant than that of the control class, which is 0.9 in the "high" category. The results of the effect size calculation stated that e-WB-PBL was "very effective" in improving problem-solving skills, with a value of 1 in the "huge" category. The results of the Mann-Whitney test stated significant differences in the problem-solving abilities of the control class and the experimental style, with the improvement in the practical class's problem-solving skills being better than the control class. Based on the three results of the analysis, using e-WB-PBL is very influential and effective in improving problem-solving skills.


1 INTRODUCTION

Problem-solving skills are one of the 21st-century skills that need to be trained in physics education so pre-service physics teachers to become professional physics teachers. Problem-solving skills are fundamental in learning physics (Rizqa et al., 2020). Amin et al (2021) state that problem-solving skills must be taught and developed in the 21st century to meet graduate competency standards to deal with societal problems and environmental issues. It is also essential to train problem-solving skills to develop pre-service physics teacher's potential, which is directed through scientific investigation and helps

solve a problem, find facts, building theories and concepts so that they are used to dealing with problems they encounter in their daily activities, especially physics learning activities at school.

One physics learning model that can be used to practice problem-solving skills is problem-based learning (PBL). The PBL model incorporates real-world challenges they must resolve to develop pre-service physics teachers' problem-solving abilities (Diana & Makiyah, 2021). One way that can be done to solve this problem is by carrying out investigations in the form of practical activities in the laboratory so that pre-service physics teachers will also be competent in problem-solving skills (Darmaji et al.,

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2019). The PBL model is also proven to be an alternative to improving problem-solving skills, especially in Physics (Diana et al., 2022).

Observations in the mechanics class revealed that one barrier to using the PBL model to practice problem-solving abilities was that the time needed was still insufficient, depending on offline or online learning. Therefore, one solution that can be done to overcome these obstacles is to combine face-to-face learning with online education combined with independent laboratory practicum activities so that the teaching is called Blended Problem-Based Learning (B-PBL).

PBL is the foundation of the B-PBL model, which combines offline and online syntax learning. Applying the PBL model can further support pre-service physics teachers in mastering problem-solving skills. The PBL model engages physics teacher candidates in an interactive, cooperative, learner-centered learning process that fosters problem-solving skills (Aripin et al., 2021). This is by Tong, Kinshuk, & Wei (2020), which state that B-PBL effectively improves problem-solving skills. The B-PBL model is divided into five stages, namely first, orienting pre-service physics teacher's problems that are carried out offline, secondly organizing pre-service physics teachers to study offline and online, thirdly guiding group investigations (practice activities independently in the laboratory), fourthly developing and presenting the results of discussions online, and fifth, the problem-solving process is examined and evaluated offline (Ibrahim et al., 2022; Qalbi & Saparahayuningsih, 2021; Tong et al., 2020). This B-PBL uses an e-worksheet to make it easier to direct pre-service physics teachers in carrying out each stage in B-PBL. It also provides guidance questions in solving problems for learning activities outside the classroom independently or online. The e-worksheet was created based on the five steps in B-PBL and trained four indications of problem-solving abilities, such as comprehending the problem, developing a strategy, putting the plan into action, and reflecting on the final answer (Polya, 1978). B-PBL also leverages the use of technology that is accessible to digital resources, simulations, software, or online learning platforms (Lalima & Lata, 2017). Based on the preceding context, the researchers are interested in knowing how the B-PBL-based e-worksheet enhances problem-solving abilities and how pre-service physics teachers view B-PBL learning.

2 METHOD

This study employs a sequential explanatory design and a mixed method. Analysis in the early stages was carried out by collecting data and analysing it using quantitative methods and then deepening it with qualitative methods (Sugiyono, 2014). They combine data from the two ways connecting with data collection and analysis of the two methods carried out separately but made continuous. In Figure 1, the research design is displayed.

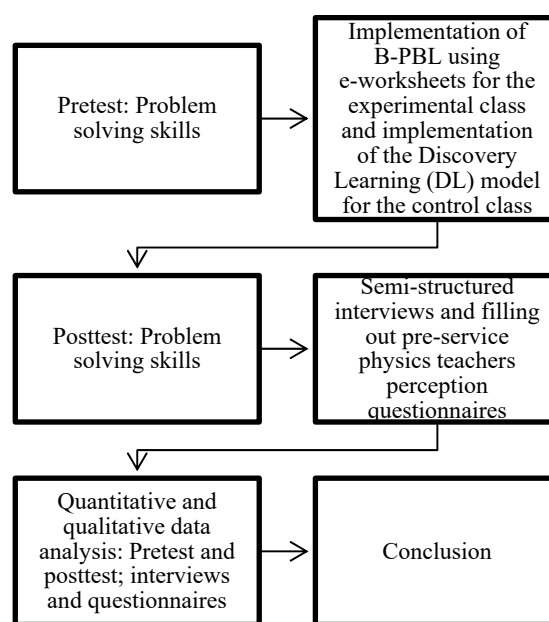


Figure 1: Sequential explanatory research design.

The pre-service physics teachers who took the two-class mechanics course during the 2022/2023 academic year served as the research sample. There were 42 pre-service physics teachers in the experimental class and 43 pre-service physics teachers in the control class.

The research instrument consists of an essay-based three-question test of problem-solving skills, each measuring four indicators of problem-solving skills regarding kinematics, dynamics, and harmonic motion. Other instruments, namely a list of semi-structured interviews and a student perception questionnaire, consist of statements with a Guttman scale on B-PBL consisting of 6 comments.

As for how to calculate the score of problem-solving skills according to Hudha et al (2017) as follows:

$$P = (x/x_i) \times 100\% \quad (1)$$

Where P is the percentage of the final score, x is the score obtained by the pre-service physics teachers on one indicator, and xi is the maximum overall score on the one indicator. The values obtained are then categorized according to each indicator according to Diana & Makiyah (2021) in Table 1.

Table 1: Problem-solving skills category.

Presents (%)	Category
0-39,9	Very less
40-54,99	Less
55,00-69,99	Enough
70,00-84,99	Good
85,00-100,00	Very good

Questionnaire scores use the Guttman scale with the options "Yes" or "No". The following equation then calculates the scores obtained from all pre-service physics teachers:

$$P = (f/N) \times 100\% \tag{2}$$

Where P is the percentage of the perceived value of the respondent, f is the total score obtained from the respondent, and N is the maximum overall score (Arikunto, 2012; Subana et al., 2015). The calculation results are then analyzed with the following criteria.

Table 2: Questionnaire percentage criteria.

Presents (%)	Category
0	There aren't any
0-25	Fraction
26-49	Almost half
50	Half
51-75	Most of the
76-99	Almost entirely
100	Entirely

Calculation of the score (N-Gain) can be expressed in the following equation:

$$N - Gain = \frac{\text{Posttest Score} - \text{Pretest Score}}{\text{Maximum Score} - \text{Pretest Score}} \tag{3}$$

The N-Gain value obtained is interpreted using Hake's criteria (1999) as follows:

Table 3: N-Gain criteria.

N-Gain	Criteria
$N\text{-Gain} < 0.3$	Low
$0.7 \geq (N\text{-gain}) \geq 0.3$	Medium
$(N\text{-Gain}) > 0.7$	High

The equation used to determine the effect size is as follows:

$$\text{effect size} = \frac{\bar{X}_{\text{posttest}} - \bar{X}_{\text{pretest}}}{\sqrt{\frac{S_{\text{posttest}}^2 + S_{\text{pretest}}^2}{2}}} \tag{4}$$

Where \bar{X} The average of the pretest and posttest scores, and S is the standard deviation. The effect size value obtained is interpreted using the criteria of Diana & Makiyah (2021) as follows:

Table 4: Effect size criteria.

Effect Size	Criteria
$ES < 0,2$	Very small
$0,2 \leq ES < 0,5$	Small
$0,5 \leq ES < 0,8$	Moderate
$0,8 \leq ES < 1,0$	Large
$ES \geq 1,0$	Huge

The statistical analysis included normality and hypothesis tests using the SPSS software. If the significance value (Sig.) obtained from the normality test is more significant than 0.05, it indicates that the data is typically distributed. In these circumstances, a t-test is performed. However, the Mann-Whitney U test in SPSS is utilized if the data is not normally distributed. The alternative hypothesis (Ha) is accepted when the significance value or asymptotic significance (Asymp. Sig.) (2-tailed) is less than or equal to 0.05. Conversely, Ha is rejected when the significance value or asymptotic importance (Asymp. Sig.) (2-tailed) is more significant than 0.05.

The problem-solving skills instrument that has been made has been validated by three experts and then tested on 35 pre-service physics teachers to determine the value of validity and reliability. Based on the results of the validity test with SPSS, it can be seen that the problem-solving skills essay questions are all valid and the reliability test results for problem-solving skills questions are 0.710 in the high category.

3 RESULT AND DISCUSSION

Based on data analysis in Figure 2, it was found that the posttest average in the experimental class was more significant than the control class, with the "very good" category for the experimental class and the "good" category for the control class. The practical course and the control class improve problem-solving abilities, although to a different extent. Discovery Learning and B-PBL treatments can improve problem-solving skills but have different improvement categories. In the experimental class,

problem-solving skills have improved by 0.9 in the "high category," compared to 0.6 in the "medium category" for the control class. Discovery Learning (DL) and B-PBL are effective for improving problem-solving skills but have different effectiveness criteria. B-PBL using e-worksheet has a "huge" sort while DL has a "moderate" criteria. The hypothesis test results show that B-PBL has a more significant effect on improving skills than DL with Asymp. Sig. (2-tailed) 0.000 less than 0.05 then H_a is accepted. When it comes to improving problem-solving skills, B-PBL outperforms DL because the model syntax in B-PBL trains problem-solving skills very well by training understanding the problem, devising a plan, carrying out a plan, and looking back at the completed solution. The best way to teach problem-solving is still to confirm the syntax model of the DL with stimulation, problem statements, data collecting, data processing, verification, and generalization. E-worksheets, according to other studies, considerably enhance problem-solving abilities (Hasna et al, 2021; Islam et al., 2021). According to other investigations, e-worksheets enhance problem-solving abilities through B-PBL applicable to everyday phenomena (Destianingsih, Pasaribu, & Ismet, 2016; Sari & Sinurya, 2019).

indicator of problem-solving skills. Pre-service physics teachers get experiences that are challenging, interesting, and fun so that they are prepared to have problem-solving skills.

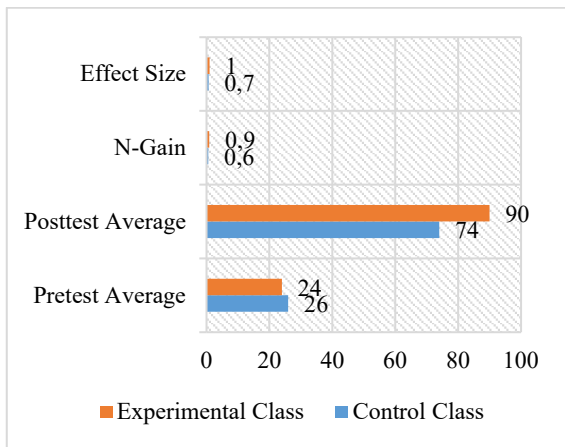


Figure 2: Results of pretest and posttest data analysis.

Based on the data in Figure 3, it was found that B-PBL is very effective and very significant in improving each indicator of aptitude for solving issues. The experimental class's posttest average for problem-solving abilities fell into the "very good" category. The e-worksheet utilized in B-PBL gives "guidance questions and instructions" in addressing problems, enabling pre-service physics teachers to be independent and active in solving problems. B-PBL is very effective and significant for enhancing each

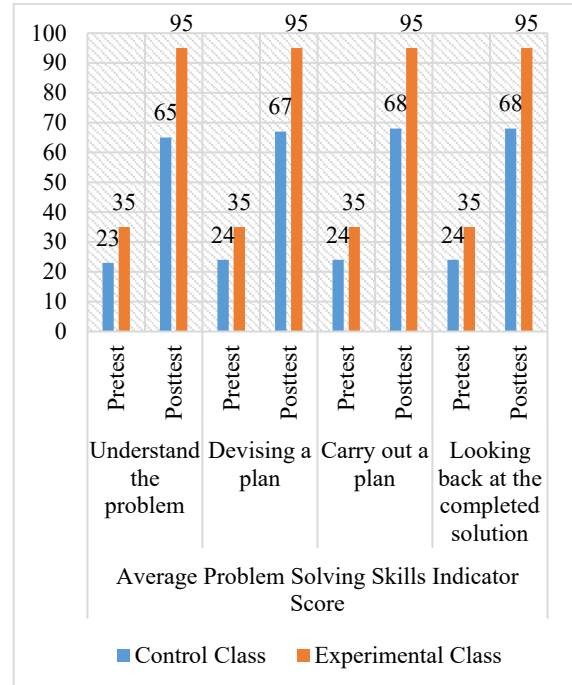


Figure 3: The result PSS indicator score.

Physics pre-service education According to the findings of a Google Form survey, physics instructors provided thoughtful comments. Almost all pre-service physics teachers stated that through B-PBL, using e-worksheets on kinematics, dynamics, and harmonic motion could improve problem-solving skills. Researchers also observed that pre-service physics teachers were more independent and active in finding solutions to problems during the learning process. Almost all pre-service physics teachers stated that Blended-Problem Based Learning (B-PBL) made it easier for them to understand kinematics, dynamics, and harmonic motion materials. Nearly all physics teachers in training claimed that Blended, Problem-Based Learning (B-PBL) improves their problem-solving abilities. Almost all physics teachers in training said they like and appreciate Blended-Problem Based Learning (B-PBL) on kinematics, dynamics, and harmonic motion. Almost all pre-service physics teachers noted that the problems given in Blended-Problem Based Learning (B-PBL) on kinematics, dynamics, and harmonic motion are interesting, so they are motivated to solve these problems independently.

This learning provides a meaningful and memorable experience. Almost all pre-service physics teachers wanted Blended-Problem Based Learning (B-PBL) replicated to other mechanics concepts. The findings of this investigation are investigated by Ukhtikhumayroh & Rahmatsyah (2021), stating that respondents responded positively to the application of B-PBL. Learning that is student-centered and involves active interaction in solving practical problems contributes to an increased understanding of more significant problems (Lukitasari et al., 2019). The characteristics of B-PBL learning encourage pre-service physics teachers to actively plan strategies for solving physics problems and involve intense interactions in the learning process (Triyanto & Prabowo, 2020). The B-PBL model also provides opportunities for pre-service physics teachers to get feedback and reflection on solutions to solve problems to encourage the development of better evaluation abilities (Suwono & Dewi, 2019).

Indicators of problem-solving abilities in the experimental class employing B-PBL are more significant in enhancing student problem-solving abilities, according to the results of the pretest-posttest indicators of problem-solving abilities in the experimental and control classes because learning is carried out much more effectively, namely face-to-face and online, so that time student learning can be more to strengthen the concept of each material studied. In addition, in B-PBL, students go through a process of investigation and laboratory work that is not verification in nature because, in B-PBL, students are asked to learn to make various assumptions and actively think about finding solutions to solving problems (Dewi, 2013).

4 CONCLUSIONS

In this study, the e-worksheets-based blended problem-based model is very effective with a vast category in improving problem-solving skills. Furthermore, the worksheet instructions are designed to be easily understandable, and an element of humor is incorporated to add enjoyment to the experience of pre-service physics teachers as they independently and actively answer questions and find solutions to problems. Based on the data analysis findings, e-worksheets-based blended problem-based models are essential for significantly improving the problem-solving skills of pre-service physics teachers, particularly in the high category. These models provide the necessary training for enhancing

problem-solving skills by answering questions in the worksheet and actively seeking solutions to problems. As a result, pre-service physics teachers gain valuable and meaningful experiences that are both exciting and engaging. E-worksheets-based blended problem-based models are highly recommended for learning to improve problem-solving skills.

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Mind Full or Mindfulness! The Effectiveness of Mindfulness Using Brainwave Entrainment Portable EEG Muse™ S First Generation

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Keywords: Covid-19, Post-Stroke Comorbidities, Mindfulness, Buddhist Guidance and Counseling, Relaxation, Portable Electroencephalography (EEG)-Muse™.


Abstract: A client had difficulty sleeping and was isolated at the start of the Covid-19 pandemic in 2020. Full attention to breath, body, and mind activities is essential in mindfulness practice. Treatments and measurements of mental relaxation are administered using the first-generation Muse™ "S" Series. Portable and the "Muse: Meditation and Sleep" by InteraXon apps, connected by mobile technology (iPad/ iOS). This research method uses a single-subject study design with a time series approach. The research sample was conducted on clients with post-stroke comorbidities. The treatment of mental relaxation sessions using mindfulness techniques: mindfulness of breath and body, and Muse's built-in brainwave entrainment. The results of measuring brainwave conditions inferred from the Muse™ application are compared. This study finds reflection on the practice of mindfulness on mental relaxation. Changes in deep relaxation occur when the client uses brainwave entrainment assistance compared to without using the default brainwave entrainment from the Muse™ application. Information on the Muse™ measurement app shows increased, lasting strength with each session. Clients run a total of twelve sessions of mental relaxation guidance. In each session, the client feels more comfortable using the help of brainwave entrainment. Even though the comparison of treatments showed different results, sleep problems and isolation during the pandemic were resolved through mindfulness sessions.


1 INTRODUCTION


In a study of 1.257 medical staff from 34 hospitals with fever clinics or COVID-19 patient wards in different regions of China, the majority of medical staff reported symptoms of depression, anxiety, insomnia, and distress, especially women, nurses, staff at Wuhan, and frontline health workers who directly treated or cared for patients with suspected or confirmed COVID-19 (Lai et al., 2020). Another report says the emergence of the 2019 coronavirus disease (COVID-19) is impacting healthcare workers' mental and mental health (Alnazly et al., 2021). Stress, isolation, and lack of access to resources are


significant in the growing concern over newly discovered sleep disturbances and problems.


Several reasons can explain why some individuals have trouble sleeping. Increased daytime stress, anxiety, and distraction are apparent causes of sleep disturbances. However, other factors are rising, such as limited light exposure, lack of exercise, studying from home, changing sleep schedules and daytime routines, poor diet, and parenting demands. All are acting to worsen the ability to get a good night's rest. In Indonesia, this condition is not much different from several countries in other parts of the world experiencing the Covid-19 pandemic. The middle to lower-class economy has a significant impact. However, this certainly has an impact on the psychological aspect. Some clients who are used to

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monthly drug therapy also experience additional anxiety. This study narrates the extent to which the client's condition before and after guidance counseling is carried out.

2 PORTABLE ELECTROENCEPHALOGRAPHY (EEG) MUSE™ "S" ON MINDFULNESS PRACTICE

The Muse S — a multi-sensor meditation device that provides real-time feedback on brain waves, heart rate, and body movements — allows users to seamlessly switch from daytime meditation sessions to bedtime wear with comfortable, sleep-inducing fabrics—using advanced EEG technology to respond to the mind, heart, and breath. The Muse "S" is a comfortable brain-sensing headband that helps clients understand and track how well they are focusing, sleeping, and recharging so they can refocus during the day and recover each night. Muse's meditation library includes calming soundscapes for daytime use and responsive Go-to-Sleep Journeys for night-time sessions, inviting clients to explore relaxing lavender fields, forests, and underwater landscapes. Advanced EEG sleeps tracking from the client's bed.

2.1 Understanding Muse™ Meditation Data

At the end of each session, the researcher opens the client's results page data and uses the data as discussion points to understand better what was going on in his mind. Use a client's results chart to ask them to reflect on their mindfulness meditation experience. Ask curious questions about times when their mind is active, attention fluctuates, and whether they remember sustained periods of calm. For some descriptions of the signs contained in the Muse™ application are described as follows: (Workbook, 2018).

2.1.1 Calm Points

Calm Points are awarded for time spent meditating with a relaxed and focused mind. Receive 1 point every second the brain is in a natural resting (neutral) state and 3 points for every second spent focusing intensely on the breath (calm).

2.1.2 Bird Sounds

When the client finds deep, calm focus on the breath for a long time will begin to hear birds chirping. Over time, it will learn to use birds as cues to focus more on attention.

2.1.3 Recovery

When clients see the mind wandering and bring attention back, they are given rejuvenation. Recovery celebrates the moment from active (mind wandering/fluctuating attention) to neutral (a natural resting state). Recovery is critical to building focused attention skills and integrating the benefits of meditation into everyday life. Tap the graph to see the exact moment of resuscitation highlighted in orange.

2.1.4 Graphs

Client results in charts show what their brains are doing while they meditate and when they are in each state.

2.1.5 Active

It is time spent with a wandering mind. Attention fluctuates. The Client observing that the mind is active and returning attention to the breath builds mindfulness skills.

2.1.6 Neutral

It is a natural resting state. Attention does not fluctuate, but it only focuses a little.

2.1.7 Calm

Deep calm focus on the breath. These are the moments when concentrating on the breath. If it is quiet and focused long enough, it will hear the sound of a bird.

2.2 Effects of Mindfulness and Mental Relaxation Using Brainwave Entrainment on Sleep Disorders

Although someone is most likely to experience the consequences of a poor night's sleep, such as low energy, dizziness, and irritability (See also Kobayashi *et al.*, 2016; Zhang *et al.*, 2020; Amaerjiang *et al.*, 2021; Bhat and Chokroverty, 2021; LaGoy *et al.*, 2021; Hall and Coccaro, 2022; Moavero *et al.*, 2022; Ristanovic *et al.*, 2022; Schäfer *et al.*, 2022). Somebody may need to know all the benefits

of mindfulness meditation for consistent quality sleep. Several studies show the benefits of mindfulness training (Berk et al., 2018; Cavic et al., 2021; Corbally & Wilkinson, 2021; du Plessis & Just, 2022; E., 2021; Eberth & Sedlmeier, 2012; Ihme & Sundstrom, 2021; Oliver et al., 2013; Pallozzi et al., 2017; Yoon-Suk Hwang et al., 2015). Consistent meditation practice has been shown to increase melatonin levels, which play an essential role in sleep regulation.

Activate someone's parasympathetic nervous system: Transcendental meditation techniques have been shown to activate one's parasympathetic nervous system. Alternatively, resting and digestive responses are crucial to bringing the body into a calm and relaxed state. While there is no best time to meditate during the day, meditation provides different benefits depending on when a person finishes the session. Meditating at night or before bed can help the client slow down their breathing and heart rate, which can help them move more quickly into the first stage of non-REM sleep. Sati (Pali: सति; Sanskrit: स्मृति smṛti), usually translated as "mindfulness" in early Buddhism, and examines its soteriological function and its central role in early Buddhist practice and philosophy. Using textual analysis and criticism, it takes a new approach to the subject through the comparative study of Buddhist texts in Pali, Chinese, and Sanskrit. It also provides a unique perspective on ancient teaching by applying findings in modern psychology (Kuan, 2007). The term mindfulness in this study intends to practice mental relaxation by paying attention to the breath and the body and using or without the help of brainwave entrainments, such as natural sounds, water, and the like.

The intervention or treatment in this study refers to attention to the body, in this case, the in and out breath and body sensations. The intervention was given twelve times. (I) given to clients using Muse™ Portable-EEG without brainwave entrainment in odd sessions, compared to (II) given to clients using Muse™ Portable-EEG with brainwave entrainment in even sessions. Measurements are monitored from the Muse® software. The mindfulness intervention used in this study does not fully use a particular approach, such as training courses based on the work of John Kabat-Zinn. However, the intervention was carried out by paying attention to the breath and the body's condition (Lin & Mai, 2018; Stelter, 2009).

3 METHOD

The method used for data collection in this study was a single-subject study with a design type of Alternating treatments with no baseline (without a no-treatment condition) or Type of Serial Treatment without a Pre-test (Richards, 2019). Data evaluation consists of the methods used to conclude changes in behavior. According to (Kleinhans et al., 2021), the fundamental purpose of serial treatment type design is to compare the effects of two more independent variables (treatment) on the same behavior.

Therefore, this is a potentially important design for researchers concerned with which interventional procedures are most effective. In applied research, where a single case design is used, experimental and therapeutic criteria are used to evaluate the data (Gehart, 2012). Experimental criteria refer to how data is evaluated to determine whether an intervention has an enforceable or verifiable effect on behavior. Experimental criteria are based on comparing behavior under different conditions, usually during the intervention and non-intervention (baseline) phases. The experimental criteria have been met to the extent that performance varies under these different conditions.

The therapeutic criterion refers to whether the effect of the intervention is significant. This criterion requires comparing the behavior change achieved and the level of change required for the client to function well in society. Even if behavior changes are feasible and related to experimental interventions, they may not be clinically or impliedly significant. To achieve therapeutic criteria, interventions must make essential changes in the client's daily functioning.

Data collection begins with a consultation in guidance and counseling sessions. Then treat them personally using mindfulness techniques—odd sessions without brainwave entrainment and even sessions using Muse's™ built-in brainwave entrainment. The researcher records body movements (if any) in the middle of the session. This counseling is part of implementing the Buddhist Guidance and Counselling Model (Girivirya, 2021). At the end of the session, the researchers interviewed post-treatment conditions.

4 RESULTS AND DISCUSSION

4.1 Measurement Results of Muse™

At the end of each session, the researcher opens the

client data. The intervention is carried out by (I) the client's odd session not using a headset (S1, S3, S5, S7, S9, S11); (II) in an even session, the client uses a headset to hear brainwave entrainment sounds (S2, S4, S6, S8, S10, S12). The sound of birds indicates the depth of the client's relaxed state while maintaining awareness of the breath going in and out. The results of the subject intervention are described as illustrated in the following chart by the point of calm.

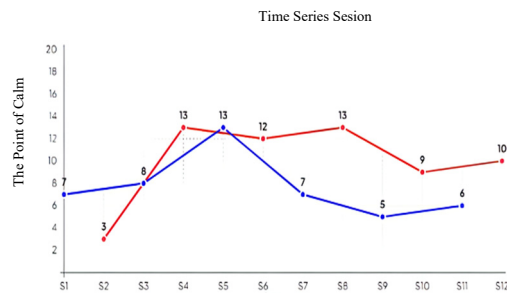


Figure 1: The Result of Intervention from Sessions 1-12.

4.2 Discussion

The advent of portable electroencephalography (p-EEG) or mobile(m-EEG) has created a means for collecting large-scale neural data. Thus, providing deeper insight into a phenomenon such as cognitive fatigue. According to (Krigolson et al., 2021), cognitive fatigue—an exaggerated nervous state with an increased incidence of incorrect performance—is responsible for everyday accidents that can sometimes claim human lives. To gain better insight into cognitive fatigue in the study, they tested the relationship between perceived fatigue and human event-related brain potentials (ERPs) and electroencephalographic oscillations (EEG) in 1,000 people. As a secondary objective, they further demonstrated m-EEG's ability to measure ERPs and EEG data accurately.

Many portable electroencephalographic (EEG) systems have been available to researchers in recent years. However, until recently, validation using low-cost EEG systems has been mounted on continuous EEG data or replication of large EEG system settings penning events to perform event-related checks (ERPs). Nowadays, it is even effortless to use by those unfamiliar with neuroscience. In this study, researchers used the first generation of Muse™ to help clients with problems.

Specifically, (Krigolson et al., 2017) report the results of two experiments using data collected with the MUSE EEG system—one using the well-known visual oddball paradigm and the other using a

standard reward-learning task. The results show that from the study, observing and measuring the ERP components N200 and P300 in the eccentric visual task and positive imbalance (component opposite to negative feedback) in the reward learning task is possible. In particular, single-sample t-tests for the presence of components (all $p < 0.05$), calculation of credible Bayesian intervals, and 95% confidence intervals all statistically verified the presence of N200, P300, and positive payoffs in all analyses. They provide the research papers as an open-source website with all the instructions, methods, and software to replicate the findings and to provide researchers with an easy way to use the MUSE EEG system for ERP research. Importantly, our work monitors that one can efficiently perform ERP with a single computer and a portable EEG system such as MUSE. Thus, expanding ERP methodologies to new contexts is very likely.

Different from these studies, this research was carried out thoroughly. The single subject, whom we call the client in this study, complains of difficulty sleeping, post-stroke, living in a new environment, and isolation due to the co-19 pandemic. As shown in Figure 1, the treatment given to clients in odd sessions, without using brainwave entrainment, shows a lower state of calm (relaxation) than mindfulness using brainwave entrainment. These results are supported by research on the benefits of using brainwave entrainment concerning mental health (Collura & Siever, 2009; Dickson & Schubert, 2019; Schmid et al., 2020, 2021; Will & Berg, 2007).

A systematic Review by (Dickson & Schubert, 2019) says that some studies point to design flaws that might limit people's understanding of how music affects sleep. The most common problems identified were assumptions about music that were relaxing, catchy, or created expectations without ensuring that those assumptions were reasonable. Another issue that arises is the existence of interactions and mediators; with many studies, it is still being determined whether RPR (Six reasons the lead researcher proposed, how music helps sleep was identified in the literature) can fully explain why music can improve sleep quality. For example, they identified RPR that tended to operate like others, such as relaxation-mediated pleasure or distraction. It is crucial to present a broad and simplistic set of potential explanations for how music might help sleep as it reflects the state of the (somewhat limited) research and sets out vast possibilities that could lead to more valuable research without compromising credible RPR that has not yet been conducted tested through a well-founded methodological study.

Regardless of the Review. While the results of this study, for this client, apart from the results showing more silence from the Muse™ monitor. They were also demonstrated by observation and interviews after the session. Clients say that they are more comfortable listening to brainwave entrainment than without using brainwave entrainment. Likewise, observations during treatment sessions show fewer body movements when using brainwave entrainment. Similar to the results of this study, (Collura & Siever, 2009) shows a large and growing body of research and clinical experience demonstrates that Audio-visual Entrainment (AvE) quickly and effectively modifies conditions of high autonomic (sympathetic and parasympathetic) activation and over- and under-aroused states of mind, bringing about a return to homeostasis. AvE exerts a powerful influence on brain/mind stabilization and normalization through increased cerebral flow, levels of certain neurotransmitters, and by normalizing EEG activity. AvE is a safe and cost-effective treatment for many central and autonomic nervous system dysfunction disorders.

5 CONCLUSIONS

Reflecting on this research, mindfulness with the help of brainwave entrainment tends to help clients with post-stroke comorbidities become more relaxed and sleep better at night. The monitoring results of Muse™ measurably demonstrate this condition. Researchers do not use this as an independent technique. But in the part of special counseling sessions (one-on-one). However, researchers, or at the same time as counselors can carry out follow-up care to provide an understanding of behavior related to awareness, acceptance, and changes in post-stroke situations and conditions. The portable-EEG device and the Muse® application assist therapists and clients independently who show a trend of increasing quiescence with each session, primarily in brainwave entrainment on the Muse® apps, which provides bird sounds and the sound of the wind as reminders.

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AUTHOR CONTRIBUTIONS

The conceptualization of Model of Buddhist Counseling and Guidance and Analysis, S.G. and P.S.; Counselor, S.G.; Methodology Review, S.M., and R.I.; Data Collection, Review, and Analysis, S.

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Approval of Multimedia Performing Arts as a Revitalization Product of the *Ambu Hawuk* Myth in the Form of Multimodal Texts

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Keywords: Approval, Multimedia Performing Arts, Revitalization Product, *Ambu Hawuk* Myth, Multimodal Texts.

Abstract: This study attempts to identify and analyze aspects of the acceptability of multimodal text teaching materials in the form of the *Ambu Hawuk* multimedia performing arts as a product of oral literature revitalization. This is done to find out the form of multimedia teaching materials received by the education community in which there is a crystallization of cultural values from oral literature. The research model used is the simplified UTAAUT model in line with the research objectives. The results of the analysis of the model structure show that the relationship between Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, and ICT Usage Habits has a positive influence on Attitude Towards ICT. Meanwhile, Perceived Learning Opportunities have no effect on Attitude Towards ICT.


1 INTRODUCTION


The use of technology to develop multimedia performing arts in this study is the estuary of the process that defines efforts to revitalize oral literature by utilizing technology. Its concreteness lies in the production of multimodal texts which crystallize cultural values through the use of technology (Putra et al., 2022, 2023). Technology as part of modern life is basically a necessity. This is because technology influences people's lifestyles a lot as evidenced by the use of technology in various aspects of people's lives (Bendi & Andayani, 2013; Frost, 1999; Mahende & Jasruddin, 2017; Nasir, 2013). Based on this, it is unfair if we think that technology plays an important role in undermining national identity. Technology should be a means to bridge revitalization and language education and learning.


The existence of multimodal texts has an important role related to the use of verbal language as teaching material which is considered a learning problem (Kress, et.al., 2001; Moreno & Mayer, 2007). In this regard, the issue of multimodality is of great interest to academics, as indicated by a large number of books and journals on multimodal texts

and their research (Jewitt, 2016). This is based on the fact that today's society lives as a multimodal society, a society that produces the meaning of life experience through language, images, gestures, actions, sounds, and other resources. Society always presents texts in a multimodal form by utilizing and combining the resources of various semiotic systems (Baldry & Thibault, 2006; O'Halloran et al., 2010). In this regard, technology makes it easy to produce text and provides broad access to consuming text.

The use of multimodal text teaching materials that contain oral literature is in line with efforts to revitalize oral literature, myth is one of them. In this regard, revitalization is basically an effort made to revive the existence of oral literature in the midst of people's lives that accept foreign cultures along with the influx of new knowledge and bring modernity to life. This is done by maximizing the potential of oral literature through the creation of improvised spaces by presenting them in a more modern form (Amir, 2013; Sibarani, 2012). Revitalization is carried out so that ethnic wisdom as part of cultural wealth does not disappear with the death of tradition (Amir, 2013; Godoy, 1998; McDade, 2007; Reyes-García, et.al., 2005; Reyes-García, et.al., 2007; Ross, 2002; Rusyana, 2006; Sibarani, 2012).

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Multimodal is a term used for a way of communicating using different semiotic modes at the same time to strengthen and complete certain information structures. Multimodal is used as a technical term that aims to show the process of interpreting information by utilizing a variety of semiotics or semiotic events simultaneously and certain ways of combining these semiotic modes. Multimodal is considered a source of verbal and visual semiotics that can be used to realize the types and levels of dialogic involvement in a text (Chen, 2010; Iedema, 2003).

This study aims to determine the acceptability of the revitalization product of the *Ambu Hawuk* myth as teaching materials in the form of multimodal texts that integrate various modes in the form of language, images, gestures, actions, sounds, and other resources as a unitary social semiotic system. The product of the revitalization of the *Ambu Hawuk* myth in this study is a multimedia performing artwork in the form of a poetry musical performance that is produced through a process of reconstruction, refunctionalization, representation, reform, reinterpretation, reorientation, and recreation with the steps of introduction, documentation, transfer, and dissemination (Durachman, 2016; *KBBI*, 2013; Sibarani, 2012; Sumiyadi, 2016). Concretely, the myth of *Ambu Hawuk* underwent two transformations, namely the transformation of spoken texts into poetry texts and poetry texts into multimedia performing arts texts (Putra et al., 2023).

The analysis model used in this study is the Unified Theory of Acceptance and Utilization of Technology (UTTAUT) model. The Unified Theory of Acceptance and Utilization of Technology (UTTAUT) model is a development of the Technology Acceptance Model (TAM). The UTTAUT model is built from a combination of eight acceptance models namely Theory of Reason Action (TRA), Technology Acceptance Model (TAM), Theory of Planned Behavior (TPB), Combined TAM and TPB (C-TAM-TPB), Innovation Diffusion Theory (IDT), Social Cognitive Theory (SCT), Motivational Model (MM), and Model of PC Utilization (MPCU). The aspects that become indicators in this analysis are Performance expectancy, Effort expectancy, Social influence, Facilitating conditions, Perceived learning, Attituded towards ICT, and ICT usage habits (Bendi& Sri A., 2013; Liebenberg et al., 2018; Mahende & Jastruddin, 2017; Nasir, 2013; Sedana&st.Wisnu W., 2009; Taiwo & Downe, 2013; Venkatesh et al., 2003, 2012).

The UTAUT model is an integrated model developed based on a cognitive social theory with a combination of eight leading research models regarding the acceptance of information technology (Taiwo & Downe, 2013). The UTAUT model has proven successful out of eight other technology acceptance theories in explaining up to 70% of user variance (Nasir, 2013; Taiwo & Downe, 2013).

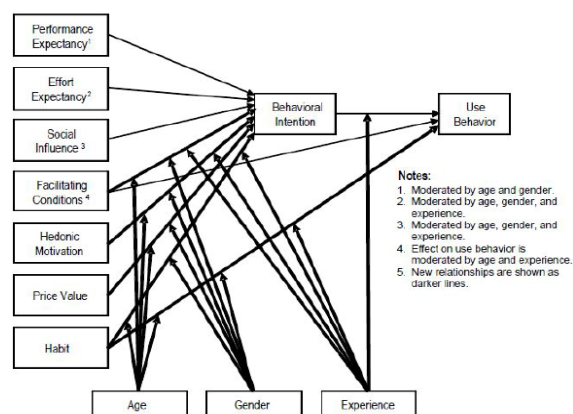


Figure 1: UTTAUT Model (Venkatesh et al., 2012).

The UTAUT model (Venkatesh et al., 2003) then underwent development with the addition of several variables (Venkatesh et al., 2012). The old UTAUT model has four key constructs, namely: performance expectancy, effort expectancy, social influence, and facilitating conditions which have an influence on behavioral intentions to use technology.

2 METHOD

This study uses the UTAUT model which was adapted from the UTAUT 2 (figure 1) model through simplifications as shown below.

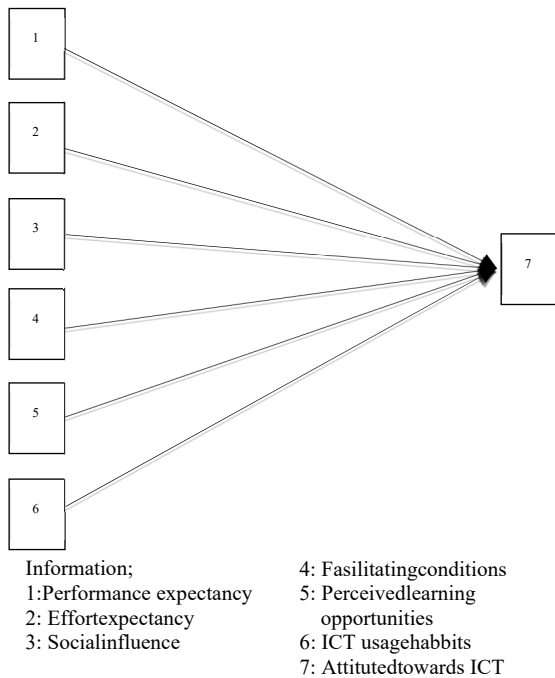


Figure 2: Model UTtauT.

The data used in the UTtauT study were obtained based on the results of a questionnaire distributed to 200 respondents via Google Forms. The sampling method uses the Proportionate Stratified Random Sampling method. Respondents in this study were students of the Indonesian Language Education study program at several universities and Indonesian language subject teachers in West Java. The scale used is a 5-point Likert scale namely; Strongly Agree, Agree, Doubtful, Disagree, and Strongly Disagree.

Analysis of the measurement model (outer model) was carried out through four stages of testing, namely individual item reliability, internal consistency reliability, average variance extracted, and discriminant validity (F. Hair Jr et al., 2014; Henseler et al., 2009; Urbach & Ahlemann, 2010; Yamin & Kurniawan, 2011).

Individual Item Reliability Test: This test is carried out by looking at the value of the standardized loading factor. This value illustrates the magnitude of the relationship between each indicator and its construct. A loading factor value above 0.7 can be said to be valid as an indicator that measures constructs (Afthanorhan & Asyraf, 2013; F. Hair Jr et al., 2014; Henseler et al., 2009; Urbach & Ahlemann, 2010; Yamin & Kurniawan, 2011). It can be seen from table 1 that all items have a loading factor above 0.7 so it can be said that all indicators are valid for use in the research model.

Table 1: Loading Factor Test Results with Smart PLS.

	AT	EE	FC	PE	PLO	SI	UH
AT1	0,782						
AT2	0,768						
AT3	0,719						
AT4	0,801						
EE1		0,796					
EE2		0,806					
EE3		0,703					
FC1			0,845				
FC2			0,727				
FC3			0,851				
PE1				0,856			
PE2				0,854			
PE3				0,787			
PLO1					0,816		
PLO2					0,881		
PLO3					0,840		
PLO4					0,890		
SI1						0,810	
SI2						0,865	
SI3						0,833	
SI4						0,877	
UH1							0,810
UH2							0,777
UH3							0,776

Table 2: Composite Reliability Test Results with Smart PLS.

	Composite reliability (rho c)
AT	0,852
EE	0,813
FC	0,850
PE	0,872
PLO	0,917
SI	0,910
UH	0,831

Table 2 also shows that all CR values are above 0,7 so it could be concluded that all variables meet the requirements for use and there are no problems in the composite reliability test.

Average Variance Extracted: This test is carried out by looking at the average variance extracted (AVE) value. This value describes the magnitude of the variance or the diversity of manifest variables (indicators) that can be contained by latent variables (constructs). A minimum AVE value of 0.5 indicates a good measure of convergent validity (Afthanorhan & Asyraf, 2013; F. Hair Jr et al., 2014; Henseler et al., 2009; Urbach & Ahlemann, 2010; Yamin & Kurniawan, 2011).

That is, the latent variable (construct) can explain on average more than half of the variance of the indicators.

Table 3: Results of the Average Variance Extracted Test with Smart PLS.

	AT	EE	FC	PE	PLO	SI	UH
AT1	0,782	0,434	0,266	0,561	0,562	0,332	0,332
AT2	0,768	0,517	0,341	0,588	0,510	0,252	0,301
AT3	0,719	0,488	0,288	0,496	0,465	0,234	0,354
AT4	0,801	0,811	0,409	0,548	0,429	0,269	0,287
EE1	0,480	0,796	0,267	0,483	0,368	0,302	0,219
EE2	0,565	0,806	0,221	0,607	0,545	0,151	0,267
EE3	0,391	0,703	0,217	0,406	0,360	0,332	0,330
FC1	0,273	0,182	0,845	0,236	0,148	0,283	0,190
FC2	0,412	0,323	0,727	0,447	0,336	0,251	0,193
FC3	0,298	0,185	0,851	0,237	0,152	0,269	0,194
PE1	0,623	0,626	0,356	0,856	0,631	0,283	0,147
PE2	0,648	0,526	0,354	0,854	0,536	0,348	0,262
PE3	0,501	0,491	0,304	0,787	0,579	0,354	0,251
PLO1	0,536	0,464	0,214	0,552	0,816	0,298	0,385
PLO2	0,572	0,542	0,262	0,625	0,881	0,301	0,264
PLO3	0,518	0,395	0,217	0,589	0,840	0,230	0,268
PLO4	0,568	0,518	0,285	0,618	0,890	0,286	0,242
SI1	0,261	0,209	0,244	0,348	0,250	0,810	0,161
SI2	0,325	0,314	0,306	0,338	0,303	0,865	0,198
SI3	0,289	0,226	0,289	0,321	0,227	0,833	0,162
SI4	0,319	0,334	0,284	0,322	0,316	0,877	0,220
UH1	0,359	0,245	0,168	0,180	0,223	0,167	0,810
UH2	0,319	0,324	0,300	0,305	0,361	0,233	0,777
UH3	0,296	0,253	0,100	0,132	0,214	0,119	0,776

	Average Variance Extracted (AVE)
AT	0,590
EE	0,592
FC	0,655
PE	0,694
PLO	0,735
SI	0,717
UH	0,621

From table 3, we can conclude that all AVE values have a value greater than 0.5 so that it can be said that all variables meet the requirements for use and there are no problems in the AVE test.

Discriminant Validity: This test is carried out with two stages of cross loading examination, namely cross loading between indicators and Fornell-Lacker's cross loading (Subiyakto et al., 2014). Examination of the cross loading of each indicator is carried out by comparing the relationship between the indicator and its construct and other block constructs. If the correlation between the indicator and the construct is higher than the correlation with other block constructs, this indicates that the construct predicts the size of their block better than the other

blocks (Afthanorhan & Asyraf, 2013; F. Hair Jr et al., 2014; Hair et al., 2012; Henseler et al., 2009).

Examination of Fornell-Lacker's cross loading was carried out by looking at the root AVE value which must be higher than the correlation between the construct and other constructs (Afthanorhan&Asyraf, 2013; F. Hair Jr et al., 2014; Hair et al., 2012; Henseler et al., 2009; Subiyakto et al., 2014; Urbach&Ahlemann, 2010; Yamin& Kurniawan, 2011).

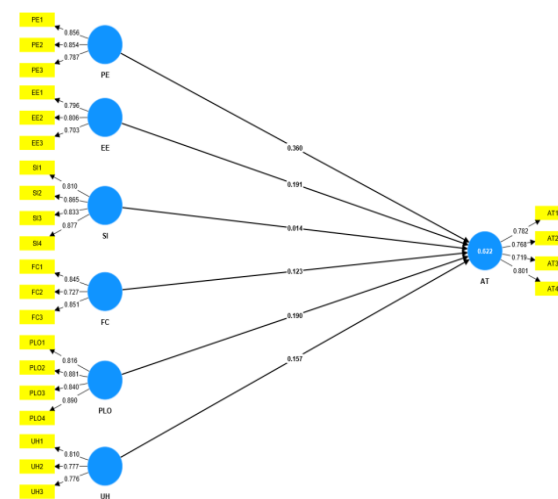


Figure 3: Analysis Model.

3 RESULTS AND DISCUSSION

3.1 A Myth of *Ambu Hawuk*

Based on the results of ethnographic research, *Ambu Hawuk's* myth is obtained in the form of speech from several sources. The speech obtained is in the form of fragments that need to be combined into a whole unit. This causes the process of revitalizing myths needs to be reconstructed.

Ambu Hawuk's myth is a myth that tells a sacred figure but is also believed to be a "hawuk" or dark figure due to his black magic mastery. In a myth that is the basis of writing *Ambu Hawuk* poetry represents the contents of the myth that breaks all the assumptions about the figure of *Ambu Hawuk* as a figure "Hawuk." The myth of *Ambu Hawuk* represented by *Ambu Hawuk* 1 poem also reflects how the Sundanese human figure mastered the supernatural powers whose black or white classification lies in how to use them. Is it for good or badness to society? The figure of *Ambu Hawuk* who in the myth is told as a member of the kingdom who

does not get his rights as a member of the kingdom. At present, it is said that the figure of *Ambu Hawuk* often appears in the form of a giant bat that is perched on a monument in the area around Rumantak Galunggung Tasikmalaya. *Ambu Hawuk's* speech is a folklore that comes from the Galunggung community and develops in the past, it is also a characteristic of every nation (Sundanese society) that has a cultural culture. *Ambu Hawuk's* speech said how *Ambu Hawuk* figures in Galunggung. *Ambu Hawuk's* speech is an expression of the literary Galunggung community that is spread orally and is closely related to the collective memory of the traditional arrangement of Galunggung while still in the form of a kingdom. The contents of the speech are anonymous and adventurous and are distributed for a long time among the Galunggung community.

The above proves that *Ambu Hawuk's* speech is folklore in line with several conceptions. Folklore is a story that comes from society and develops in society in the past, also a characteristic of every nation that has a cultural culture. Folklore tells about an event in a place or the origin of a place. The characters that are raised in folklore are generally manifested in the form of animals, humans, and gods (Gusnetti, 2015, p. 184). Folklore can be interpreted as an expression of literacy of citizens of a culture whose delivery and distribution are spread orally that are directly related to various aspects of the culture and the social values of the community (Hutomo, 1983, p. 8). Folklore is one of the literary works that are born, lived, and develop several generations in traditional society, whether the community has known letters or not, is spread verbally, contains adventure, is anonymous, and is spread between certain collectives in sufficient periods long.

Ambu Hawuk folklore is a story that contains education about how we use knowledge in life. The figure of *Ambu Hawuk* as a knowledgeable human being or magic indicates how he uses it when meeting with good humans and evil humans. One time he will use it as a path of virtue but it is not impossible to use in the path of faintness, depending on who rubbed it against him. This is in line with the results of the study of Dorji (2009) which states that folklore is a story that grows in the community itself. Folklore is a history that reflects the community where folklore is born. Folklore has traditional values which are the most important part of folklore consisting of; (1) good thoughts or intentions; (2) reply to kindness; Obedience to parents; (3) karma law; and (4) love of goodness.

Ambu Hawuk folklore is a myth. This is in line with the opinion of Malinowski (Bascom, 1954, p. magical. Legend is shopped by humans, although sometimes they have extraordinary qualities and are often assisted by magical creatures. The place of occurrence is the same as what we know because the time of occurrence is not too past (Danandjaya, 1994, p. 50). While another division of folklore is Mite (Myth), folklore that is considered truly happening and is considered sacred by the owner of the story, stated by the gods or half-god creatures. Events in Mite occur in a world that is not what we know today and happened in the past, and fairy tales (folktales) are people's prose that is not considered to happen. Fairy tales are told for entertainment, although many describe the truth, contain lessons (morals), or even satire. *Ambu Hawuk* folklore as a myth can be proven by the trust of some people who believe that *Ambu Hawuk* still often appears today in the form of a giant bat. Folklore is essentially a part of oral literature which is dichotomically divided into oral literature performances and not performances. Oral literature in the form of performances is complex and involves many people because it consists of kickers, instrument players, dancers, and even dialogue carriers. The complexity of the show is determined by the genre of oral literary performances delivered. Oral literature is composed, composed, and delivered verbally through a show. At the show, the performer, the text, and the connoisseur community met in physical and aesthetic meaning. The text in this case becomes the realm of an aesthetic meeting of performers and the community (Amir, 2013).

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appears in oral form(Literature Transmitted Orally/Unwritten Literature), (Francis Lee, in (Dundes, 1965)). In addition, the myth of *Ambu Hawuk* is also a narrative oral literature. This is in line with the conception of oral literary forms as narrative oral literature and not narrative. The form of narrative oral literature in the form of poetry, drama, and prose. Oral literature in the form of non-narrative such as songs, puzzles, humor texts, and *jampi-jampi* shamans when treating sick people and others (Pudentia, 1998).

The myth of *Ambu Hawuk* exists orally among the Sundanese people, especially in Galunggung. This proves that *Ambu Hawuk's* myth has an oral cultural reference and is an essential dimension. In cultural products, *Ambu Hawuk's* myth can be categorized as an oral tradition because it has four dimensions (Pudentia, 1998; Sibarani, 2012; Sukatman, 2009), namely; (1) Littleness; proven by its existence orally; (2) language; proven by the main media to inherit it through spoken language;(3)literature; Evidenced by the existence of the nature of Dulce et Utile in the myth of *Ambu Hawuk*; and(4)have cultural values; Evidenced by the existence of a story that states the necessity of maintaining the order of life that's should be adjusted to the cultural order of the past.In addition, the myth of *Ambu Hawuk* has two main characteristics of oral traditions, namely the characteristics of the traditions and the characteristics of the viciousness.Characteristics of *Ambu Hawuk* Myths are: (1) Speech is accepted from the previous generation; (2) fixed and recurring patterns;and(3)the separation turned into a story that was told again.While the characteristics of the illegal in the myth of *Ambu Hawuk* are: (1) speech in the oral medium; (2) many sentences are incomplete components; (3) there is an implicit explanation; and (4)there are parts that are repeated (Rusyana, 2006; Sukatman, 2009).

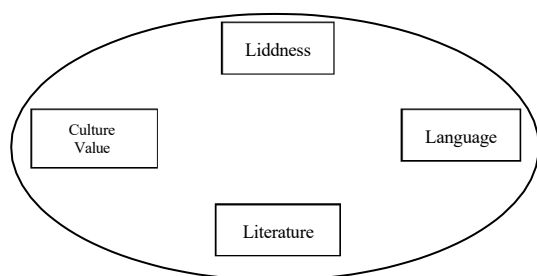


Figure 3: Dimensions of Oral Traditions in *Ambu Hawuk* Myth.

*Ambu Hawuk's*myth is a cultural product inherited by the Galunggung community generation for more

than two generations.This is evidenced by the linkages of *Ambu Hawuk's* myth with the Kingdom of Galunggung that existed in Galunggung in the year of 1111 AD (seen from the incident or incident of strengthening the Defense of the Kingdom of Galunggung by *Batari Hyang* based on the Inscription *Geger Hanjuang*). Although the story of *Ambu Hawuk* is not explained in detail about when he exists. *Ambu Hawuk's* myth is a message of the past in the form of utterances that are passed down to the next generation. *Ambu Hawuk's* myth contains problems about life in the Galunggung community regarding the famous "*Ambu*" figure. This proves that *Ambu Hawuk's* myth is an oral tradition in the form of a past message spoken from generation to generation (Danandjaya, 1994; Vansina, 1985).

Ambu Hawuk myth can be categorized as folklore. This is due to the similarity with the concept and characteristics of folklore. Folklore is a tradition owned by a group of people with certain identification characteristics and cultural wealth in the community. *Ambu Hawuk's* myth is a myth that once existed in Sundanese society, especially in Galunggung. This myth also has the characteristics of being spread orally,being traditional,developing in the versions, having patterns, being anonymous, collectively useful, paralegals and collective, and reflects the value of honesty so that it is in line with 9 features of folklore. Whereas the form of *Ambu Hawuk* myth is oral folklore as evidenced by its oral existence (Danandjaya, 1994; Endraswara, 2009).

3.2 Cultural and Social Value in *Ambu Hawuk* Myth

Cultural values are the values possessed by a group of people through the process of planting and or agreement naturally. Cultural values are rooted and reflected through beliefs and habits and also sometimes reflected in symbols that are typical and can be distinguished from symbols in society or other organizations as guidelines for behavior and responses to events that have been, moderately, or will occur. Cultural values can also be instilled verbally or in writing from the generation above to the generation below.

Ambu Hawuk's myth is a myth that tells a figure that is sacred but is also believed to be a "*hawuk*" or dark figure due to his supernatural powers mastering black magic. In a myth that is the basis of writing *Ambu Hawuk* 1 poetry represents the contents of the myth that breaks all the assumptions about the figure of *Ambu Hawuk* as a figure "*Hawuk*." The myth of *Ambu Hawuk* represented by *Ambu Hawuk* 1 poem

also reflects how the Sundanese human figure mastered the supernatural powers whose black or white classification lies in how to use them. Is it for good or badness to society? This becomes a belief that is embedded in the Galunggung community roots to bring up polite, and humble attitudes but will become fierce when they feel disturbed. These attitudes and behaviors have been studied since childhood by the Galunggung community so that the attitudes and behaviors are flesh and are lasting and are not replaced by other cultures. On the other hand, the attitude and behavior guidelines are beneficial to the Galunggung community itself to maintain threats from outside. This finding is in line with the analysis of F. Boas (Bascom, 1954) of the Tsimshian myth based on the words of Herskovits that folklore substantially is more than just a literary expression of society.

The reality above is in line with some conceptions of cultural values. The cultural context in folklore is something important about the depiction of community attitudes and beliefs (Bascom, 1954). Culture is seen as something complex and full of meaning, beliefs, practices, symbols, norms, and values that are generally accepted in society. Cultural values emphasize more on the form and justification of individuals or groups of beliefs, actions, and goals. Orientation of cultural values develops in a society that faces problems in regulating human activities (Schwartz, 2006). Cultural values become a reference for the behavior of the majority of members of the community concerned, are in their minds, and are difficult to explain rationally. Cultural values are lasting, and not easily changed or replaced with other cultural values (Setiadi & Usman K., 2011). Cultural values consist of concepts about everything that is considered valuable and important by the citizens of a society. Cultural values can function as a guideline for the lives of the citizens concerned. The cultural values adopted by the community are values as a guide to life in society (Koentjaraningrat, 2002).

The explanation above emphasizes the understanding of cultural values that refer to the good and bad behavior of people based on values that are used as guidelines for life. This life guideline concerns human nature about oneself, other humans, nature, and its creator. The values of life in a society that are used as guidelines in social life for the Galunggung community based on the myth of *Ambu Hawuk* are,

1. Family value. *Ambu Hawuk's* myth reflected the value of kinship which indirectly invites the Galunggung community, especially to take care of harmony and harmony in society. Togetherness to in still the values of goodness is used as a means

of unifying.

2. Religious Value. The myth of *Ambu Hawuk* reflected in religious values for the Galunggung community to follow the teachings of their religion well. Because religious teachings always teach goodness, virtue, and wisdom. This is described through recommendations to carry out consistent and joint worship activities so that everyone can be followed.
3. Community value. Through the myth of *Ambu Hawuk*, the social value that arises is the value to strengthen relations between society to maintain the life order of ancestral heritage by prioritizing the attitude of compassion. Do not always believe in the news of confusion that discredited one of the parties to always be awake from bad thoughts and corrupted the system of life.
4. Political Value. Through the myth of *Ambu Hawuk*, the political value that can be interpreted is the existence of an effort of the Galunggung community to maintain security against the threat of people outside Galunggung. This *Ambu Hawuk* myth indirectly also implies a figure who will participate in maintaining peace for the Galunggung community.
5. Educational Value. Through the myth of *Ambu Hawuk*, the value of education is implied to mature and educate the Galunggung community. Through the figure of *Ambu Hawuk* who is told to have a "*hawuk*" figure but always presents positive things to the community as a whole, one of which is through prayer.

The social value of Sundanese society is a process of determining good or bad, appropriate or inappropriate, through the weighing process. Sundanese culture is one of the oldest cultures in the archipelago. "Sundanese culture is a culture that grows and lives in Sundanese society. Sundanese culture is known as a culture that upholds courtesy. In general, the character of the Sundanese society is cheerful, friendly (*soméah*), smiling, weak, and very respectful towards the elders. That is the cultural mirror of the Sundanese community" (Gloriani, 2015) The teachings in Sundanese culture about the path to the virtues of life are manifested in the character of Sundanese such as *cageur*, *bageur*, *singer*, *jeungpinter*, which can be interpreted that Sundanese people must have healthy characters both physically and spiritually, their behavior, skilled in living life, and many other skills to increase mind capacity. The traditional spiritual belief of Sundanese society is *Sunda Wiwitan* which teaches the harmony of life with nature.

In general, the people of West Java or Sundanese are known as a gentle, religious, and very spiritual society, this trend is visible in the Pameo *Silih Asih*, *Silih Asah*, and *Silih Asuh*; Loving each other (prioritizing the nature of compassion), mutual perfecting or improving themselves (through education and sharing knowledge), and protecting each other (maintaining salvation). In addition, Sundanese people also have several other values such as politeness (*handapasor*), humility to others, respect for the older, and love for the younger (*hormatkanuluhur, nyaahkanuleutik*) Those who need it and who are in trouble (*nulung ka nu butuh nalang ka nu susah*). In Sundanese culture, the magical balance is maintained by conducting traditional ceremonies, while the social balance of the Sundanese community is cooperation to maintain it (Gloriani, 2015). The mindset of the Sundanese people is known as *Tritangtu*. The composition of this *tritangtu* is the *tekad*, *ucap*, and *lampah* that are parallel to lives, *raga jeung papakean* (clothing). This Sundanese philosophy gives the meaning that if his determination is true and good, his thinking is true and good, then his actions will be true and pretty decent. Conversely, if his determination is not good, even though he has a stable mind capacity, the results are still not good. All three are united in the law of causality. (Sumardjo, 2011) further explains about this *tritangtu* that Sundanese people symbolize the sky as water, humans as stones (which can be built in writing, mind), and earth as land. Thus there is a unity of nature between heaven, human, and earth. The meaning of that all is the fabric of the pattern of relations between humans and other humans, human relations with God, and the relationship between humans with the universe.

The above opinion emphasizes that Sundanese society has a philosophy of the relationship between humans and God who created themselves and the universe, the relationship between humans and other humans, and the relationship between humans and the natural surroundings. The sky created by God is the source of the origin of water as a fortune given by God to humans. Water descends to earth (soil) fertilizing all plants that can be used for human needs. And humans who live on earth can be formed according to the needs and conditions of the surrounding nature. These three things, namely heaven, human, and earth interrelated and influenced each other.

3.3 Creative Process of Transformation the *Ambu Hawuk* Myth

The form of multimedia performance art in this study is a musical performance of poetry which is visualized through several other works of art such as poetry readings, painting, dance, and dramatization art. The text of the poem and its composition in the form of musical poetry become the center of the artwork created based on the mythical content of *Ambu Hawuk*. Therefore, in the creative process of transforming the oral text of *Ambu Hawuk's* myth, priority is given to it into a poetic text which is continued in its composition to become a musicalization of poetry. The entire creative process can be visualized in the following chart.

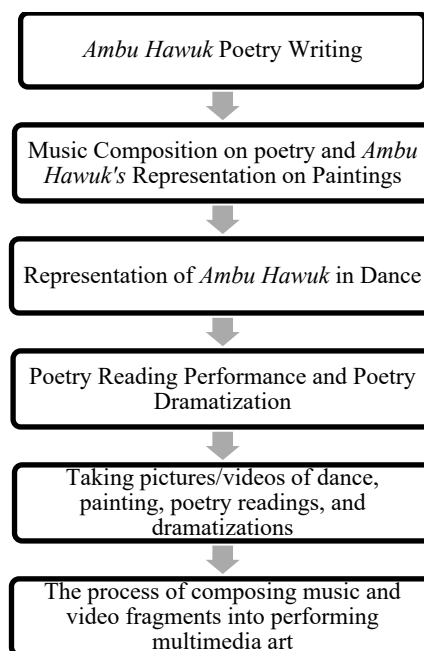


Figure 4: The Sequence of the Creative Process of Transformation the *Ambu Hawuk* Myth.

The creative process of transforming the *Ambu Hawuk* myth is a creative process that focuses on extracting ideas based on mythical content that has been explored and analyzed in ethnographic research. The creative process is preceded by composing or writing poetry, representing the content and value of the *Ambu Hawuk* myth. Furthermore, the tone composition process is carried out in the poem, referred as the musicalization of poetry. The compositional process coincides with the creative process of representing *Ambu Hawuk* in the form of painting. Furthermore, the creative process continued with the design of the dance concept as a form of

representation of *Ambu Hawuk*, adapted to the poem's musical strains. Furthermore, the creative process continued with designing the concept of poetry reading performances. After everything has been designed, shooting is carried out on stage or off stage.

This video was shot on a different stage in line with the predetermined video composition concept. The first video shot was a dance video taken by Ai Mellyana Agustin, RistaAulia, Imelda Ayu Syaqla Asprilia, Dahlan, Rahma Naila Cahya, Silfa Milatul Istiqomah, and Chelsea Putri Kinanti. The video shooting continued with the painting process carried out by Septia Pahlawan. This video was taken not on the stage, but in a building that had not yet been completed. The shooting was carried out at night and assisted by lighting from the lighting system normally used in performances on stage. The next video shot is a poetry reading by Ai Siti Mardiah. The video was taken in a studio with the help of a lighting system that combines red and yellow light. The aesthetically expressive poetry reading conducted by Ai Siti Mardiah, uses the concept of imagination how to inform the figure of *Ambu Hawuk* as conveyed by the poet text writer through his poetry.

There are two characteristics of the figure of *Ambu Hawuk* which is the source of Ai Siti Mardiah's appreciation: the figure of "white" and the figure of "Hawuk" or "black." From these two figures, Ai Siti Mardiah imagined how she would respond to these two figures, if the "white" figure reflected virtue, then she read the text of the poem in a subtle, respectful, and slightly shady way. On the other hand, when it comes to the figure "Hawuk" or "black", Ai Siti Mardiah reads it with fear as if she is facing a figure that will give her bad luck.

This is also reflected in the gesture that Ai Siti Mardiah shows through her aesthetically expressive poetry reading as a form of artistic representation of the *Ambu Hawuk*'s figure through the text of a poem written by Yana S. Atmawiharja (Putra et al., 2023). The videos above are taken thoroughly or from start to finish. This is done to provide the necessary stock videos for the video composition process to become a complete multimedia performance art. The video composition process uses the Adobe Premiere Pro application in 2021. In the application, the main basis for video composition is the musical track of the composition of poetry by Alfin Nurul Azmi.

This means that the composition of the video fragments in each of the artworks above must be able to represent the content of the musicalization of the poem which will automatically represent the myth of *Ambu Hawuk*. This indicates that not all of the video

fragments taken in each of the artworks above are used in multimedia performance art in the form of poetry and musical performance art (Putra et al., 2023).

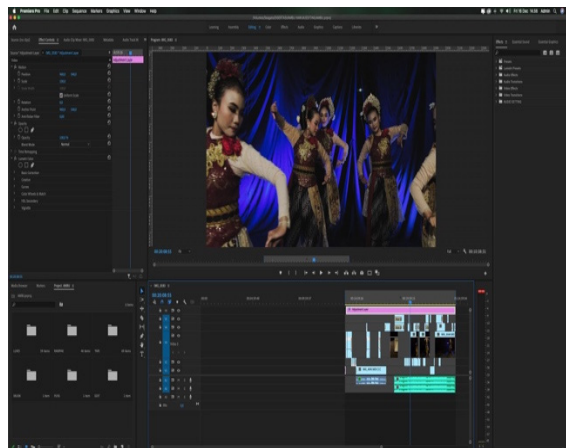


Figure 5: Adobe Premiere Pro 2021 Application for Editing (Putra et al., 2023).

In the video composition process using the Adobe Premiere Pro 2021 application, the first time is to prepare the musicalization track of *Ambu Hawuk* poetry. The next step is combining the components between the poetry musicalization track and the poetry illustration video. In this composition process, the editor selects video illustration materials that are tailored to the needs of the poetry musical track. Each part of the video must be able to represent the musical track of the poem. After the composition process is complete, then the editor will provide color grading to the video (Putra et al., 2023).

As a whole, the musical performance of *Ambu Hawuk* poetry consists of three parts: the opening, the content, and the closing. The opening section is preceded by a narration that introduces the viewer to multimedia performing arts.

The narrative conveyed is about what viewers will watch if they continue to watch multimedia performing arts. Furthermore, the opening section continued with a video of the process of painting and expressive reading of the text of *Ambu Hawuk* poetry. In the content section, multimedia performance art begins with dance and audio of the musicalization of *Ambu Hawuk* poetry. In this section, the *Ambu Hawuk* dance is accompanied by the musicalization of *Ambu Hawuk* poetry. Furthermore, in the closing section, the names of actors who have contributed to this multimedia performance art are displayed (Putra et al., 2023).

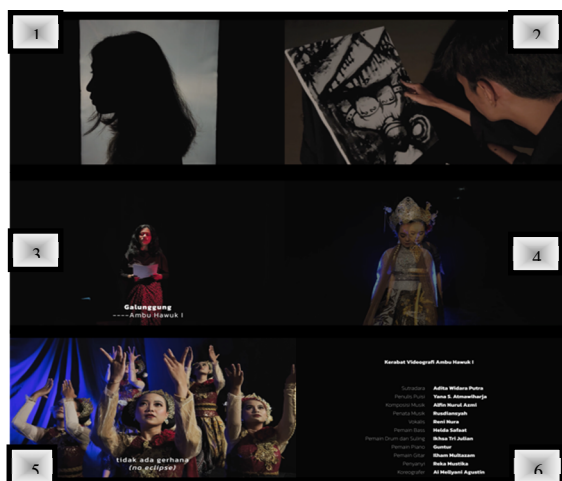


Figure 6: Fragments of Multimedia Performing Arts.

The pictures above represent the video graphics content of the musicalization of poetry as a whole multimodal text. The first image (top left) is a narrator's visualization that leads the appreciator into the content of multimedia performing arts. The second and third images (top right and center left) are visualizations of the opening videography which shows the process of painting and expressive reading of poetry. The fourth and fifth pictures (middle right and bottom left) are visualizations of the video graphics contents featuring dance and musical accompaniment of poetry. While the sixth image (bottom right) is a visualization of the closing part of the videography which displays the actors involved in the process of making videography as a multimedia performing art. Overall, multimedia performing arts in the form of videography of poetry and musical performances lasts 13 minutes and 9 seconds. The whole video tries to collaborate different works of art that represent the contents of the *Ambu Hawuk* myth.

3.4 Results of Model Structure Analysis

Analysis of the model structure was carried out through six stages of testing, namely testing the path coefficient (β), coefficient of determination (R^2), t-test using the bootstrapping method, effect size (f^2), predictive relevance (Q^2), and relative impact (q^2) (Afthanorhan & Asyraf, 2013; F. Hair Jr et al., 2014; Yamin & Kurniawan, 2011). Path Coefficient (β): This test is carried out by looking at the threshold value above 0.1. This means that the intended path has an influence on the model (Afthanorhan & Asyraf, 2013; F. Hair Jr et al., 2014; Hair et al., 2012).

Table 4: Path Coefficient Test Results with SmartPLS.

Variables	AT	EE	FC	PE	PLO	SI	UH
AT							
EE	0,191						
FC	0,123						
PE	0,360						
PLO	0,190						
SI	0,014						
UH	0,157						

It can be seen from Table 4 that the result is that there are five paths that have values above 0.1 which means they have an effect on the model, while one other path shows an insignificant effect, namely SI→AT. Coefficient of Determination (R^2): This test is conducted to explain the variance of each target endogenous variable (a variable that is considered to be influenced by other variables in the model) with a standard measurement of around 0.670 as strong, around 0.333 moderate, and 0.190 or below indicates a high level of variance. weak (Afthanorhan & Asyraf, 2013; F. Hair Jr et al., 2014; Hair et al., 2012; Henseler et al., 2009). The research results had shown that the R^2 value of AT (Attitude toward ICT) is 0.622 (62.2%), thus it can be explained that the ability of the independent to explain the dependent variable AT (Attitude toward ICT) is 62.2%, which means moderate in explaining the dependent variable.

Table 5: T-test results with SmartPLS variable.

	$Q^2_{predict}$	RMSE	MAE
AT	0,580	0,657	0,505

T-test: This test was carried out using the bootstrapping method, using a two-tailed test with a significance level of 5% to test the research hypotheses. The hypothesis will be accepted if it has a t-test greater than 1.96 (Afthanorhan & Asyraf, 2013; F. Hair Jr et al., 2014; Hair et al., 2012). It can be concluded from table 6 that there is one t-test value that is less than 1.96, namely the relationship between the variables SI→AT which has a t-test value of 0.257 in other words, this result shows that of the 6 hypotheses, there is one hypothesis that is not accepted.

Effect Size (f^2): This test was conducted to predict the effect of certain variables on other variables in the model structure with a threshold value of around 0.02 for a small effect, 0.15 for a medium, and 0.35 for a large effect (Afthanorhan & Asyraf, 2013; F. Hair Jr et al., 2014). f^2 is calculated using the following formula. $f^2 = \frac{R^2_{include} - R^2_{exclude}}{1 - R^2_{include}}$

Table 6: Effect Size Test Results with SmartPLS.

Hypothesis		q ²			Information
Numb	Path	Q ² -in	Q ² -ex	Σq ²	
H1	PE → AT	0,580	1,000	-1,000	Small
H2	EE → AT	0,580	1,000	-1,000	Small
H3	SI → AT	0,580	1,000	-1,000	Small
H4	FC → AT	0,580	1,000	-1,000	Small
H5	PLO → AT	0,580	1,000	-1,000	Small
H6	UH → AT	0,580	1,000	-1,000	Small

Table 7: Predictive Relevance Test Results with Smart PLS.

Hypothesis		f ²			Information
Numb	Path	R ² -in	R ² -ex	Σf ²	
H1	PE → AT	0,622	0,715	-0,246	Small
H2	EE → AT	0,622	0,631	-0,024	Small
H3	SI → AT	0,622	0,354	0,709	Large
H4	FC → AT	0,622	0,425	0,521	Large
H5	PLO → AT	0,622	0,641	-0,050	Small
H6	UH → AT	0,622	0,414	0,550	Large

Table 6 shows the f² test for 6 pathways, three of which have a major influence, namely SI→AT, FC→AT, and UH→AT. The rest have little effect.

Predictive Relevance (Q²): This test was carried out using the blindfolding method to provide evidence that certain variables used in the model have predictive relevance with other variables in the model with a measurement threshold above zero (Afthanorhan&Asyraf, 2013; F. Hair Jr et al., 2014; Hair et al., 2012). It can be seen from the research results that Q² of all variables has a predictive relationship, namely, the Q² value of the AT variable is 0.580.

Relative Impact (q²): This test was carried out using the blindfolding method to measure the relative effect of a predictive linkage of a particular variable with other variables with a threshold value of around 0.02 for a small effect, 0.15 for medium/moderate effect, and 0.35 for major influence (Hair et al., 2012). The formula used for calculating q² is as follows.

$$q^2 = \frac{Q^2_{include} - Q^2_{exclude}}{1 - Q^2_{include}}$$

Table 8: Predictive Relevance Test Results with Smart PLS.

	T statistics (O/STDEV)	P values
EE -> AT	3,146	0,002
FC -> AT	2,183	0,029
PE -> AT	4,124	0,000
PLO -> AT	2,298	0,022
SI -> AT	0,257	0,797
UH -> AT	2,720	0,007

Table 8 shows the results from 6 paths. All paths have little effect. Based on the results of the analysis of model measurements carried out by the researcher, the final result of the analysis shows that the measurement model of this research model has fulfilled the requirements and has good characteristics so that it is feasible to proceed to the model structure analysis stage to test the structural model of this research model.

This section will present interpretation and discussion based on the results of the six stages of model structure analysis, namely path coefficient (β), coefficient of determination (R²), t-test using the bootstrapping method, effect size (f²), predictive relevance (Q²), and relative impacts (q²).

The following is a presentation of the results of the analysis carried out by following the research questions and hypotheses that have been formulated previously.

Table 9: Hypothesis Test Results.

Hypothesis		β	T-Test	Information	
Numb	Path			β	T-Test
H1	PE → AT	0,191	3,146	Significant	Accepted
H2	EE → AT	0,123	2,183	Significant	Accepted
H3	SI → AT	0,360	4,124	Significant	Accepted
H4	FC → AT	0,190	2,298	Significant	Accepted
H5	PLO → AT	0,014	0,257	NotSignificant	Not Accepted
H6	UH → AT	0,157	2,720	Significant	Accepted

Based on the results of the analysis of the model structure, the t-test value as can be seen in table 9 shows that the H1 relationship PE → AT is accepted, so it can be interpreted that Performance Expectancy has a positive influence on Attitude Towards ICT. In addition, it is also supported by the results of the path coefficient (β) of 0.191 which means that Performance Expectancy also has a significant effect on Attitude Towards ICT. This shows that the acceptability of multimedia performing arts for learning is supported by the assumption that multimedia performing arts can improve teaching quality, increase productivity, and increase student competence.

The results of the analysis of the model structure, the value of the t-test relationship EE → AT is accepted, so it can be interpreted that Effort Expectancy has a positive influence on Attitude Towards ICT. Besides that, it is also supported by the results of the path coefficient (β) of 0.123 which means that Effort Expectancy also has a significant

effect on Attitude Towards ICT. This shows that the acceptance of multimedia performing arts as teaching materials is due to the assumption that using multimodal texts in learning is easy to do, simplifies the teaching process, and does not require much preparation.

The results of the analysis of the model structure, the value of the t-test relationship SI→AT is accepted, so it can be interpreted that Social Influence has a positive influence on Attitude Towards ICT. In addition, it is also supported by the results of the path coefficient (β) of 0.360 which means that Social Influence also has a significant effect on Attitude Towards ICT. This shows that the acceptance of multimedia performing arts for learning is due to the use of multimodal texts for teaching influenced by those closest to them. In addition, the use of multimodal texts in learning has been suggested and supported by the school.

The results of the analysis of the model structure, the t-test value of the FC→AT relationship is accepted, so it can be interpreted that Facilitating Conditions have a positive influence on Attitude Towards ICT. In addition, it is also supported by the results of the path coefficient (β) of 0.190, which means that Facilitating Conditions also have a significant effect on Attitude Towards ICT. This shows that the acceptance of multimedia performing arts for learning is due to the use of multimedia performing arts that do not require facilities and infrastructure outside of today's educational standards. In addition, the use of multimodal text is considered to be able to make students work in teams.

The results of the analysis of the model structure, the t-test value of the PLO→AT relationship is not accepted, so it can be interpreted that Perceived Learning Opportunities have no influence on Attitude Towards ICT. In addition, it is also supported by the results of the path coefficient (β) of 0.014, which means that Perceived Learning Opportunities do not significantly influence Attitude Towards ICT. This indicates that multimedia performing arts are still considered unable to open up opportunities to teach in new ways, have not opened up opportunities to interact with students, have not contributed opportunities to think creatively, and have not stimulated students to be active, creative, and critical.

The value of the t-test relationship UH → AT is accepted, so it can be interpreted that ICT Usage Habits have a positive influence on Attitude Towards ICT. In addition, it is also supported by the results of the path coefficient (β) of 0.157, which means that ICT Usage Habits also have a significant effect on Attitude Towards ICT. The results of the analysis of

the structure of this model indicate that the acceptance of multimedia performing arts is due to the fact that it is also supported by the habits of the educational community in using ICT in their lives. The educational community has studied and used a lot of technology-based learning media.

4 CONCLUSIONS

The use of technology in learning and the provision of teaching materials that have cultural values are two challenges faced in the 21st-century education era. *Ambu Hawuk's* multimedia performance art is one of the products of revitalization which is assumed to be able to answer these two challenges. In this regard, the UTTAUT model is a useful model for determining the acceptance of the educational community towards *Ambu Hawuk's* multimedia performing arts as a product of oral literature revitalization. The results of the structural model analysis show that Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, and ICT Usage Habits have a positive influence on Attitude Towards ICT. Meanwhile, Perceived Learning Opportunities have no effect on Attitude Towards ICT. This indicates the acceptance of revitalization products which are considered to be able to improve teaching quality, increase productivity, and increase learner competency. On the other hand, the use of multimodal texts in the form of multimedia performing arts in learning is easy to do, simplifies the teaching process, and does not require much preparation. In addition, today's social conditions also influence the use of ICT-based multimodal texts.

Multimedia performing arts are considered not to require facilities and infrastructure that are beyond current educational standards. Besides that, multimedia performing arts are considered to be able to make students work together as a team. The acceptance of multimedia performing arts in learning is also supported by the habits of the education community in using ICT in their lives. However, multimedia performing arts are still considered unable to open up opportunities to teach in new ways, have not opened up opportunities to interact with students, have not contributed opportunities to think creatively and have not stimulated students to be active, creative and critical. Based on the results of the analysis of the model structure in this study, it can be concluded that the steps for transmitting cultural values through the provision of multimodal text

teaching materials based on patterns of revitalization of oral literature by utilizing technology can be said to be appropriate. However, other creations are still needed with regard to understanding teaching strategies in their use to be able to support better educational goals.

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Technology or Educators in the Digital Era: Which One Should Be the Main Prior?

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Keywords: Digital Era, Educator's Role, Technology, Students.


Abstract: The Digital Age demands the optimization of the use of technology in the learning process and the role of educators is increasingly becoming a question of "which role is more needed between technology and educators?" This study looks at the perspectives of students of the Faculty of Tarbiyah and Keguruan Sciences, Kerinci State Islamic Institute, totaling 642 students consisting of 240 men and 412 women about the role that is more needed in learning. The method used in the study was a cross-sectional survey design and the data were analyzed using descriptive data analysis techniques based on gender. Based on survey data 56.07% of women tend to spend more time using technology in learning than men (32%), in dealing with difficulties in learning students both 52.92% of men and 56.07% of women prefer to find solutions using the internet, and in understanding learning materials. Survey data also states that the role of educators is still the main one. Although the survey data says that technology has a significant role in student learning, students admit that the role of lecturers cannot be released because students consider lecturer explanations are still needed to support the use of technology.


1 INTRODUCTION


Today's technological developments influence education, where the integration of technology in learning is needed. (Haif E. Bannayan, Ivan Kalaš, Leslie Conery, Ernesto Laval, Diana Laurillard, Cher Ping Lim, Sarietjie Musgrave, Alexei Semenov, 2011). When teaching these new-age students, teachers need to remain flexible and find new ways to improve their level of education (Handajani et al., 2018). One of them is by utilizing edutainment-based learning models that have the potential to be applied in the current era (Anikina & Yakimenko, 2015). Students born between 1982 and 2000 are categorized as millennials or also known as Gen-Y and are often described as tech-savvy (Best et al., 2013). These


generations have an impact on the transformation of education in the digital era, which is intertwined with the use of technology in everyday life (Hashim, 2018).


The terms used to describe today's learners vary, including Generation X, Net Generation, and Generation Y/Millennial (Oblinger & Oblinger, 2008). The student population crosses all generations with the latest, Gen-Z or Net Generation being very different in their learning characteristics and expectations, (Hashim, 2018). The use of technology can maximize the learning experience for both Millennials because of the common learner-oriented characteristics that they possess (Coyner, 2008). Wesley Lowery & Strauss, (2001) state that the millennial generation is characterized by seven

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common traits and can be considered achievement-oriented, team-oriented, stressed, conventional, confident, sheltered, and privileged. Seeing that the current generation is already living with the influence of technology. The use of technology in net generation learning has variations such as (1) Video Game Edutainment (Handican & Setyaningrum, 2021), (2) Mobile Technology: involves connectivity to download, upload, and/or work online via wireless networks and/or cellular networks (Kukulkska-Hulme et al., 2009); (3) Massive Open Online Courses (MOOCs): an online platform where everyone can sign up as it is free and globally integrated which makes it more interactive (Balfour, 2013); (4) Game dan Gamification: an effective tool for scaffolding concepts and stimulating real-world experiences from an abstract world that presents the unseen. (Laremenko, 2017) (Qamariah et al., 2017); (5) Augmented Reality (AR): technology for adding digital content to printed material objects that are presented in real time and can be accessed anywhere. (Hawkinson et al., 2017); (6) Virtual Reality (VR): the role of memory in learning can improve both affective skills and cognitive skills (Christou, 2010).

The integration of technology in education today has been researched for its effectiveness in improving students' learning outcomes and behavior. For example, empirical findings by (Vasimalairaja et al., 2020) which examines the impact of technology on higher education, research by (Ghavifekr & Rosdy, 2015) which looks at the quality of learning using technology, findings by (Harris et al., 2020) which looks at its effect on learner achievement and motivation, and the findings of the (Sivin-Kachala & Bialo, 2000) which explains that Technology can improve teaching and learning, but simply having technology does not automatically translate into better instructional outcomes. Looking at the use of technology in education, it becomes a question that is there still a need for educators in learning? This new generation challenges the traditional teacher-centered teaching paradigm to be able to learn actively but does not curtail the essence of an educator (Setyaningrum, 2016). However, some empirical findings still see that students tend to be passive in class and teachers tend to be less innovative in teaching. (Ayu Ardani et al., 2018). However, some empirical findings still see that students tend to be passive in class and teachers tend to be less innovative in teaching (Garrett, 2008). These changes require teachers to change to adapt to the needs of the Net Generation era. (Varank et al., 2006). Empirical findings related to the development of technology-based learning in various science subjects such as; (1)

mathematics subject field (Charsky, 2010); (2) physics subject field (Fadieny & Fauzi, 2019); (3) chemistry subject field (Priyambodo & Wulaningrum, 2017); (4) social subject field (Abdelraheem & Al-Rabane, 2005); (5) medicine subject field (Omeng & Priscah, 2016); (6) religious subject field (Roth, 2017). This article will discuss the net generation's perception of students' preferred learning needs between technology and educators. In addition, it also discusses the potential effects of the loss of the role of an educator in this day and age influenced by learning technology. The importance of technology in schools cannot be ignored. In fact, with computers in education, it becomes easier for teachers to impart knowledge and for students to acquire it (Maslin, 2021).

2 METHOD

The method used in this study is a cross-sectional survey design. It involves collecting data on attitudes, opinions, or beliefs at a single point in time (Creswell, 2008). The subjects of this study were students of the Faculty of Tarbiyah and Education Sciences, Institut Agama Islam Negeri Kerinci who were given survey sheets through the SIAKAD (Academic Information System) application owned by Institut Agama Islam Negeri Kerinci and distributed at one time. The survey questionnaire is accessed by respondents through a link in the SIAKAD application which is filled in by respondents when they want to see the results of the study. survey questionnaires are given with a Likert scale, short answers, and answer choices.

Snowball sampling technique was used to select 652 students at the Faculty of Tarbiyah and Teaching Science, Kerinci State Islamic Religious Institute. Data were analyzed using descriptive data analysis techniques based on gender so that it can be concluded the direction of the needs of educators today in conducting learning. The data obtained were made into pictures, charts, and tables in order to facilitate their presentation. The survey instrument has previously been tested on 30 test respondents and has met the validity and reliability of the instrument.

3 FINDING AND DISCUSSION

3.1 Students Perspektive

3.1.1 Students Data as Respondent

Based on the results of distributing survey instruments through the SIAKAD application, general information data on students who responded to the survey sheet were obtained. Statistical data of research respondents based on gender can be seen in Table 1.

Table 1: Gender of Students.

Gender	Frequency	Percent (%)
Male	240	36.8
Female	412	63.19
Total	652	

Table 1 shows that the majority of respondents were female: 412 (63.19%) out of a total of 652 students. Only 240 (36.8%) male students were respondents. A comparison of the number of students based on their gender can be seen in Figure 1.

This difference in numbers could be due to the fact that on average, men did not have the willingness to fill out the survey sheet provided while women were compliant and volunteered to fill out the survey sheet.

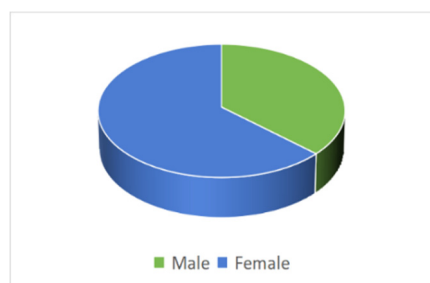


Figure 1: Data on Gender Differences of Respondents.

The diagram in Figure 1 explains that at the Faculty of Tarbiyah and Teaching Sciences at the Kerinci State Islamic Institute the majority of students are women and it can be concluded that women are more interested in becoming teachers or educators than men.

3.1.2 How Often Do You Use Technology on a Daily Basis?

In the first perspective, students were asked about the use of mobile devices both in daily student learning

activities and other activities based on the number of hours. The results of these questions can be seen in Table 2.

Table 2: Average Usage of Mobile Devices.

Average (Hours)	Male	Percent (%)	Female	Percent (%)
$0 < x < 2$	9	3.75	4	0.97
$2 < x < 4$	27	11.25	14	3.40
$4 < x < 6$	77	32.08	67	16.26
$6 < x < 8$	69	28.75	231	56.07
$8 < x < 10$	31	12.92	43	10.44
$x > 10$	27	11.25	53	12.86

Table 2 explains that most men use technology in learning for 4 to 6 hours a day with a percentage of 32% of the total male respondents. Whereas most women spend 6 to 8 hours using technology in learning with a percentage of 56.07% of total female respondents. This identifies that women use technology more often in their daily lives. Whereas men tend to spend time using technology only for other purposes such as playing games, social media, etc.

This difference in use will affect the purpose of the technology used. women will choose to use technology for things that are beneficial to the development of their learning while men prefer for pleasures

3.1.3 If You Face Difficulties in Your Learning, What Do You Do?

Based on the answers from the research respondents, the data on student choices are obtained as in Table 3.

Table 3: How to Face Difficulties in Learning.

Answer	Male	%	Female	%
Ask Friends	42	17.50	57	13.83
Ask Lecturers	62	25.83	113	27.43
Ask Technology	127	52.92	231	56.07
Nothing	9	3.75	11	2.67

Table 3 shows how the students dealt with difficulties in their learning. The results are very surprising. 52.92% of males and 56.07% of females prefer to ask the Internet through Google, Firefox, Opera, etc. during the process of associating learning. Other data presented that asking questions to lecturers is done by males with a percentage of 25.83% while females with a percentage of 27.43%. It can be assumed that lecturers are not the first place to ask

when students face difficulties. This raises the next problem: do lectures still need the role of lecturers?

3.1.4 Where Is Your Greatest Source of Understanding when Learning?

The survey instrument also asked about students' perceptions of their main learning resources in learning activities, discussions, making papers, and completing lecture assignments.

Table 4: Sources of Learning.

Answer	Male	%	Female	%
Book	11	4.58	45	10.92
Lecturer	46	19.17	52	12.62
Browsing	95	39.58	213	51.70
Youtube	88	36.67	102	24.76

Based on Table 4, it is known that on average students use the main learning resource in the form of browsing by utilizing the internet, this can be seen where 39.58% and 31.70% of women stated that they prefer to find learning resources from browsing activities. This indicates that 47.23% of the total respondents choose to find learning resources from browsing activities.

3.1.5 Which Explanation Can Improve Your Understanding? Technology or Lecturer?

The survey also asked about whose explanations were more useful in the process of deepening the material taught in lectures. The results can be seen in Figure 2 below.

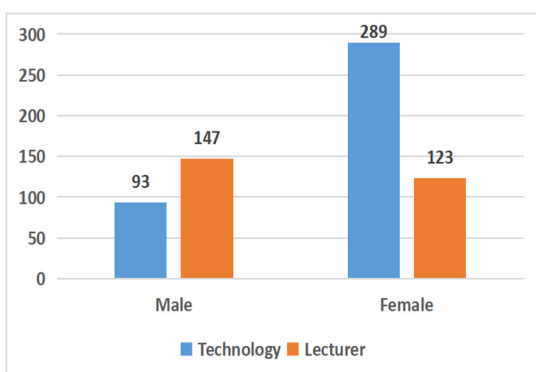


Figure 2: Best Explainer Technology vs Lecturer.

Based on Figure 2, men as many as 147 students with a percentage of 61.25% tend to choose lecturers as the best explainers when studying and for women

as many as 289 students with a percentage of 70.15% choose technology to have the ability to explain material better. Based on this data, the average student states that technology-based explanations such as from Google, Youtube, and other learning resources have better abilities than lecturers who teach.

3.1.6 Between the Role of Technology and Lecturers, Which Is More Needed?

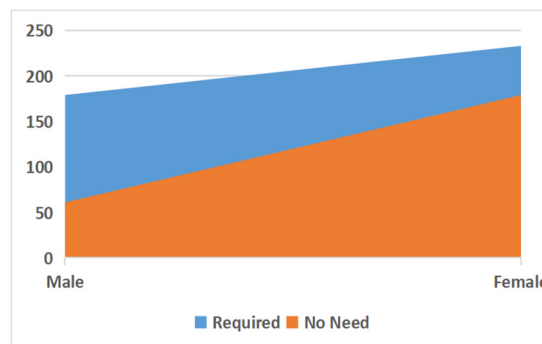


Figure 3: Lecturer's role in teaching.

Based on the data exposure in Figure 3, it can be concluded that students tend to state that the role of lecturers is still needed in learning both according to men (74.58%) and according to women (56.55%). this identifies that even though students actively use technology in learning, students still need the role of lecturers in explaining the material.

3.2 Discussion

Based on the results of a survey that researchers have conducted on 652 students at the Faculty of Tarbiyah and Keguruan Sciences, Kerinci State Islamic Institute, information was obtained that respondents were classified by gender with 240 male students and 412 female students. This number indicates that women are more likely to want to become teachers than men. This is in accordance with the results of Indriani's research (Indriani, 2019) and it can be because women have more interactive abilities in teaching and have a passion in the field of nurturing someone (Auladuna et al., 2018).

The first question is related to how often students use technology in their daily learning process. The survey data states that women are more active in using technology in the learning process related to completing assignments, finding references, and learning new materials. This is in contrast to Bustaman and Yosman's findings that women's role in the development of information technology is still

a minority compared to the large number of men. (Bustaman, 2013); (Lestari, 2013).

The learning process sometimes experiences struggles both in terms of understanding and finding learning references. The survey results state that women seek solutions to these obstacles by searching for information via the internet by utilizing browsing technology such as Google, Youtube and men are more likely to ask the lecturer who teaches. The difference in choice between men and women is due to men's ability to understand prioritizing the audio-visual ability of the lecturer. (Skelton & Read, 2006) but men's reception skills are better than women's when the lecturer explains (Darrin Wood, 2012).

Understanding in learning using technology based on the survey, it is known that the internet and YouTube are the main sources in class learning compared to sources from books and lecturers. This is influenced by the lecturer's ability to explain (Porter, 1958). In addition, the lack of teachers' ability to design teaching materials also causes students to prefer to look for other references (Bouckaert, 2019). Therefore, students consider that technology has a better ability to explain the material they learn, this is because technology can provide diverse references (Alam, 2021).

The last survey results asked about the role of lecturers in the learning process. All respondents stated that the role of lecturers is still needed to be able to understand more deeply when compared to only using technology in the learning process. This is because lecturers have more interactive abilities than other technology-based media. When used by an excellent teacher, technology can only help to improve learning. Teachers' roles in the classroom will inevitably change as the resources available to them evolve (Hamiti & Reka, 2012).

Educational technology is becoming more prevalent in the classroom. The next generation of children will be ready to work with these new technologies, which will play an important role in their learning and acquisition of various cognitive knowledge, so educational technology must be incorporated into future curricula (Stošić, 2015). While the role of lecturers in learning is still very much needed by students, it should also be remembered that information and communication technology must be integrated into the learning process if education is to be meaningful, engaging, entertaining and accessible to all (Khiste, G.P., Maske, D.B. & Veer, 2017). Therefore, to make learners better, it is necessary to integrate lecturers and technology both in explaining material and

developing learning. (Mfreke Umoh & Bassey, 2020); (Flemming et al., 2016).

4 CONCLUSIONS

Based on the results of a survey conducted on 642 students, it can be concluded that there are differences in perspectives between men and women in seeing the role of lecturers and technology in teaching. Women tend to spend more time using technology in learning more than men, in facing difficulties in learning students both men and women prefer to find solutions by using the internet and in understanding learning materials students prefer explanations from the internet such as browsing and youtube to explore the material taught compared to the role of the teacher in explaining.

Although the survey data says that technology has a significant role in student learning, students admit that the role of lecturers cannot be released because students think that lecturer explanations are still needed.

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Learning Model Using Social Media in the Community of Batik Craftsman in Indonesia

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Keywords: Learning Model, Gotong Royong, Batik Community.

Abstract: Cultural values become essential things that characterize a society. This study aims to explore how a learning model using social media based on the artistic value of gotong royong in the batik community of Malang district. Scott, (1988) explained “gotong royong” uses the principle of reciprocity. It means that it does not aim to get money, but it is a hope that when needed some help in the community of “gotong royong”. This study uses a qualitative design with an ethnographic approach. Informants research from batik artisans in the *Gondanglegi* sub-district, Malang Regency. It consists of 11 female batik artisans. The study results show that through collective learning using social media, by raising the value of mutual assistance, mutual support, and knowledge sharing on an ongoing basis, product innovation can result.

1 INTRODUCTION

In today's fast-paced world, knowledge can become quickly outdated as new information is constantly being developed. It is important to stay current by updating your knowledge, skills, and competencies in order to remain competitive in the global market. In business, knowledge is often more valuable than land or capital in terms of its ability to drive competition (Dunford, 2000). According to Popescu (2012), it is necessary to continuously update one's knowledge in order to stay relevant and effective in a business organization.

The company's success depends on its ability to continuously learn and adapt to changing circumstances (Bosch, Baaij, & Volberda, 2005; Leiponen, 2006). By exchanging information and implementing knowledge management systems, the organization can foster a culture of learning that promotes innovation and the ability to creatively imitate others (S. Kim & Lee, 2006).


Elevating the cultural value of gotong royong, as the basis for learning for MSME actors in Indonesia has not been touched in depth. The values of gotong royong are widely explored in formal education


settings, such as in making teaching materials (Mandala & Pujiati, 2020; Hutama, Anhar, & Haidar, 2019), developing teaching materials that contain character values (Subiyakto, Syaharuddin, & Rahman, 2016), and planting the values of mutual cooperation in learning (Utomo, 2018).


Small businesses favour informal learning processes (Gray & Mabey, 2005; Nolan & Garavan, 2016). It can be a solution for SMEs to continue growing and facing the existing obstacles of globalization. Rowden & Conine, (2005) also stated that the relationship between informal learning and innovation had not been studied in detail. Research shows a statistically significant relationship between informal learning and innovation (Raimonda Alonderiene & Pundziene, 2009).

SMEs prefer informal learning because it is cheaper (Anderson & Boocock, 2002b). According to Keskin (2006), small companies tend to rely more on informal learning and independent learning at work because of their more flexible and adaptable capabilities. Explore how natural SME learning can be used as a reference for policymakers in developing SMEs effectively and efficiently.

In Indonesia, the learning model for small and medium-sized enterprises (SMEs) is based on the idea

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of mutual support and cooperation for the overall advancement of the community, rather than for the benefit of a single member (Oikawa, 2014). This is influenced by the strong cultural values of "gotong royong" in Indonesian society, which is based on the principle of reciprocity (Scott, 1988). It means that it does not aim to get money but it is a hope that when needed some help in the community of "gotong royong".

Learning in the batik community suggests the critical role of access to social networks for learning (Clarke, Thorpe, Anderson, & Gold, 2006). Networking in the community will make sharing the knowledge that helps in product innovation that cannot do independently for micro and small businesses.

"Research has shown that students benefit from interacting and sharing information with their peers on social media platforms (Bryer & Zavattaro, 2011). Kaplan and Haenlein (2010) identified six types of social media: collaborative projects (e.g. Wikipedia), blogs and microblogs (e.g. Twitter), content communities (e.g. YouTube), social network sites (e.g. Facebook), virtual game worlds (e.g. World of Warcraft), and virtual social worlds (e.g. Second Life) (Soetan et al., 2020)."

The aspect of how micro and small entrepreneurs carry out innovation through collective learning has not received much attention in Indonesia. Exploring how natural MSME learning can be used as a reference for policymakers in developing SMEs effectively and efficiently.

Social networks or media can be thought of as a category of online platforms that allow people and organizations to share and collaborate on content (Rouse, 2017). Therefore, this study will explain how the micro and small business community facilitates collaboration in learning, where elements of togetherness and mutual cooperation are prioritized through social media technology. Revive the value of "gotong royong" as local wisdom of Indonesian culture.

2 METHODOLOGY

This study used a qualitative design with ethnography type that assesses the social behaviour of identifiable groups of the community (Creswell & Poth, 2018). The selected community group is the Malang district batik entrepreneur community, founded in 2017. It consists of 33 districts with 75 fellows of small batik entrepreneurs.

The advantages of this batik community are: learning in the district indicated the value of togetherness, solidarity, and cooperation, which have become the culture of the Indonesian people, known as "gotong royong". Considering Batik is a local cultural heritage, which needs to be preserved.

The pre-survey was carried out on several small and medium business communities located in one of the creative city areas in Indonesia, namely Malang Raya. Through interviews with several business local authorities at an exhibition held by the local government. There are indicators that the batik entrepreneur community deserves to be studied to find learning patterns based on local wisdom values. The next stage is an in-depth study of the data obtained through interviews, observation, Focus Group Discussion (FGD), and documentation.

Informant chosen was a study group in the batik craftsman community of Gondanglegi District, which had 11 fellows. The reason is that the group's assistant has been the head of the batik craftsmen community in Malang Regency and batik observer since 2013. She is continuously recruiting fellows and experience as nationally certified mentors from official certification bodies that have received permission from the State. Therefore, this group deserves to be a learning model for batik entrepreneurs at the micro and small scale. Preservation of local cultural values helps fellows to innovate sustainably, as well as helping to survive amidst intense global competition. Following are detailed data of 11 key informants.

Table 1: Informant Identity.

Key informant identity	Position	Age	Year Joined the Community	Other ventures
AD	Local authority	50	2017	batik guide
DW	Treasurer	46	2017	Bridal makeup
KU	Fellow	48	2017	housekeeper
NA	Fellow	32	2019	employees
JU	Fellow	45	2017	beverage business
AN	Fellow	40	2017	eatery
SA	Fellow	42	2020	housekeeper
SU	Fellow	35	2019	housekeeper
AV	Fellow	20	2019	housekeeper
SR	Fellow	36	2017	housekeeper
JA	Secretary	49	2013	housekeeper

Data analysis used the model of Miles and Huberman (1994) with several stages, including data

reduction, data presentation, and conclusion/verification. Coding system using the Nvivo 12 program.

The first coding process are open coding, After this coding process continued with axial coding, the themes contained in open coding were regrouped by deleting unnecessary ones and creating one piece with similarities. The new theme became more conical.

The final stage of the coding process is selective coding. The final data reduction aims to get an ideal theme according to the conditions in the field. Finally, a pattern was found that was by the learning process in the batik craftsman community.

The Credibility of Research Results

To test the validity of the data using triangulation techniques. Compare the results of interviews with the chairperson and fellows in FGDs and individual interviews. Compare interview data with observations, and several photos that show the ongoing learning process.

3 RESEARCH RESULTS AND DISCUSSION

Based on the results of the data analysis, the learning model for small batik entrepreneurs in their community is shown in Figure 01 below.

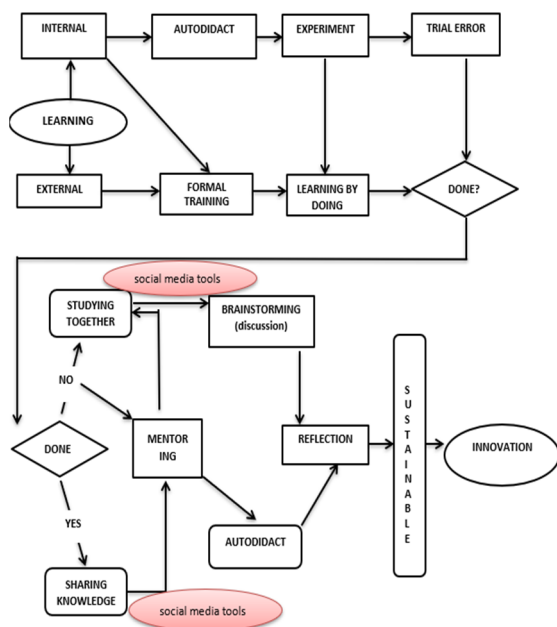


Figure 1: Learning Model in the batik craftsmen community on a micro and small business scale.

Based on figure 01, the pattern of mutual cooperation-based learning activities through

WhatsApp social media in the Citra Gendhis batik community is as follows

1. SMEs are more motivated to learn if they are directly related to the concrete problems they are facing. The exchange of knowledge and experience can be seen from the posts of each member when asking for advice and when facing problems in their field of work.
2. Mentors who come from the community are felt to be more effective because there has been an emotional closeness by being part of one community. Friendly relations (close relations) between members, will increase the possibility of exchange of knowledge Argote et al. (2003).
3. Need each other, foster solidarity values (togetherness, mutual help, and sharing) which can be seen from the WhatsApp group. The values that encourage cooperation are often rooted in deeply embedded phenomena such as religion, shared historical experiences, and other cultural traditions that can only be formed with great difficulty (Fukuyama, 2002).
4. Experiments and trial errors are an integral part of learning the batik community. Utilizing internet technology in the form of YouTube helps in this process.
5. If they experience problems, they seek help from friends in the community by venting on social media groups or offline. Through the trust that has been formed in society can develop social capital in collective learning (Gubbins & Maccurtain, 2008).
6. So that learning together is an alternative when there are obstacles experienced. A shared learning system with mutual cooperation values, by utilizing social media can produce product innovations in a sustainable manner.
7. Most SME actors already understand the importance of networking in learning.

Entrepreneurship learning is an ongoing process where practical policies are drawn from experience (Politis, 2005). Including failures and critical events that have been experienced.

Here's a snippet from one of the community fellows who supports the statement.

"You know? Mine until I processed it six times. I am very smart. So wait fresh, then think about finding a way to reprocess it. If I'm still busy, so be it. So look forward to being fresh, looking for inspiration, what to do. Finally got good results".

There are learning elements consisting of doing experiments independently and the trial error process. Through learning by experimentation and

learning from mistakes, one can improve skills (Gibb, 1997).

Some literature suggests that essential aspects of SME learning are contextual action, critical reflection, and social interaction (Higgins & Aspinall, 2011).

If autodidact does not work, then the person concerned will continue mentoring, which is facilitated by other fellows who have more abilities or from fellows who have succeeded in making similar products. Each fellow is open when asked for suggestions for the success of fellow fellows. It is a value in the community even though it is not written. Fukuyama, (2002) states that understanding social capital as norms and values that encourage cooperation often stems from phenomena such as religion, sharing of historical experiences, and other deeply embedded cultural traditions that can only be formed with great difficulty.

The following is a snippet of the conversation results during the FGD

... AD: If she fails to make batik, report to me. I took it to Ms Yuli's place. It is the victim of a failure like this. No problem, significant. I said like that. DW: I'm a cheerful person. If it fails, I say forget...

From the results of reflection during the mentoring, it will result in product innovation when implemented sustainably. This statement from the interview with JU.

"After the mother joined the training, were the results of the training shared with friends? Yes. After training, I usually try it at home. Trying like this, how will the result be later. Such knowledge increases. Oh, it should be like this; insight also increases. Do not stop. Is every experiment a collective thought? Yes. Sometimes shared in groups. Oh yeah, great, what to use? How to process it? Such a question arose. Oh yeah, make it like this tomorrow. So that knowledge is increasing" (JU). The values of helping each other can be linked to the values in Indonesian society known as "gotong royong". Scott (1988) described "gotong royong" as a system based on the principle of reciprocity, where individuals in a community offer help to each other with the expectation that they will receive assistance in return when they are in need. This model of mutual support is intended to promote the development and progress of small and medium-sized enterprises (SMEs) in Indonesia, rather than being motivated by financial gain. Oikawa (2014) further noted that this system inspires a sense of community and cooperation within the SME community in Indonesia. During the training at the fellows' homes, the values of helping each other can be seen in the following JU conversation.

"... if we have finished working on the assignment during training. We always help other friends who are not finished. Finally, everything is over, so it's all cooperation. If you have trouble, do you meet Mrs Yuli? Yes. Sometimes we ask for solutions from friends in the group. Does anyone know? Oh, yeah, like this. Can you come to a friend's house if you don't understand? Can. Usually to Ms Yuli's house, or whoever can". SMEs often prefer informal learning methods because they are more flexible and adaptable. These methods, which include work-based learning, are generally less expensive and more convenient than formal learning methods. Building friendly relationships with colleagues can facilitate knowledge exchange and lead to a dynamic learning process that results in innovative work (Kim & Nelson, 2000). This is supported by research from Argote et al. (2003) and Anderson & Boocock (2002), and Keskin (2006). In observing the conversation between JU and DW, this was clear.

"...JU: When the order is finished, our activities are like this. We learn together if there is a new model, so there are innovations. DW: Sometimes the evaluation is about "canting", how to colour it. Such is learning especially batik techniques."

The essence of cooperation in innovation for small business actors is precious. The existence of dependence on each other becomes the strength to work together. Exchange ideas and share the results of each experiment resulting in critical reflection based on contextual action. It reflects the existence of togetherness in learning, discussion, which results in critical thinking. If this is sustainable it will result in innovation. Discursive and critical reflection aspects of the environment benefit SMEs through new networks and collaboration between SMEs (Clarke et al., 2006). Although often not intended as learning, small business owners consciously develop and manage their corporate learning processes and environment (Csillag et al., 2019). Support and complement each other from the following interview excerpt with AN. If you learn from training held by the government compared to training in learning communities, which one is more effective? More effective in our group. The time available for formal trainers in the government is limited. If we don't understand, we repeat it in our community until we get maximum results, for three days. That means cooperation. Yes. Nobody is stingy. Because if you are frugal, the knowledge does not increase. "No blessings" (AN).

Collaborative learning also provides a synergistic way for students to acquire knowledge (Xie et al., 2019). Brien & Hamburg, (2014) emphasized that

collaborating helps small businesses to survive sustainably. Formal and informal learning integration makes the right choice (Tynjälä, 2008) through informal learning communities (Spaan et al., 2016).

From the resulting learning pattern Figure, 01 shows that entrepreneurship learning is positively related to the performance of SMEs. Innovation plays an essential role in mediating the relationship between entrepreneurial learning and SME performance (Kura & Abubakar, 2017). Leiva, Alegre, & Monge, (2014) found a positive linear relationship between post-start-up entrepreneurial learning and performance. A conceptual framework for entrepreneurship learning has been developed (Rae, 2005). According to Rae, entrepreneurship learning is an important area of inquiry that is not well understood in the academic study of entrepreneurship or the practical development of new entrepreneurs. Saunders, Gray, & Goregaokar, (2014) much of this learning is informal through networking, mentoring, or coaching. Innovative SMEs are significantly more committed to learning than those who are less creative. Innovative SMEs are more likely to have a shared vision, be open-minded, and learn from crises, and can reflect on their experiences. Sharing a vision, creating continuous learning opportunities, informal learning that promotes inquiry and dialogue, collaboration and team learning, knowledge management systems, and enrichment are all part of the organization. Deakins & Freel, (1998) entrepreneurial behaviour is a dynamic response to a changing environment that does not exist in large corporate organizational theory.

4 CONCLUSION

Learning by utilizing social media for the batik community has a vital role in the current era of knowledge and technology. According to (Saunders et al., 2014), innovation and learning orientation are important factors in the success of SMEs. Based on the results of collaborative learning research through WhatsApp and YouTube groups by prioritizing mutual cooperation values, it makes it easier to innovate products for micro and small businesses such as artisans in the batik craft community. Knowing how this learning pattern can be used as a reference for policy makers to develop SMEs in order to survive and develop.

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Analysis of the Pancasila Student Profile Strengthening Project Using Merdeka Belajar Platform at the Senior High Schools to Improve the 21st Century's Competencies

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Keywords: Pancasila Student Profile Strengthening Project, 21st-Century Competencies, Merdeka Curriculum, Merdeka Belajar Platform.


Abstract: The project to strengthen the Pancasila Student Profile (P5) in the Merdeka Curriculum is an important thing to be carried out in each education unit because it guides educators in building the character and competencies of students in schools. Furthermore, it is hoped that Indonesian students are students whose lives are competent, characterized, and behave according to the values of Pancasila. SMAN 15 Padang is one of the high schools that has implemented the Merdeka Curriculum, and it is a Sekolah Penggerak. At this school, the implementation of the Merdeka Curriculum uses the Merdeka Belajar platform. This paper aims to analyze the implementation of P5 activities, how to apply the Merdeka Belajar platform, and reveal problems in implementing P5 at SMAN 15 Padang. The research method uses a qualitative approach to descriptive research. The data collection techniques used are observation, interviews, and documentation. This P5 activity begins with identifying problems facilitated by the teacher so that the activity starts to have an orientation to the understanding of concepts and resolve the issue according to the theme. The P5 theme selected activities are sustainable lifestyles, local wisdom, and entrepreneurship. Generally, the implementation of P5 and the use of the Merdeka Belajar platform in SMAN 15 Padang has been going well, and it has reflected the character and behavior of the values of Pancasila.


1 INTRODUCTION


The curriculum is the life of education. Education in Indonesia always experiences curriculum changes from time to time. Changes in the curriculum certainly cannot be avoided and passed but must always be lived and adapted to the needs and principles (Sadewa, 2022). The national education system is required to make renewal in a planned, directed continually, and continuous manner so that it can guarantee equitable education, improved quality as well as the relevance and efficiency of education management to prepare students to face challenges according to the demands of life changes both local, national, to global (Faiz and Kurniawaty, 2022).

In Indonesia, one of the educational development processes is curriculum development (Bisri, 2020; Safaruddin, 2020). The curriculum in Indonesia has been developed since independence, and changes occur from time to time. The curriculum is the life of the course of education (Huda, 2017). Through the curriculum, it is expected that education success will be created. Changes in the curriculum cannot be avoided due to the lack of proper education in Indonesia and the influence of socio-cultural systems, politics, economics, and science and technology. To achieve success in education, in addition to a good curriculum, all components in education must be bound to each other (Abi Hamid *et al.*, 2020; Safaruddin, 2020)

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In 2021 the government, through the Ministry of Education and Culture, the government launched the prototype curriculum, which was further enhanced in 2022 and became the Merdeka curriculum. In its journey, the implementation of the Merdeka Curriculum (IKM) was carried out in stages, not simultaneously and not massively. The government provides opportunities for schools to conduct IKM learning independently. IKM Mandiri is made in three categories: Mandiri Learning, Change, and Mandiri Sharing.

One of the schools that uses the Merdeka Learning curriculum is SMA Negeri 15 Padang, also a Sekolah Penggerak. According to the results of interviews with deputy school principals in the field of curriculum and several learning committee teachers at SMAN 15 Padang, "In Merdeka curriculum, there is a term called KOSP (Education Unit Operational Curriculum) which is the basis of learning at school, teaching modules and student profile project Pancasila."

In the Merdeka Learning Curriculum, learning strives to lead to the formation of the Pancasila Student Profile following its vision and mission, which emphasizes the formation of Pancasila students. Based on the Minister of Education and Culture Regulation No. 22 of 2020 concerning the Strategic Plan of the Ministry of Education and Culture of 2020-2024, Pancasila Students are the embodiment of Indonesian students as a lifelong student who has global competence and behaves Pancasila values, with six main characteristics: Believers, fear God and have a noble character, global diversity, work together, independent, critical reasoning, and creative.

Based on research conducted by (Winarsih, 2022), the elementary school level has implemented character education following the strengthening of the Pancasila Student Profile through the components of Pancasila Student Attitudes. The teacher explained that almost 85% of students had already instilled the character of students following the profile of Pancasila students, and 15% of students still did not have the character as a student profile of Pancasila.

In Research conducted by (Nisa, 2022), the application of learning projects Strengthening Pancasila Student Profiles at the Junior High School Level in the planning, application process, and evaluation of the learning project strengthening Pancasila Student Profile has the stages that need to be carried out by the teacher with the facilitator.

In (Hadian, 2022) research, planning a project strengthening the Pancasila Student Profile (P5) at the high school level includes forming a team, making

technical guidebooks, and determining project themes. Meanwhile, the organization of projects includes forming a project group supervisor team, determining research objects, and determining student structure in groups. The implementation of the project starts from the determination of the formulation of research objects, the formulation of the problem, making research instruments, implementation of observations, making reports, and making blogs to upload project reports. Meanwhile, the supervision and evaluation of the project are carried out with internal and external supervision.

Before using the Merdeka Learning Curriculum, SMA Negeri 15 Padang had implemented character education for its students. For example, by inviting students always to maintain the cleanliness of the school, not damage plants, and discipline in time. Education developers use Pancasila Student Profiles as the leading destination (Kemendikbud Ristek, 2021B). According to the Deputy Principal of the Curriculum Section of SMAN 15 Padang, there are still several obstacles to applying the Merdeka Studying Curriculum in this school.

It is undeniable that information technology has been a powerful locomotive in driving social transformation around the world in the last few decades. Most of these change processes are based on the production of information. Freddy K. Kalidjernih explained that information technology, including education, plays an important role in social change. Kalidjernih explained that education faces the implications of these changes, especially concerning an increasingly globalized life that has shaped and sharpened teaching and learning cultures (Kalidjernih, 2011). In line with this view, the Ministry of Education and Culture responded to these modern problems by initiating a Sekolah Penggerak program to realize the Pancasila Student Profile, namely students who have a noble character, are independent, have the critical thinking, are creative, work together and have global diversity.

In implementing the Merdeka Belajar curriculum using the Merdeka Belajar platform, teachers are assisted in finding inspiration, references, literacy, and understanding in efforts to implement the Merdeka Curriculum. The Merdeka Mengajar Platform is a Penggerak partner for teachers forming Pancasila students. The Merdeka Belajar Platform has three functions: teaching the Merdeka curriculum more effectively, learning new concepts, and working to create works or products.

(Sinsuw and Sambul, 2017) In preparing learning tools, teachers use technology and information as learning resources and media, providing space for

developing teacher creativity in designing learning to support achieving set learning objectives. (Aka, 2017) revealed a change in the way of teaching teachers from paper-based to technology and information based. Using technology and information as learning resources and media can increase the speed and achievement of learning objectives, improving Indonesian education quality. Based on the information mentioned above, the researcher will study more deeply how to apply the strengthening of the Pancasila Student Profile project in learning at the Sekolah Penggerak, namely at SMAN 15 Padang, to improve the skills of the 21st century. This article aims to analyze the implementation of P5 activities and the use of the Merdeka Belajar Platform at SMAN 15 Padang and reveal Problems in implementing P5.

2 METHOD

This research is a qualitative approach to descriptive research. Data collection techniques used are in-depth interviews, observation, and documentation. This study's data sources are the Principal, Deputy Principal of the Curriculum Section, and SMA N 15 Padang teachers. The data analysis technique used in this research uses the Milles and Huberman model; namely, the analysis in the research is carried out interactively. The stages of this research were carried out through three steps. The data reduction stage was conducted to determine relevant, meaningful, and important data based on the research and to obtain the data the researcher needed. This study's data (display data) is presented as a short narrative description (with text). Conclusion drawing (verification) where researchers will draw or make conclusions by explaining data collection activities through observation, interviews, and supported by documentation (Miles, Huberman, and Saldana, 2013).

3 FINDINGS AND DISCUSSION

3.1 Planning for Learning Projects Strengthening Pancasila Student Profiles at SMAN 15 Padang

Based on the Ministry of Education and Culture No.56/M/2022, the project strengthening of the Pancasila Student Profile is a project-based curricular activity designed to strengthen the efforts to achieve

competency and character by the Pancasila Student Profile, which is compiled based on graduate competency standards. The project's implementation, strengthening Pancasila students' profile, is carried out flexibly regarding cargo, activities, and implementation time. The Pancasila Student Profile Project is designed separately from the intracurricular. Purpose, Content, and Project Learning Activities must not be associated with the goals and materials of intracurricular subjects. The education unit can involve the community and the world of work to design and organize a project to strengthen the Pancasila Student Profile.

According to the manual for developing a project to strengthen the profile of Pancasila students, graduate competency standards have competence for Indonesian students who are expected to have the competence to become democratic citizens and become superior and productive people in the 21st century. Therefore, Indonesian students are expected to participate in sustainable and resilient global development facing various challenges.

Some of the competencies that students must have in the 21st century, according to (Griffin, Care, and McGaw, 2012), are known as 4C, namely critical thinking and problem-solving (critical thinking and solving problems), creativity, communication skills, and the ability to work Collaboratively (ability to work together).

SMAN 15 Padang is one of the high school-level Sekolah Penggerak in West Sumatra. SMAN 15 Padang, in 2022, has implemented the Merdeka curriculum for the second year. SMAN 15 Padang has been to deliver students to achieve maximum learning following the demands of 21st-century skills through the independent curriculum.

SMAN 15 Padang was appointed Sekolah Penggerak in Padang, already trying to learn the Merdeka curriculum after going through various efforts and stages that have been passed, with enthusiasm and motivation from all curriculum drafting teams, along with the support of all teachers, school committees, and other school components.

Before the learning project strengthened the Pancasila Student Profile, SMAN 15 Padang formed the Learning Committee Team. Based on interviews with the Principal of SMAN 15 Padang, the Learning Committee Team designed and planned the learning project for Pancasila Student Profile. This team holds workshops, training, and assessments with other teachers so that the learning will be carried out according to the same goals and expectations.

Some of the activities of the learning committee team that have been carried out are identifying the

stages of readiness in schools in running projects, determining the dimensions and themes of profile projects, designing the time project time allocation, compiling the profile project module, determining learning objectives and developing topics, activity flow and assessment of profile projects. Based on interviews with the Head of the Project Planning Team, Strengthening the Pancasila Student Profile said that developing ideas and project modules according to students' local context, needs, and interests involves students' opinions and ideas.

In identifying the stages of the readiness of the education unit in carrying out the project strengthening the Pancasila student profile, including at the developing stage, because in SMAN 15 Padang already has a system to carry out the project-based learning, some teachers already understand the project-based learning and SMAN 15 Padang already involved outside parties to help wrong one project activity. For example, speakers from the theme of entrepreneurship makeup, haircut, and eco print originated from outside school.

Through the Pancasila Student Profile, it is expected that students, especially in high school, can develop their character values so that good behavior is formed and inherent in students. There are six key competencies: faith, devotion to God Almighty and noble character, global diversity, cooperation, creativity, and critical and independent. The six dimensions are interrelated and also strengthen.

Implementing Pancasila Student Profile Projects at SMAN 15 Padang was choosing the theme of a sustainable lifestyle, local wisdom, and entrepreneurship. This project in 1 (one) school year, the project strengthening the Pancasila Student Profile has carried out at least 3 (three) projects with 3 (three) different themes In SMA/MA class X and 2 (two) projects with 2 (two) different themes in class XI and XII SMA/MA.

3.2 Implementation of Learning Projects Strengthening Pancasila Profiles to Improve 21st-Century Skills

The project strengthening of the Pancasila Student Profile is carried out by training students to explore real issues in the surrounding environment and collaborate to solve the problem. Therefore, a separate time allocation is needed to ensure the project strengthening of the Pancasila student profile can run well. Implementing the project strengthening of Profile of Pancasila students is carried out flexibly, both on charge and on time. In charge, the Profile

Project must refer to the Pancasila Student Profile Achievement by the students' phase and not be associated with learning achievements in subjects. In managing the implementation time, the project can be carried out by allocating project hours from all subjects, and the total amount of time for the implementation of each project can be different. For this reason, in the project implementation to strengthen the Pancasila Student Profile at SMAN 15 Padang, as many as 30% of the total JP. From the themes provided by the Ministry of Education and Culture, the theme chosen by SMAN 15 Padang is as follows:

3.2.1 Sustainable Lifestyle

a. Hydroponics

Hydroponics is one way to cultivate plants using water without using soil. According to Syamsu, hydroponics is plant cultivation without using water as a container for soil substitutes. So that this hydroponics can use if the available land is minimal and suitable for areas with limited water supply. At this time, hydroponics is widely used as a profitable agricultural business.

In this activity, students realize that the willingness to land in the future will be limited due to population growth. It is a way to maintain a sustainable life for the long term. Furthermore, students also build awareness to behave and behave environmentally friendly, study the potential for the sustainability crisis in the surrounding environment, and develop readiness to deal with and mitigate it.



Figure 1: Hydroponics.

This hydroponic activity uses a container used as a used plastic bottle. In this activity, students are introduced to hydroponics, plant analysis, materials needed, the steps to make hydroponics and presentations of each group.

b. Domestic Waste Recycling

One of the activities carried out by students is recycling waste. Waste often refers to the remaining material that is not desirable or beneficial to humans after a domestic activity or process ends. Garbage is useless and can be used as fertilizer for plant fertilizers.

The source of this activity is the teacher of SMAN 15 Padang with the stages of the waste recycling project, namely the introduction of waste recycling, analyzing the materials needed, and the steps for recycling domestic waste and presentations. Student action is to recycle organic waste into compost. The reflection that is carried out is to see the level of success in the recycling of waste into compost.



Figure 2: Organic Waste.

This hydroponic activity uses a container used as a used plastic bottle. In this activity, students are introduced to hydroponics, plant analysis, materials needed, the steps to make hydroponics and presentations of each group.

c. Simple Water Treatment

The speaker of this activity are teachers of SMAN 12 Padang. With the stages of the project is the loss of the characteristics of clean water and is suitable for use. Furthermore, the stage is to analyze the materials needed to process clean water and their functions, the containers that can be used, and the steps to make a processor (filter). Students make group presentations. Student action on this activity is to make water processing (filter) and be able to process turbid water into clear water that is suitable for use and changes in water become suitable for use.

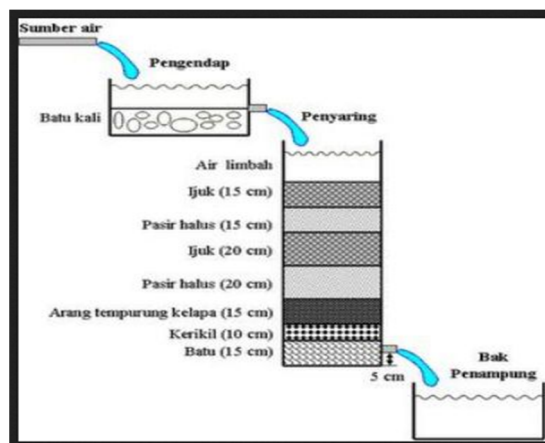


Figure 3: Simple water treatment.

The activity with the theme of a sustainable lifestyle conducted by SMAN 15 Padang can improve the skills of the 21st century. Creative skills in this hydroponic activity are seen in students' creativity and innovation using used materials such as used plastic bottles used as a forum for planting plants. In thinking skills, this hydroponic activity allows students to think critically by connecting learning, such as biology, with contextual problems that exist in everyday life. In this activity, students work in groups, and students always discuss and communicate with other students in undergoing projects to get perfect results. Collaboration skills can be seen in this activity; students learn in groups (teamwork) and work according to their responsibilities.

3.2.2 Local Wisdom

Local wisdom Based on the Pancasila Student Profile Project, students are known by the local wisdom of the community or the region where students go to school. Students are expected to be able to find out the development of customs, culture, or typical food of the area.

SMAN 15 Padang has carried out this local wisdom activity by introducing culture. Because the location of SMAN 15 Padang is in the Limau Manis area, local wisdom activities raise babako kematian dan babako menikah customarily around Limau Manis. The project with the theme of local wisdom carried out by SMAN 15 Padang is called "Rogo." This project is filled with various sub-project such as mandi, penghelatan kematian, pernikahan and petatah petitih. Students can choose the activities they are interested in and provide material following the group and preparation for the harvest.

The project showed that 21st-century skills, especially creative attitude, communication, and cooperation, were seen. In addition, this activity also increases the level of faith and fearing God Almighty; the activity is in the form of harvesting works that run well.



Figure 4: Babako Menikah.



Figure 5: Haircut Project.

3.2.3 Entrepreneurship

Activities with the theme of entrepreneurship at SMAN 15 Padang, namely face makeup, haircuts, eco print, and hand embroidery. Teachers and students identify economic potential at the local level, problems that exist in the development of these potentials, as well as their relation to environmental, social, and welfare aspects. Through this activity, entrepreneurial creativity and culture will be developed. Students also open insight into future opportunities, are sensitive to the community's needs, become skilled, and are ready to become a professional workforce full of integrity. SMAN 15 Padang has carried out the following activities.

a. Makeup and Haircut

Female students with speakers from Inez Cosmetics followed makeup activities, and for male students to participate in barbershop activities with resource persons who already had competency certificates. The purpose of this activity is that students know the stages of entrepreneurship, besides that in order to have responsible and independent characters.

The general stage is the introduction of face makeup and haircut, analyzing the tools and materials needed, and stages of making up and haircuts and presentations from students. The action carried out practicing makeup with the model and cutting hair, and reflection is the final result of makeup on the face and haircut.

b. Ecoprint

Eco print can be interpreted as a printing technique on fabric using natural dyes and manually making motifs from the leaves by sticking until the motifs arise on the fabric. This project's speakers were ISI Padang Panjang Lecturers and Cultural Arts Teachers of SMAN 15 Padang.

The process of this eco print project is the introduction stage of eco print, the stages of analysis of the materials needed to make eco print along with their functions and presentations; the action stage is to make an eco print on a piece of white cloth with leaf motifs, flowers, and branches, the reflection carried out is the result end. This eco-print activity is a multidiscipline subject, including biology, art, and culture.



Figure 6: Ecoprint Process.

c. Hand Embroidery

The process stages of this project include the introduction of hand embroidery, the stages of analysis of the materials needed to make hand embroidery, and presentations from each group. The action stages on hand embroidery make strimin wool and knitted strimin embroidery. The reflection is carried out on the final results of the hand embroidery, with the speaker from SMAN 15 Padang teacher.



Figure 7: Hand embroidery.

Activities with the theme of entrepreneurship can improve student creativity skills by making ideas. Creative skills in facial makeup activities can be seen from combining colors that match the color of consumers, able to work with consumers. Help each other if they find obstacles in completing the project able to pour ideas into producing works such as eco print and hand embroidery. This regional activity is beneficial because it can equip students to produce business ideas and develop their businesses. This activity is an excellent foundation for the creative and innovative ideas we need to succeed in the 21st century.

3.2.4 Implementation of the Merdeka Belajar Platform

Teachers have provided references in developing their teaching practices in the Merdeka Platform following the Merdeka Curriculum. In this application, various teaching tools are oriented to a Merdeka curriculum. This platform also helps teachers and makes it easier to carry out diagnostic analyses related to literacy and numeracy easily and quickly, so learning can be applied according to students' level of achievement and development. The learning function of the Merdeka Belajar Platform is to provide independent training for teachers to obtain quality and credible training materials that can be accessed independently. Teachers can also enjoy

various learning videos for teaching materials. The Merdeka Belajar Platform facilitates teachers to work optimally by providing a platform for various practices. To access the Merdeka Belajar account, you can use the learning id learning account via Android or the web page.

At SMAN 15 Padang, teachers have used various techniques and information-based platforms in the learning process, including Kahoot.

Kahoot is a type of visual learning media. As a visual learning medium, Kahoot has an attention function. The function of attention, namely visual media, is the core, attractive, and directs the attention of students to concentrate on the content of the lesson related to the visual meaning that is displayed or accompanies the text of the subject matter.

There are several advantages of using the Kahoot application as a learning media, and they are: students are more motivated to pay attention and record material taught by the teacher so they can take quizzes at the end of class; students are more motivated to be quiz winners with the highest scores; with the time limit in working on each question on the quiz, the possibility of students discussing with friends will be less; students do not need to create a Kahoot account; using Kahoot, teachers will get evaluation results quickly without correcting student answers. However, besides these advantages, there are some disadvantages, including Meaningless if the learning objects still need not be achieved; adequate facilities and infrastructure, such as a PC/smartphone with a stable connection.

It is just that teachers have to pay a monthly subscription to implement Kahoot as a learning media. It is just that teachers have to pay a monthly subscription to implement Kahoot as a learning medium.

3.3 Evaluation of Learning Projects Strengthening Pancasila Profiles in Increasing 21st-Century Competencies

The evaluation of how well the project to strengthen the Pancasila Student Profile was carried out must consider how well the project was carried out as a whole. This evaluation is not just about how well students are learning. It is also about how well teachers learn as they prepare project activities and how ready education and other educational units are to carry out projects.

When evaluating how well the project was done, the focus is on the process, not the result. So, the development and self-growth of students, teachers,

and education units are used to measure evaluation. For example, what has been evaluated differs from how many students get good final grades or how good their projects are. Instead, what is evaluated is how and how much students learn and grow as people during the project. For teachers, changes can be measured by how well they can develop project-based learning activities. For education units, changes that can be measured are the readiness level, how well project-based learning is being implemented, and how well the project facilitation team works together.

There is no one perfect way to judge something. Each education unit is ready to start working on different projects, and teachers and students are ready to participate in project-based learning. The evaluation of how projects are implemented should be made by changing how the education unit is set up. Education units and teachers used to project-based learning will have different goals for their students' development than those just starting with project-based learning. There are three types of assessments in the project, with the following details:

- Diagnostic Assessment, this assessment is carried out before the project begins to measure the initial competencies of students to be used to determine the need for differentiation, development process, and project activities and determine the development of sub-elements between phases.
- Formative Assessment, this assessment is carried out in the activities of each student
- Summative Assessment includes an assessment in the scope of the Pancasila Student Profile.

3.4 Evaluation Results of Project Strengthening Pancasila Student Profile Using the CIPP Model

A hypothetical design or model results from a comparative analysis between relevant preliminary studies (conceptual models) and field (factual models) findings.

Based on the results of research both qualitatively, it is known that the implementation of P5, in general, is appropriate; it is just that the evaluation of the project is less appropriate and relevant to the 21st-century competency.

Based on the findings of the planning, process, and evaluation of the learning of P5 at SMA N 15 Padang, the following is a description of the evaluation results of the implementation of the P5 project. Using the CIPP model can be seen in the table below:

Table 1: Evaluation Results of Project Strengthening Pancasila Student Profile Using the CIPP Model.

Aspect	Findings of the Results of the project strengthening the Pancasila Student Profile
Context	- There is already a Project Module for Strengthening Pancasila Student Profile - Assessment is carried out optimally
Input	- Limited knowledge and ability of teachers in differentiation learning - Technological tools are still lacking
Process	Application in class is not optimal because, in one meeting, it has not been able to carry out learning simultaneously with assessment and reflection.
Product	The unavailability of an assessment rubric is related to the project themes relevant to P5 and 21st Century Competency.

Referring to the data of the study's results so that the objectives of the P5 project can be achieved optimally, researchers try to design the P5 project hypothetically. The following is a Hypothetical Design Project P5:

Table 2: Hypothetical design project strengthening student Profile Pancasila.

Aspect	Hypothetical design project strengthening student profile Pancasila
Context	- Analyzing the achievement of the 21st Century Competency Objectives so that the aim of implementing projects is right on target - Development of P5 Assessment related to 21st Century Competency
Input	- Teacher guidance - Procurement of facilities and infrastructure, especially technological tools - Application Of BYOD Model
Process	- Improve teacher competence in the learning process regarding the syntax of the learning model - Rubric Assessment of Project Results Relevant to P5 and 21st-Century Competency
Product	- School Exhibition Project results attended by teachers, students, parents, and the community around the school.

Based on Permendikbudristek No. 56/M/2022, Pancasila Student Profile Strengthening Project (P5) is a project-based curricular activity designed to strengthen efforts to achieve competency and character following the Pancasila Student Profile,

which is arranged based on graduate compensation standards—project strengthening of the Pancasila Student Profile (P5) new learning raised in the Sekolah Penggerak.

This P5 is part of the Merdeka Curriculum structure in addition to intracurricular learning. P5 is a learning that provides direct experience following the characteristics of the surrounding environment so that children have global competence and behave that reflects the values of Pancasila in daily life. Implementing the recommended project approach in developing P5 can be preceded by observing or investigating the topics chosen by students following their respective interests and needs. In the hypothetical design of the project, strengthening the Pancasila student profile in terms of context is to analyze the achievement of the 21st-century competency goals so that the objectives of implementing the project are right on target. In this case, implementing P5 must follow students' competencies in the 21st century.

According to (Griffin, Care, and McGaw, 2012), the competencies that students must have been critical thinking and problem-solving, creativity, communication skills, and the Ability to Work Collaboratively. In implementing this project, there must be a P5 assessment form related to 21st-century competency. It is more than just an assessment that contains the characters from P5 that students must achieve. In its implementation, in the hypothetical design of the project, strengthening the Pancasila Student Profile in terms of input and guidance is needed for teachers to achieve this competency goal. Supervisors by the teacher on the project help students inform what needs are needed in implementing P5. For implementing the P5 project, it is necessary to increase the potential of teachers to manage the learning process, and component training can be held, especially in using the syntax of the learning model. To evaluate the implementation of the P5 project can be seen in the products produced by students.

Assessment is not only with one model of assessment; this evaluation is not only on student learning but also on the learning process of educators in preparing project activities and the readiness of education units and other educational units in carrying out projects. So the evaluation benchmark is the development and self-growth of students, educators, and education units. It is, moreover, associated with the strengthening of 21st-century competencies. The end of the project also needs to be held, showing off students' work. The school exhibition results of the project, which was attended

by teachers, students, parents, and the community around the school. In SMA N 15, Padang carried out the "Panen karya. The series of events in this activity was arak-arakan (tema babako), manyerak bareh kuniang tema (kato pasambahan), and sambah ka makan, penyajian kuliner kegiatan babako, prosesi babako kelahiran, baralek dan kematian.

4 CONCLUSIONS

In planning a project strengthening the Pancasila Student Profile, SMAN 15 Padang has adjusted the project module provided by the Ministry of Research and Technology following the local context, needs, and interests of participants by involving opinions; and student ideas.

Implementation of Projects Strengthening Pancasila Student Profile, Teachers have implemented a project strengthening Pancasila Student Profile with less or more than the recommended Ministry of Education and Culture of the Project. This activity begins with identifying problems facilitated by the teacher so that project activities begin to be oriented to the concept of concepts and solving problems (Problem Solving) according to the theme.

SMAN 15 Padang Education involves the community, the community on an ongoing basis to support intracurricular learning and project strengthening the profile of Pancasila students. The community involved is more diverse according to intracurricular learning objectives and projects, strengthening the profile of Pancasila students. Project activities Strengthening Pancasila Student Profiles held at SMAN 15 Padang could already improve 21st-century competencies. In the findings of hypothetical design, it is necessary to develop the Rubric assessment from P5 projects to improve 21st-century competencies.

SMAN 15 Padang already uses the independent learning platform, and the Kahoot application is one of them in the learning process. It can arouse students' interest to study more actively.

Limitations in this study include no analysis of student perspective on the implementation of the P5 program using valid instruments. Therefore, this can be a follow-up to the following study.

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Validity of Inquiry-Based Citizenship Learning Model in Strengthening Student Social Concern at College

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Keywords: Citizenship Education, College, Inquiry-Based, Validity.

Abstract: This study aims to reveal the validity of the inquiry-based Citizenship Education Learning model to increase students' social awareness in College. The Inquiry-based Citizenship Education Learning Model is a learning model that provides opportunities for students to carry out scientific investigations, knowledge construction, problem-solving experiences, instilling attitudes, collaboration, and communication. This research is research and development using the ADDIE model. The instrument used was a questionnaire, and data were analyzed descriptively based on the validation score sheet. The products are validated by pedagogy experts, civic education experts, learning technology experts, and language experts. Observation results were analyzed with the V Aiken formula. The analysis results show that the average value of Aiken's V is 0.78. The validity results show that the Inquiry-based Citizenship Education learning model meets the valid criteria. These findings indicate that the Inquiry-based Citizenship Education Learning Model is appropriate for use in Citizenship Education learning to increase students' social awareness in College.


1 INTRODUCTION


According to Joyce, Weil & Calhoun (2016), a lecturer must choose the learning model for character education learning to be effective and efficient. The learning model referred to includes the discovery learning model, where the emphasis on this model students are more active in finding learning outcomes. At the same time, the lecturer plays an active role in facilitating students to learn, the inquiry learning model where the emphasis on this model is that students learn to respond to learning. In contrast, the lecturer plays an active role in facilitating students learning, the problem-based learning model where the emphasis on this model students play an active role in solving problems. In contrast, lecturers play an active role in facilitating students in solving problems, and there are many other learning models.


While courses that emphasize character building are Citizenship Education courses (Kautz & Working, 2013), Citizenship Education (often abbreviated as Civics) is a field of study that discusses civic values. Citizenship Education in several countries is one of

the subjects that can shape the personality and character of students, and specifically there are six countries in question, namely Australia, Hong Kong, Japan, Taiwan, Thailand and the United States (Morris et al., 2013). Citizenship Education strategically increases national insight and the spirit of nationalism (Soekarno & Mujiwati Sri, 2015). Therefore, to strengthen the role of Citizenship Education, the government in Indonesia requires schools at every level of education to provide Citizenship Education lessons, including at the tertiary level (Komara, 2017). It is as stipulated in the Law of the Republic of Indonesia Number 20 of 2003 concerning the National Education System article 37 paragraph (1), which reads, "Citizenship Education is intended to form students into human beings who have noble morals, believe in God and have a sense of nationality and love for the motherland" (Permendiknas, 2003).

Citizenship Education has been implemented and developed worldwide, although using different terms or names. These terms include civic education, citizenship education and some even call democracy

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education. This Citizenship Education course has a strategic role in preparing intelligent and responsible citizens. A nation can be called a developed and strong nation if the fundamental values that guide it are indeed manifested or applied in people's daily behavior. So that in the nation's life, there will be no more deviations, abuses, colonialism, discrimination, and other negative behaviors. The Indonesian nation now seems to be in a position that is vulnerable to various influences and problems. The existence of Citizenship Education in tertiary institutions can help build student character, especially in social care.

Based on the results of the researchers' observations in the preliminary study on students at Bung Hatta University in Padang City, it appears: (1) There are still students who do not want to help their friends when they are in trouble, and this statement is supported by the research results of Oktariani et al. (2020) which states that students' social care attitudes greatly influence the development of the student's character. Social awareness that needs to be developed is an attitude of respecting the opinions of others and an attitude of caring about what other people feel. Furthermore, there is also research by Wahyuni & Reswita (2017) which states that the emotional maturity of students will be stable if their existence is appreciated and accepted by other students, meaning that the attitudes and behavior of students in the campus environment must show mutual respect for one another. (2) Less concerned with disaster-stricken areas (Soekarno & Mujiwati Sri, 2015). (3) Lack of respect for the opinions of their friends, and this statement is supported by the results of research by Chang et al. (2019), which states that students of different races tend to be less valued for their opinions. This statement is also supported by the results of research by Mwangi et al. (2018).

Likewise, the situation of students at Bung Hatta University is motivated by various things, one of which is the lack of students' understanding of the 1945 Constitution article 28F that every citizen has freedom of expression (Republic of Indonesia, 1945), lack of understanding students of the existence of a plural Indonesian nation, namely different languages, different religions, different ethnicities and races (Ali Imron & Nugrahani, 2019) so that they are still bound by idealism and maintain their respective egos (Hefner, 2020). (4) Students are less involved in community activities and are more likely to act individually because they are preoccupied with gadgets. This situation of students is supported by the results of research by Schwartz et al. (2018) at universities in the United States, which stated that students tend to be more individual and do not want to be involved in discussion groups on and off campus. Students choose groups of friends who are equal to their lives, while groups of students whose

economic level is at a low level, the average student does not want to socialize. According to Rifat et al. (2017) gadgets or information and communication technology tools should be used by students to accelerate social action and disseminate information to their friends to do good (Pratiwi et al., 2019).

Students as social beings cannot live alone, but need other people in various ways such as getting along, doing assignments, helping each other, caring for each other, working conscientiously and having noble character (Wijaya et al., 2019). Students are individual beings and social beings. Students as individuals mean that each student has the right to own personal property and adapts to the surrounding environment. In contrast, students as social beings mean that everyone cannot live alone but needs one another (Lockwood, 2016). Students' social concern will exist if they understand the values and meaning of social care (Betzler, 2019). Caring is an attitude or behavior of students that can be observed as actual behavior in helping others who require help (McElmeel, 2002). In fact, social care is a participation or participation of students in building relationships with the surrounding environment (Kemendikbud Language Center, 2016). Social concern is an attitude of openness with humans in general which is shown by caring for every human being who needs help (Bloom, 2017).

Forms of social care are (1) Concern for joy and sorrow, meaning concern that arises without differentiating between good and bad situations and feeling what others feel. (2) Personal and shared concern, meaning concern that arises because of personal impulses in helping someone and also concern that is carried out together in feeling what others experience. (3) Urgent concerns, namely concerns that are in the common interest that must be prioritized for action (Tal Saban & Kirby, 2019).

Social concern will arise if students understand the forms of concrete action in implementing social care (Crowley & Fleury, 2019). This concept is based on the cognitive domain. Namely, the lecturer provides students with examples of cases in narrative form. Students are encouraged to feel what other people feel (affective), and finally, what is known and felt is then manifested in the form of behavior (De Vignemont & Jacob, 2012), including 1) if someone asks for alms then they are willing to give it, 2) if there are parents who need a seat on public transportation then they are welcome to sit, (3) if a friend is sick then come to visit, 4) if there is a dirty room, they are moved to clean it even though it is not on a picket schedule, 5) if someone experiences a disaster, they collect funds as a form of social action to ease the burden on others, 6) if a friend needs a pen or something else, he is moved to help, 7) if someone

has an accident, they are moved to seek help (Bove, 2019).

Based on the above, Citizenship Education lecturers have an essential role in facilitating students recognize and understand forms of social care so that students have high awareness and concern in feeling what other students and the general public feel (Matto & Bennion, 2017; Jaber et al., 2018). In order for learning objectives to be easily achieved, a lecturer must adopt a learning model or can also develop an Inquiry learning model that will be used during the learning process (Mulyana et al., 2018). One of the learning failures is not achieved effectively and efficiently when lecturers are still bound by conventional learning methods, namely still bound by lecture teaching methods, where the learning process is still dominated by lecturers so that students sit quietly listening to the lecturer's lectures (Margunayasa et al., 2019). Research by education experts says that conventional teaching methods are no longer effectively applied (Bagus et al., 2020). Lecturers must have creativity in choosing a suitable learning model so that students are more active in the learning process (Walker & Warfa, 2017).

Based on the problem regarding the level of social awareness of students who are still lacking, Citizenship Education lecturers need to change their learning model from conventional to student-centered. The learning model that will be developed in this study is the Inquiry learning model to increase the social care values of students at Bung Hatta University.

2 METHODS

The research conducted was design research using the ADDIE model of development study type. The development study is at the prototype stage, namely product validation. The components of the Inquiry-based Citizenship Education Model learning model validity include content, construction, and language. The validity assessment of Inquiry-based Citizenship Education Model carried out by experts who are experienced in their fields. Before evaluating the validity of Inquiry-based Citizenship Education Model, the validity of the instrument used is tested first. The questionnaire that was filled in by the expert review was analyzed to determine the validity of the instrument. A valid instrument is used to assess the validity of Inquiry-based Citizenship Education Model. Furthermore, the questionnaire that was filled in by experts was then analyzed to determine the validity of the developed Inquiry-based Citizenship Education Model. Validity analysis uses a Likert scale with steps (a) Giving a score for each answer;

strongly agree (4), agree (3), disagree (2), and strongly disagree (1), (b) Adding up the total score of each expert review for all indicators, (c) Providing validity values using the Aiken's V formula:

$$V = \frac{\sum s}{(n(c-1))} \dots \dots \quad (1)$$

with: s = r - lo, lo = the lowest validity score (in this case = 1), c = the highest validity score (in this case = 4), r = the number given by the expert review. Validity categories can be seen in Table 1.

Table 1: Validity Category.

Value	Category
≥ 0.60	Valid
< 0.60	Valid Invalid

Based on Table 1, it can be seen that the criteria of the agreement value of the validity obtained. This validity is done using Aiken's V formula and is categorized into two values: valid and invalid. The Inquiry-based Citizenship Education Model instrument and the learning model developed are valid when the value obtained exceeds or equals 0.6.

3 RESULTS AND DISCUSSION

The validity of the Inquiry-based Citizenship Education Model learning model begins with the development stage, namely designing an Inquiry-based Citizenship Education Model learning model in the form of a draft guide containing background, concepts, and characteristics of the model comprising syntax, principles of reaction, social systems, support systems, instructional effect, and nurturant impact. This draft refers to the results of the analysis at the preliminary research stage that has been carried out. This draft first carried out a self-evaluation to check for errors in design, to get relevant product criteria and based on science, consistency, and have the expected practicality. After that, this draft was asked for opinions from four lecturers of Universitas Negeri Padang and Universitas Bung Hatta to provide input so that a prototype of the Inquiry-based Citizenship Education Model learning model was obtained, which would be validated by experts in the related field. Details of the results of the validity are explained as follows.

Table 2: Summary of the Book Validation Results of the Inquiry-Based Civics Learning Model.

No	Rated Aspect	Aiken-V	Category
1	Book Format	0.80	High
2	Linguistics	0.77	High
3	Rational Model	0.77	High
4	Supporting Theory	0.77	High
	a. Syntax	0.81	Very High
	b. Social System	0.78	High
	c. Principle of Reaction	0.71	High
	d. Support System	0.75	High
	e. Interactional and Accompaniment Impacts	0.80	High
6	Implementation in Learning	0.85	Very High
	Average	0.78	High

Table 3: Validator Suggestions.

Validator	Suggestions and Feedback	Repair Efforts
Validator 1	<ul style="list-style-type: none"> - It should also be linked to 21st-century competencies, namely the 4C formula: Critical thinking, Collaboration, Communication, and Creativity. - Confirm whose expert constructivism theory is used. - It is necessary to emphasize what the indicators of student activity are - There are still words found that are not operational - All principles are written in operational language, not theoretical language 	<ul style="list-style-type: none"> - Added to the rational model of the 4C formula - Using John Piaget's theory of constructivism - Reinforcing student activity indicators in model book - Operationalize the words in the model book
Validator 2	<ul style="list-style-type: none"> - The book's construction needs to improve its layout so it does not seem too congested. - We recommend selecting the color of the image with a background or writing with a contrasting background. - There are several tables that are not given a number and name should be completed For the model structure, there are 3 main activities, namely: planning, implementing and evaluating activity, of which there are only two in the book, namely implementing and evaluating. We recommend that you add a planning structure to it. 	<ul style="list-style-type: none"> - Fixed book layout - Changed the color and text on the cover page - Completing the numbering table in the model book - Changed the model structure chart
Validator 3	<ul style="list-style-type: none"> - Numbering according to the rules of scientific writing - Please pay attention to writing sentences and adjust them to the rules of Indonesian grammar - There are still sentences not according to SPOK - Must be consistent in font size and type of writing used - Citation of source names, please correct - Writing words/foreign language in italics 	<ul style="list-style-type: none"> - Adjust numbering based on scientific rules - Correct sentences that are not appropriate - Consistent font sizes and fonts used - Fixed quoting - Check and revise foreign language writing and italics
Validator 4	<ul style="list-style-type: none"> - Cover design to make it even more attractive - Double-check typing errors - Re-check several sentences in the book so that readers can easily understand them. - Clarify the difference in syntax between the original model and the developed model. - Check back the supporting theory for a more complete - Improved the description of the model component elements - Check the suitability of the bibliography and citations - Clarify Supporting Theory - The rational model needs to be clarified from the curriculum aspect, the characteristics of higher education students, the material, social conditions, etc. 	<ul style="list-style-type: none"> - Revised the cover design by changing the color and background - Fixed typing error - Fixed sentences in the book - Details the difference between the original syntax and the developed model syntax - Delete and add appropriate supporting theories - Fixed model components - Check and revise the bibliography - Revise the rational model based on curriculum aspects, characteristics of higher education students, material, social conditions, etc.

3.1 Results of Instrument Validity

The instrument to validate the prototype of the Inquiry-based Citizenship Education Model learning model was assessed first by three experts using the instrument validity assessment sheet. The components of the instrument validity assessment include the suitability of the statement with the instrument grid, the instrument can reveal the quality of the content, language, and the construction of the Inquiry-based Citizenship Education Model learning model, and the instrument is straightforward to use. The results obtained from the assessment of this validity instrument were 0.83. The average validity value (Aiken's Values) of the Inquiry-based Citizenship Education Model learning model instrument from experts is more significant than 0.6 in the valid category. Thus, the instrument of the validity of the Inquiry-based Citizenship Education Model learning model can validate the Inquiry-based Citizenship Education Model.

3.2 Results of the Inquiry-Based Citizenship Education Model

Five experts in their field logically validate the prototype of the Inquiry-based Citizenship Education Model, while the results of these experts are shown in Table 2.

Based on the validation sheets collected from the validators, all validators stated that model books and learning tools for the Inquiry-Based Civics Learning Model were in an Outstanding category. All validators agree that the model can be used with minor revisions, meaning that all aspects assessed are at acceptable criteria, so they do not require significant revisions and re-validation. The results of each validator above show that the Inquiry-based Citizenship Education Model has an average validity (Aiken's Values) of 0.78 and can be used in Civic Education learning with minor revisions. The revision is related to the suggestions the experts provided, as seen in Table 3.

4 CONCLUSIONS

Based on the process and results of the study, it is concluded that the design of the Inquiry-based Citizenship Education Model of students' Civic Education in university is valid in terms of content, construct, and language with an average validity value (Aiken's Values) of 0.78. It means that the

Inquiry-based Citizenship Education Model can be applied on Civic Education in university.

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The Influence of Career Guidance Services, Self Understanding, Opportunities, Decisions and Job Preparation on Career Achievement Motivation in the Digital Age

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Keywords: Achievement Motivation, Career.

Abstract: Achievement motivation in a career can be influenced by several factors. The purpose of this study was to reveal the effect of the the influence of career guidance services, self understanding, opportunities, decisions and job preparation on career achievement motivation in the digital age, using a quantitative research method. The study population was all students of the Guidance and Counseling Study Program at the Teaching and Education Faculty of Universitas Nias, and the sample was drawn by purposive sampling, is a study group of 42 students who were taking a career guidance course as well as a data source. The research instrument used to collect data is a closed questionnaire. Data were analyzed statistically inferential with multiple linear regression analysis, to answer research questions or hypotheses posed. The results of the study reveal that there is a significant influence simultaneously and partially: career guidance services (X1), self-understanding (X2), understanding of career opportunities (X3), career planning and the future (X4), career decisions (X5), and job preparation X6), on achievement motivation in a career (Y). The contribution of the independent variable X1-X6 to the dependent variable Y is 98.3%. Every 1% increase in the X1-X6 variable will be followed by a 1.018% increase in the Y variable. The more the independent variable increases, the dependent variable also increases.

1 INTRODUCTION

What is the purpose of education as a conscious and planned effort? What is activated and also what potential is developed in students? Nothing but educational efforts to activate students through the form of a learning atmosphere and learning process, which is carried out with good planning by educators (Fajriati, 2022). The goal is for students to develop their potential. The self-potentials that are developed constitute six educational focuses, namely: (1) religious spiritual strength; (2) self-control; (3) personality; (4) intelligence; (5) noble character; and (6) the skills needed by themselves, the community, the nation and the state (Hidayah, 2022; Nur, 2020). The form of a learning atmosphere and learning process in an effort and planned from education, is carried out to awaken, activate, and empower the life energy that exists within students, to think, feel, behave, act, and be responsible to completion, in order to develop the six educational focuses.

The energy of life meant (Lase et al., 2022) is achievement motivation in career (Toma, 2022; Perera, 2022), is the driving force that exists within a student to learn and gain success, and involve himself in activities where his success depends on his personal efforts and abilities (Touw et al., 2018). Achievement motivation or life energy referred to is a driving factor to determine success (Adegboyega, 2018; Lase et al., 2022), both in learning or academic success or success in the community in a career, in order to achieve or achieve the desired success (Ran, 2022). The size of the influence depends on its intensity (Rezeki, 2021). This driving factor or motivation for achievement or life energy is what makes individuals characterized by the desire to always try or struggle to improve or maintain their abilities as high as possible in all activities by using standards of excellence (Ibrahem, 2020; Lase, 2018). Achievement motivation in a career in the digital age or life energy is a competition with a standard of excellence (Anwar et al., 2020), can be activated within the individual through several factors or can be

influenced by several variables, including: (1) career guidance services, (2) individual self-understanding, (3) understanding of career opportunities, (4) career decisions, and (5) preparation work.

Career guidance services are services provided by counselors to help individual students to develop acceptance of unity and self-image and their role in the world of work (Kettunen, 2022; Nikander et al., 2022). This service is organized so that individuals understand themselves and accept them well and adapt themselves to the world of work they will enter (Dodd et al., 2022; Masyarakat et al., 2022). Some things need to be understood (Lase et al., 2020), accepted by the individual, and adapting himself to the world of work is related to all potentials such as: interests, talents, strengths and weaknesses, intellectual, emotional, and spiritual intelligence, physical, psychological, and so on (Magee et al., 2022; Lase et al., 2020).

This career guidance is a means of fulfilling the needs of individual development, and an integral part of the educational program that is integrated in every learning experience in the field of study (Konseling & Gunungsitoli, 2021), related to the development of abilities, both cognitive, affective, and skills in realizing a positive self-concept, understanding the decision-making process, acquiring knowledge, and skills that will help him enter life, living arrangements from events in life that are constantly changing (Santos, 2022). This career guidance is also useful for solving career problems, getting the best adjustment between abilities and their living environment, preparing themselves to face the world of work with various demands, in choosing a particular job field or position/profession, and equipping oneself to be ready to assume that position, gain success, and self-realization in the course of his life (Adejarebabarinde, 2022).

It can be emphasized that career guidance is a process of assistance, service, approach to individuals, in order to know and understand themselves, get to know the world of work, plan for a decent future, in accordance with the expected form of life, be able to determine and make decisions appropriately and responsibly for the decision he took, so that he is able to realize himself meaningfully (Couth et al., 2022). This career guidance service has a strong influence on achievement motivation in a career in the digital age or life energy in a career (Lase, 2022; Boamah et al., 2022; Kautish et al., 2022).

Individual self-understanding for a career involves identifying: talents, interests, and various potentials, all strengths and weaknesses possessed, in

order to choose and enter an appropriate study program, in order to plan a decent career and life for the future (Loacker, 2022; Lase & Halawa, 2022). Talent can be defined as an innate ability or potential possessed by all individuals that is gifted by God to humans with all their uniqueness (Mousa et al., 2022). Everyone should be able to hone and develop it (Jensen et al., 2022). Interest is the power that exists within the individual, which directs him to take advantage of his free time in doing the things he likes most to do. (Kjus, 2022). This interest is one of the important factors to consider in further studies, in order to plan a viable career and future (Lu et al., 2022).

If students choose a major that suits their talents and interests, their potential will develop, because they will enjoy their choice of study even though there are many challenges. (Solahudin et al., 2022). Vice versa, if he chooses a major that does not suit his interests, then his potential is not explored (Belova et al., 2022). Meanwhile, knowing oneself is the ability to honestly accept all the strengths and weaknesses one has in responding appropriately to a situation (Larasati et al., 2022). This self-understanding greatly influences career achievement motivation and proper life planning by individual participants in career guidance services (Al-hadith, 2022).

The introduction of career opportunities is an opportunity to enter the various world of work that is around individuals according to their talents, interests, potential, all the weaknesses and strengths they have (Nehez, 2022; Yunusa et al., 2022). Job opportunities are conditions that describe the availability of jobs for job seekers, and make it possible to get them (Ntamu, 2022). Job information can be obtained by someone through the mass media such as: newspapers, the internet, the ministry of manpower, educational institutions, service bureaus, and various other sources of information (Phan et al., 2022). Therefore, in planning a decent career and future life, individual students in choosing a study program to enter, should pay attention to career opportunities and jobs available in the future (Gepner et al., 2022). So that you prepare well according to the job vacancies you will enter, prepare yourself for the required job requirements, including what knowledge, attitudes, skills and expertise are needed. (Chaturvedi et al., 2022). Everything needs to be understood by the individual and well prepared for the career (Schlaegel et al., 2022). The introduction of career opportunities is very influential on career achievement motivation and planning for a decent future life by individual participants in career guidance services (Digby et al., 2021). For this

reason, the introduction of career opportunities needs to be material for career guidance services planned and organized by the counselor (Tran et al., 2022).

Career planning and the future, is a process that includes exploration, selection, and self-preparation for a career (Elassar et al., 2022; M.Paz, 2021). This process is also the determination of activities or activities that will be carried out in a directed and focused manner, based on the potential: interests, talents, beliefs, and values possessed by individuals, to obtain sources of income that enable the quality and quantity of welfare to progress and develop (Wong et al., 2022). This planning includes several things, namely: (1) self-awareness of career opportunities, constraints, choices, and consequences that will be faced; (2) identification of goals in life and life, especially those related to career and future; (3) preparation of an educational program to be pursued in relation to the career to be entered, knowledge, attitudes, skills, expertise and experiences required, which are developmental in nature in achieving career goals, which refer to the work or position occupied and believed to be a calling in life (Hsu & Tseng, 2022; Chouhan, 2022). In principle, the intended career is a choice of profession or work that is the purpose of life for an individual, and is also a development of the course of one's work life which is taken seriously and improved as much as possible (Stambulova et al., 2021), which permeates the entire realm of one's thoughts and feelings, and colors his entire lifestyle.

There are several steps in planning a career and the future (Ang, 2021), namely: (1) thinking about what will be done and the strategic steps needed to achieve the desired thing; (2) pay attention to the interests, talents or abilities possessed, and think seriously and deeply about the things one likes, the ability to work well, and the values that are believed to be true; (3) find out the types of careers or jobs that suit the individual, namely: talents, interests, and educational background possessed, working conditions, and expected environment, clarity of direction and career focus to be entered; (4) compare the skills and interests possessed with the type of career that will be chosen according to oneself; (5) attend training education in accordance with the career goals that have been made; (6) prepare the necessary costs; and (7) request assistance from a career guidance service from a professional counselor (Magnano et al., 2021; Hirschi, 2021).

Career decisions are dexterous attitudes and actions after carrying out good career planning (Peng & Lin, 2019). Career decision making is a process of determining a choice that begins with selecting an

alternative first through comparison and evaluation of the available alternatives (Kassahun et al., 2022). The individual develops an understanding of critical and intelligent thinking processes, feels packaged, takes a positive attitude with full awareness, acts agile and takes full responsibility for making decisions (Asghar & Ajmal, 2022). Making good career decisions is an important and very crucial skill, which must be carried out by individuals after carrying out good career planning beforehand (A. Pascual, 2022). This decision-making went through several stages, starting with identifying several alternatives, comparisons, evaluation and information processing skills first (Kekeocha et al., 2022).

Various factors can influence this career decision making (Almaghaslah et al., 2021), such as peers, parents, close people in the environment where the decision maker is located, geographical location, educational institutions, political conditions, past conditions including the job market, workplace, socioeconomic status, and community groups, conditions that will come like family, historical trends, media, globalization, and many other factors (Sharma et al., 2022). Good decision making requires a career guidance service from a counselor, who can help individuals find, choose, and make decisions (Williams et al., 2021). This career decision greatly influences career achievement motivation and proper life planning for the future (Nurwahidin, 2022).

Job preparation is everything that needs to be prepared by someone before working (Quintos et al., 2022; Kim, 2022). The question that needs to be asked by decision makers at this job preparation stage is what should be known before starting work? (Arini et al., 2021) The answer is the knowledge that a decision maker has about the world of work, the process of entering a job, requirements, qualifications, the future of the job, salary, and career development (H. M. Chen et al., 2021). his knowledge plays an important role and influences the pattern of development of job selection (Allen et al., 2021). A deep understanding of the world of position or work can assist individuals in determining their decisions. Job information that is needed by individuals is things that are oriented towards a number of possibilities to enter the choice of a job (Birtch et al., 2021). So as to avoid mistakes in choosing a job or further study later because the information obtained is outdated (Baluku et al., 2021).

There are several things that decision makers need to know before working (Arada et al., 2021; Cooper et al., 2021; Cooper et al., 2021), among them are: (1) differences in the social environment, namely

understanding yourself and the environment in which you work (Valijonovna, 2022; Axatovna, 2022); (2) learn to understand self-concept by carrying out various ability tests as information material for consideration in entering the world of work (Duclos-Bastías et al., 2022); (3) be responsible for job planning, that is, they must be able to overcome internal and external pressures to make decisions in planning for job selection, also consciously and without coercion must equip themselves with additional capabilities and hone the skills they already have so that they are better, ready to meet the requirements for the level of entering the planned jobs (Deng et al., 2022); (4) identify the necessary steps, namely alternative ways of achieving educational goals that assist in the planning process, continuing education after high school such as apprenticeships, trainings, courses, and various other trainings, and record what is most related to job selection (Stahl, 2022); (5) assistance entering the world of work, namely students who have completed their education, especially vocational school students, really need assistance with job distribution (M.-L. Ma, 2021). This work preparation is very influential on achievement motivation in a career in the digital age (Smyrnova et al., 2021; Behzadi, 2021).

Achievement motivation in a career in the digital age is a desire that drives individuals to achieve success and a standard of excellence in a career (Karlina et al., 2021). This drive makes him try or struggle to improve and maintain his ability as high as possible in all activities by using his standard of excellence (Karlina et al., 2021). Achievement motivation, also known as life energy, is an individual's effort and belief in realizing their learning goals with certain standards of success and being able to overcome all obstacles that hinder the achievement of goals (Net et al., 2022). This can also be explained as a motivation that aims to pursue the highest possible achievements, namely to develop or demonstrate high abilities, to do something as well as possible in order to achieve success (Beacon et al., 2021).

So achievement motivation in a career in the digital age is an encouragement from within the individual to carry out activities in order to seek or obtain the best possible results based on standards of perfection with all the potential and support that individuals have for a career (Tomizh et al., 2022). Individuals who have high achievement motivation will tend to have great energy to persist in doing difficult tasks, until they can actually complete them (Smith et al., 2021). Individuals who have high achievement motivation will tend to have great

energy to persist in doing difficult tasks, until they can actually complete them (Jitsupa et al., 2022). It can be emphasized that achievement motivation in a career in the digital age is motivation that has a goal direction to pursue achievement and develop or demonstrate high abilities of individuals to obtain maximum and commendable results (E. Purwanto, 2022).

Individuals who have achievement motivation in a career can be seen from several characteristics (Werdhiastutie et al., 2020), namely: (1) they prefer situations or tasks that require personal responsibility for the results and not on the basis of fate, chance or chance; (2) determine the value to be achieved or set superior standards and have realistic goals and are willing to take risks; (3) trying to work creatively, namely being persistent and actively looking for creative ways to complete tasks, and preferring situations or jobs where immediate and real feedback is obtained; (4) have a comprehensive work plan and strive to realize goals and prefer to work and compete healthily to outperform others; (5) anticipate that there will be no failure and be able to hold or postpone the satisfaction of their desires for a better future; and (6) are not moved to just get money, status, or other benefits, and prefer to look for opportunities to realize the plans that have been programmed (Singh, 2011). He will look for it if these things are symbols of achievement, a measure of success. Specifically in the academic field, the characteristics of individuals who have this achievement motivation are: (7) tenacity (persistence) in achievement tasks, especially when facing obstacles of difficulty, boredom, or fatigue; (8) prefer to exert energy/effort either in the form of physical or cognitive effort; (9) prefer (choice) involved in academic tasks than others (Kamid et al., 2021; Manik, 2016).

Achievement motivation in a career in the digital age is caused by several factors, namely individual internal factors, concerning: (1) ability, namely the driving force to act through learning exercises; (2) needs, namely deficiencies that cause the will to fulfill them; (2) interest, which is a rather persistent tendency in the individual to feel interested in a certain field or thing and feel happy to be involved in that field; and (3) hope and belief, namely the possibility that is seen to fulfill a certain need of an individual based on past experience; while external factors, concerning: (4) situational, namely circumstances that support or even hinder individuals in achieving their goals; and (5) environment (Nova, 2022; Tambunan et al., 2021). Achievement motivation in a career in the digital age can be influenced by several variables, namely: (1) career

guidance services, (2) self-understanding, (3) understanding of career opportunities, (4) career and future planning; (5) career decisions, and (6) job preparation.

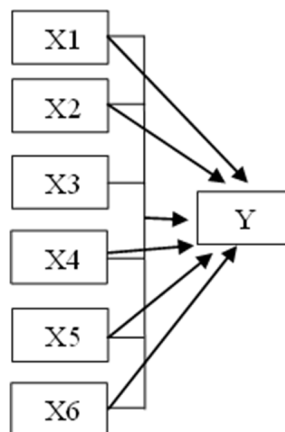
Based on the background and study of this theory, the main problems, formulations, questions, and aims of this study are formulated in the form of research hypotheses, namely: (1) there is a significant influence of "career guidance services" (X1) on "achievement motivation in a career" (Y); (2) there is a significant effect of "self-understanding" (X2) on "career achievement motivation" (Y); (3) there is a significant effect of "understanding career opportunities" (X3) on "career achievement motivation" (Y); (4) there is a significant influence of "career planning and future" (X4) on "career achievement motivation" (Y); (5) there is a significant influence of "career decisions" (X5) on "career achievement motivation" (Y); and (6) there is a significant effect of "job preparation" (X6) on "career achievement motivation" (Y), and (7) there is a significant effect together X1, X2, X3, X4, X5, and X6 on Y.

2 METHOD

This study uses a quantitative method to see the effect of independent variables on the dependent variable (Purwanto, 2022; D. Ma & Zhao, 2022). There are six independent variables and one dependent variable. The independent variables are: career guidance services (X1), self-understanding (X2), understanding of career opportunities (X3), career and future planning (X4), career decisions (X5), job preparation (X6), and one dependent variable, namely achievement motivation in a career in the digital age (Y). The research instrument used to collect data was a closed questionnaire, which was circulated to a number of respondents as a data source. The study population was all students of the Guidance and Counseling Study Program at the Teaching and Education Faculty of Universitas Nias, and the sample was drawn by purposive sampling, namely a study group of 42 students taking Career Guidance courses. Data were analyzed statistically inferential with multiple linear regression analysis, to answer research questions according to the hypothesis that has been proposed. The framework for thinking about this research can be described as follows.

- X1 = Career guidance services
- X2 = Self understanding
- X3 = Understanding career opportunities
- X4 = Career planning and the future

- X5 = Career decision
- X6 = Job preparation
- Y = Achievement motivation in career in the digital age



Information:

1. There is a significant influence of "career guidance" services (X1) on " achievement motivation in career in the digital age " (Y).
2. There is a significant influence of "self-understanding" (X2) on " achievement motivation in career in the digital age " (Y);
3. There is a significant influence of "understanding of career opportunities" (X3) on " achievement motivation in career in the digital age " (Y).
4. There is a significant influence of "career planning and the future" (X4) on " achievement motivation in career in the digital age " (Y).
5. There is a significant influence of "career decisions" (X5) on " achievement motivation in career in the digital age " (Y).
6. There is a significant effect of "job preparation" (X6) on " achievement motivation in career in the digital age" (Y); and
7. There is a significant influence simultaneously X1, X2, X3, X4, and X5 on Y.

3 FINDING AND DISCUSSION

The results of research findings regarding the collective influence of career guidance services, self-understanding, understanding of career opportunities, career and future planning, career decisions, and job preparation, on achievement motivation in a career in the digital age, can be seen in the following tables.

Table 1: Model Summary.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.992 ^a	.983	.976	.225

a. Predictors: (Constant), Career Guidance Services, Self Understanding, Understanding Career Opportunities, Career Planning and Future, Career Decisions, Job Preparation

Table 2: ANOVA^a.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	41,579	6	6,930	137,331	,000 ^b
	Residual	,706	14	,050		
	Total	42,286	20			

a. Dependent Variable: Achievement Motivation in Career

b. Predictors: (Constant), Career Guidance Services, Self Understanding, Understanding Career Opportunities, Career Planning and Future, Career Decisions, Job Preparation

In table 1, an R of 0.992a is obtained which shows that there is a very close relationship between the variables X1, X2, X3, X4, X5, and X6 on the variable Y because the number obtained is 0.992 and is very close to number 1. R Square (R²) which shows a coefficient of determination of 0.983 which is converted into a percent, is 98.3%. This means that the influence of the independent variables: X1 (career guidance services), X2 (self-understanding), X3 (understanding of career opportunities), X4 (career planning and future), X5 (career decision), and X6 (job preparation) on the dependent variable Y (achievement motivation in a career in the digital age) is 98.3%, while the rest is influenced by other variables that have not been studied (1.7%).

In table 2, the results of the F test (ANOVA) or joint regression coefficient test are obtained, to test the significance of the influence of several independent variables on the dependent variable, namely the effect of: variables X1, X2, X3, X4, X5, X6 on Y. The variable referred to are: career guidance services, self-understanding, understanding of career opportunities, career planning and the future, career decisions, and work preparation, whether or not it influences motivation to achieve in a career. The test uses a significance level of 0.05, with the following steps.

a. Hypothesis formulation:

Ho : Career guidance services, Self Understanding, Understanding Career Opportunities, Career Planning and the future, Career Decisions, and Work Preparation, collectively have no effect on Motivation for Achievement in Career in the digital age.

Ha : Career guidance services, Self-understanding, Understanding Career Opportunities, Career Planning and the future, Career Decisions, and

Work Preparation, jointly affect Motivation for Achievement in Career in the digital ge.

b. Determination of Fcount and Ftable at a Significance level of 0.05 with df 1 (number of variables -1) = 6 and df 2 (n-k-1) or 25-6-1 = 18 (n is the amount of data and k is the number of independent variables). From the results of the analysis that has been carried out, Fcount is 137.331 and Ftable is 3.127 or 137.331 > 3.160 (see attachment F test). Hypothesis testing is done by: if Fcount < Ftable (or significance) > 0.05, then Ho is accepted and if Fcount > Ftable or significance < 0.05 then Ho is rejected. Because Fcount is greater than Ftable, the Ho hypothesis is rejected and the Ha Hypothesis is accepted. So it can be concluded that career guidance services, self-understanding, understanding of career opportunities, career planning and the future, career decisions, and work preparation, jointly influence achievement motivation in career in the digital age.

c. The results of the t test were carried out to partially test the regression coefficients, to find out whether the independent variables partially have a significant effect or not on the dependent variable. Partially, it means whether each or one of the variables X1-X6 has an effect on Y. The test uses a significance level of 0.05 and 2 sides, and the steps are as follows.

Tabel 3: Coefficients^a.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-2,115	4,145		-,510	,618
Career Guidance Service (X1)	,451	,093	,455	4,834	,000
Self Understanding (X2)	,121	,149	,130	,809	,432
Understanding Career Opportunities (X3)	,056	,179	,056	,311	,761
Career and Future Planning (X4)	,163	,085	,160	1,914	,076
Career Decision (X5)	,147	,161	,162	,916	,375
Job Preparation (X6)	,080	,214	,084	,374	,714

a. Dependent Variable: Motivation for Career Achievement in the digital age (Y)

In table 3, a constant value of -2.115 is obtained, meaning that if career guidance services, self-understanding, understanding of career opportunities, career planning and the future, career decisions, and work preparation have a value of 0, then achievement motivation in a career in the digital age has a negative value, is 2.115. The regression coefficient value of career guidance services (X1) is positive, which is 0.451, meaning that each engagement of career guidance services is 1%, it will be followed by an increase in achievement motivation in a career of 0.451%, assuming other independent variables have a fixed value. The value of the regression coefficient of self-understanding (X2) is positive, is 0.121, meaning that every 1% increase in self-understanding will be followed by an increase in achievement motivation in a career of 0.121%. The career opportunity regression coefficient (X3) is positive, which is 0.056, meaning that every 1% increase in career opportunities will be followed by an increase in achievement motivation in a career of 0.056%. The value of the regression coefficient for career planning and the future (X4) is positive, is 0.163, meaning that every 1% increase in career opportunities will be followed by an increase in achievement motivation in a career of 0.163%. The career decision regression coefficient (X5) is positive, which is 0.147, meaning that every 1% increase in career decision will be followed by an increase in achievement motivation in a career of 0.147%. The regression coefficient value of job preparation (X6) is positive, is 0.080, meaning that every 1% increase in work preparation will be followed by an increase in achievement motivation in a career of 0.080%. So that every 1% increase in X1-X6 variables will be followed by an increase in achievement motivation in a career of 1.018%. The more the independent variable increases, the dependent variable also increases. Furthermore, the following describes the results of testing the hypothesis of each independent variable on the dependent variable.

1) Testing the variable coefficient of career guidance services (X1) on achievement motivation in a career. Hypothesis formulation:

Ho : Career guidance services partially have no effect on achievement motivation in career in the digital age.

Ha : Career guidance services partially influence achievement motivation in career in the digital age.

From the results of the analysis carried out, the t count is 4.834 and the t table is -2.101 (see attachment t table), which is searched for a significance of $0.05/2 = 0.025$ (2 sided test) with degrees of freedom $df = n - k - 1$ or $25 - 6 - 1 = 18$. The criteria for testing the hypothesis are carried out by:

If $t_{count} < t_{table}$ then Ho is accepted

If $t_{count} > t_{table}$ then Ho is rejected

In conclusion, because tcount is greater than ttable ($4.834 > -2.101$) then Ho is rejected. It can be concluded that career guidance services partially influence achievement motivation in career.

2) Testing the variable coefficient of self-understanding (X2) on achievement motivation in career. Hypothesis formulation:

Ho : Partial self-understanding has no effect on achievement motivation in career in the digital age.

Ha : Self-understanding partially influences achievement motivation in career in the digital age.

Determination of tcount and ttable as well as criteria for testing hypotheses and drawing conclusions is carried out as above. From the results of the analysis performed, it was obtained that tcount was 0.809 and ttable was -2.101 ($0.809 > -2.101$) then Ho was rejected. It can be concluded that self-understanding partially influences achievement motivation in career in the digital age.

3) Testing the variable coefficient of career planning and the future (X3) on achievement motivation in career. Hypothesis formulation:

Ho : Career planning and the future partially have no effect on achievement motivation in career in the digital age.

Ha : Career planning and the future partially affect achievement motivation in career in the digital age.

Determination of t_{count} and t_{table} as well as criteria for testing hypotheses and drawing conclusions is carried out as above. From the results of the analysis performed, it was obtained that t_{count} was 0.311 and t_{table} was -2.101 ($0.311 > -2.101$) then Ho was rejected. It can be concluded that career planning and the future partially influence achievement motivation in career in the digital age.

4) Testing the variable coefficient of understanding of career opportunities (X4) on achievement motivation in career in the digital age.

Hypothesis formulation:

Ho : Understanding career opportunities partially has no effect on achievement motivation in career in the digital age.

Ha : Understanding of career opportunities partially influences achievement motivation in career in the digital age.

Determination of t_{count} and t_{table} as well as criteria for testing hypotheses and drawing conclusions is carried out as above. From the results of the analysis carried out, it was obtained that t_{count} was 1.914 and t_{table} was -2.101 ($1.914 > -2.101$) then Ho was rejected. It can be concluded that understanding of career opportunities partially influences achievement motivation in career in the digital age.

5) Testing the coefficient of the career decision variable (X5) on achievement motivation in a career:

Ho : Career decisions partially have no effect on achievement motivation in career in the digital age.

Ha : Career decisions partially affect achievement motivation in career in the digital age.

Hypothesis formulation:

Determination of t_{count} and t_{table} as well as criteria for testing hypotheses and drawing conclusions is carried out as above. From the results of the analysis performed, it was obtained that t_{count} was 0.916 and t_{table} was -2.101 ($0.916 > -2.101$) then Ho was rejected. It can be concluded that career decisions partially influence achievement motivation in career in the digital age.

6) Testing the coefficient of the job preparation variable (X6) on achievement motivation in career in the digital age.

Hypothesis formulation:

Ho : Partial job preparation has no effect on achievement motivation in career in the digital age.

Ha : Job preparation partially influences achievement motivation in career in the digital age.

Determination of t_{count} and t_{table} as well as criteria for testing hypotheses and drawing conclusions is carried out as above. From the results of the analysis performed, it was obtained that t_{count} was 0.374 and t_{table} was -2.101 ($0.374 > -2.101$) then Ho was rejected. It can be concluded that work preparation partially influences achievement motivation in career in the digital age.

The results of the study have revealed that there is a jointly and partially significant influence (variables X1-X6), is: Career guidance services, Self-understanding, Understanding Career Opportunities, Career Planning and the future, Career Decisions, and Work Preparation, on Motivation Achievement in Career in the digital age (Y). The contribution of the variables X1-X6 to Y is 98.3% and the remainder (1.7%) is influenced by other variables that have not been studied. The more the independent variables increase, the dependent variable also increases.

The form of a learning atmosphere and learning process in a conscious and planned effort from education is carried out to awaken, activate and empower life energy in students or individuals to think, feel, behave, act and be responsible to the end, in order to develop their potential (Lase, 2022; Nurhuda, 2022). The self-potential that is meant to be developed is six educational focuses, as confirmed by the Indonesian Education Law No. 20, 2003, namely: (1) religious spiritual power; (2) self-control; (3) personality; (4) intelligence; (5) noble character; and (6) the skills needed by themselves, the community, the nation and the state (A. Purwanto et al., 2022). This developing self-potential, all of which are needed by students or each individual in planning a proper career and future, and its development requires life energy or achievement motivation in a career (Tjalla et al., 2015; Ginting et al., 2022).

Achievement motivation or achievement motivation in a career in the digital age can be generated, activated, developed, and empowered by counselors through career guidance services. Career guidance is an assistance service provided by counselors to service participants or clients to develop acceptance of oneness and self-image and its role in the world of work (Ho et al., 2022). So that you understand yourself and accept it well and adapt yourself to the world of work that you will enter (Gower et al., 2022). Things that need to be understood and accepted by individuals within themselves, namely all the potential they have, such

as interests, talents, strengths and weaknesses, intellectual, emotional, and spiritual intelligence, physical, psychological, and other similar conditions to adapt themselves to the changing world of work. will be entered (Riastuti et al., 2022). In addition, career guidance services also provide service participants with a good understanding of possible career opportunities to enter, help plan a viable career and future, assist in making career decisions, and help prepare for a career or work. (Mathiesen, 2022). All of this will affect the energy of life or achievement motivation in career in the individual.

Career guidance services provided by counselors to service participants can help individuals understand themselves well for a career, and this greatly influences achievement motivation in a career (Su & Wong, 2022). Talent is an innate ability or potential possessed by all individuals that is gifted by God to each individual and interest is a power that exists within the individual (Warren et al., 2022), which directs him to utilize his free time in doing the things he likes most to do (Guevara-Pérez et al., 2022). Likewise all other potentials, all the advantages and disadvantages possessed, all of which need to be understood by service participants in their careers (Pradas et al., 2022). This self-understanding greatly influences achievement motivation in a career and proper life planning by individual participants in career guidance services.

Understanding career opportunities or job opportunities is a condition that describes the availability of jobs for job seekers (Drymiotou et al., 2021), and possible opportunities to get it in accordance with the talents, interests, potential and all the weaknesses and strengths possessed (Everts et al., 2022). Information on career opportunities and employment opportunities can be obtained by individuals through various sources, such as: newspapers, the internet, the ministry of manpower, educational institutions, service bureaus, and various other sources of information (Boamah et al., 2022). To prepare themselves to enter available jobs, students need to choose the study program to be entered according to the desired career according to future career opportunities (Bulińska, 2021). So prepare yourself well according to the job vacancies that will be entered, including preparing yourself regarding the required job requirements, including what knowledge, attitudes, skills and expertise are needed (Sunarno et al., 2022). This understanding of career opportunities is very influential on achievement motivation in a career and planning a decent future life by individual participants in career guidance services (Vehviläinen, 2021). For this

reason, the introduction of career opportunities needs to be material for career guidance services planned and organized by the counselor.

Career planning and the future make a huge contribution to increasing achievement motivation in career, because this is a process that includes exploring, selecting, and preparing oneself for a career (X. Chen, 2021). In this career planning, individuals are guided to be aware of career opportunities, constraints, choices, and consequences that will be faced, as well as to identify goals in life and life in a career (Demirović et al., 2021). In addition to preparing educational programs that will be pursued in accordance with the career to be entered, the knowledge, attitudes, skills, expertise and experiences required. The steps taken in planning this career are: (1) thinking about what to do, (2) paying attention to interests, talents or abilities possessed, things that are liked, (3) ability to work and values that are believed to be true ; (4) find out the types of careers or jobs that are suitable for the individual, namely talents, interests, and educational background possessed, working conditions, and expected environment, clarity of direction and career focus to be entered; (5) compare the skills and interests possessed with the type of career that will be chosen according to oneself; (6) attend training education in accordance with the career goals that have been made; (7) prepare the necessary costs and (8) ask for help from career guidance services from professional counselors (Magnano et al., 2021; Hirschi, 2021).

Career decisions make a very large contribution to achievement motivation in a career in the digital age, because this is an agile attitude and action after carrying out good career planning (Peng & Lin, 2019). In making this decision the individual develops an understanding of critical and intelligent thinking processes, feels packaged, takes a positive attitude with full awareness, and acts agile with full responsibility (Trisula et al., 2022). There are several factors that can influence career decision making, including: parents, peers, close people in the environment where the decision maker is located, geographical location, educational institutions, political conditions, past conditions such as the job market, workplace, socioeconomic status, community groups, future conditions such as family, historical trends, media, globalization, and various other factors (Omar et al., 2022). These things all affect individual achievement motivation in a career in the digital age and plan a decent life for the future. Work preparation carried out by individuals is very influential on achievement motivation in a career, because it involves various things that need to be

prepared before working (Li et al., 2022; Lane & Sorby, 2022), such as: understanding working conditions, the process of entering a job, requirements, qualifications, the future of work, salary, career development, etc. (Stambulova et al., 2022). Everything needs to be prepared before entering the world of work, and this makes a huge contribution to achievement motivation in career in the digital age.

4 CONCLUSIONS

This study concludes that: career guidance services, self-understanding, understanding of career opportunities, career planning and future, career decisions, job preparation, together and partially provide a very large influence and contribution to motivation to achieve in career in the digital age. The findings of this study reveal that career guidance services make a very large contribution to increasing student achievement motivation in a career in the digital age. Service materials that provide understanding and career opportunities also make a very large contribution to increasing student achievement motivation in a career. Career guidance helps students to plan their careers and the future, in making career decisions, and preparing themselves for work, also greatly contributes to increasing achievement motivation in career in the digital age. Although this research has been successful in increasing student achievement motivation in career in the digital age, some limitations must be acknowledged. First, there are other variables that can contribute to increasing achievement motivation in career that need further investigation. The two samples taken as respondents were limited to only one study group. It is better for future research to enlarge the sample and provide career guidance services to all students so that they have achievement motivation in their careers. Third, what was studied was only limited to the influence of career guidance services with several other variables, and the impact of career guidance courses as a whole on increasing student achievement motivation in career in the digital age has not been investigated.

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Content Analysis of Geography Teaching Materials for Class X Kurikulum Merdeka Belajar - Case Study: Theme 04, Human, Space, and Environment

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Keyword: Kurikulum Merdeka Belajar, Teaching Materials and Projects to Strengthen Pancasila Student Profiles (P5).

Abstract: Teaching materials in Kurikulum Merdeka Belajar have the primary reference that directs educational policies, including being a reference for educators in building the character and competence of students. In addition to providing the benefits of knowledge, it also strengthens students' character. Teaching materials used in schools must be based on the Pancasila Dimension. To analyze the Geography textbook contained in the Social Sciences book using the content analysis method. As a result of the content review, there are several errors in this textbook, including errors in punctuation, sentences, and paragraphs, using wrong concepts and generalizations. As a solution, the development of teaching materials by educators must be adapted to the needs of a large number of students in order to actualize the Pancasila Student Profile Strengthening Project (P5).

1 INTRODUCTION

In Kepmendikbudristek No. 56/M/2022 concerning Guidelines for Implementing Curriculum in the Context of Learning Recovery, curriculum implementation by academic units must pay attention to the achievement of student competence in academic units under particular conditions. It was further explained that in the framework of recovering learning losses that occur in particular conditions, academic units or groups of education units need to develop a curriculum with the principle of diversification following the conditions of the academic unit, regional potential, and students. Learning Loss is a phenomenon in which a generation loses the opportunity to gain knowledge because of a delay in the teaching and learning process. In this case, the learning process is a teaching process, not just overseeing the content but how students get the learning outcomes set.

The central concept of Merdeka Belajar is independent thinking. Indarta (2022: 3012) states that the teacher is free to independently translate the curriculum before it is translated to students so that the teacher can answer every student's needs during the learning process. Independent learning involves

independent conditions in fulfilling the objectives, methods, materials, and evaluation of learning for teachers and students with concepts based on student needs (student-center).

The Kurikulum Merdeka Belajar is one of the curriculum concepts that demands independence from students (Manalu et al. 2022: 81). The independence in question is the freedom of teachers and students in carrying out the learning process that can be obtained through formal and non-formal education. Implementing the independent learning curriculum does not limit the concept of learning at or outside of school but requires the creativity of teachers and students.

According to Manalu et al. (2022: 82) that the presence of an independent learning curriculum aims to answer the challenges of education in the era of the industrial revolution 4.0 towards the industrial revolution 5.0, which in its realization must support skills in critical thinking and problem solving, creative and innovative as well as skills in communicating and collaborate for students. Creative and innovative learning provides more opportunities for students to solve problems, think critically about phenomena that occur in the surrounding environment, and respond well to problem-solving.

The implementation of Kurikulum Merdeka Belajar is based on the dimensions of *Projek Penguatan Profil Pelajar Pancasila (P5)*. Based on the Decree of the Head of Education Standards, Curriculum and Assessment Agency Number 009/H/KR/2022 concerning Dimensions, Elements, and Sub Elements of the Profil Pancasila in the Kurikulum Merdeka, the Profil Pancasila serves as the primary reference that directs educational policies, including being a reference for educators in building character and competence of students. The Profil Pancasila contained in the Kurikulum Merdeka Belajar is meant to be 1) faithful, devoted to God Almighty and noble, 2) Global Kebhinekaan, 3) independent, 4) cooperative, 5) critical reasoning, and 6) creative. *Projek Penguatan Profil Pelajar Pancasila (P5)* is a design to answer questions about the output of the success of the Indonesian education system. "Indonesian students are lifelong learners who are competent, have character, and behave following Pancasila values".

The design of the Kurikulum Merdeka Belajar teaching materials is adapted to the (P5), which has a project-based learning concept (*Project-Based Learning*). The teaching materials are adapted to *e Projek Penguatan Profil Pelajar Pancasila P5's* fundamental principles, namely 1) Holistic, 2) Contextual, 3) Student-Centered, and 4) Explorative. In this case, teaching materials contain essential themes or issues such as climate change, anti-radicalism, mental health, culture, entrepreneurship, technology, and democratic life so that students can understand and take real action in answering these issues according to the stages of learning and their needs. In addition, through teaching materials, students can implement them by contributing to and impacting the surrounding environment.

Teaching materials are all forms of learning resources, both written and written, that assist

teachers or instructors in carrying out learning activities that become materials for students to learn to achieve predetermined competency standards. Sungkono (in (Prabandari 2013: 2) mentions that teaching materials have an essential role for teachers and students because teaching materials can streamline and streamline the learning process. Adjustments in selecting teaching materials must consider the Pancasila Dimension as the primary basis for learning geography. These teaching materials and providing knowledge also strengthen students' character.

2 METHOD

The method used in this research is the content analysis method. Content analysis is an in-depth study of the contents of written or printed information in the mass media. Max Weber (in Eriyanto, 2013: 15) writes that content analysis is a research method using a set of procedures to make valid inferences from texts. Content analysis is a research method for making replicable and valid inferences from data for a context to provide knowledge, new insights, representations of facts, and practical guidance for action (Krippendorff, 1980).

The teaching material to be analyzed is the Social Sciences Book Theme 04, Geography: Human Space and the Environment, the latest student book published in the Freedom to Learn Curriculum. This study uses descriptive content analysis. Content analysis, according to Moleong (2012: 220), is a content study that utilizes a set of procedures to draw valid conclusions from a book or document.

3 RESULT

Table 1.1: Punctuation/Writing Errors.

Source: Results of Analysis of Teaching Materials Theme 04, Geography: Humans, Space and environment.

Page	Paragraph	Sentences	Punctuation/Writing Marks	Correct sentences or writing
218	6	5	For example, bringing a raincoat, umbrella, and jacket is a good idea if you plan to go outside.	For example, if you plan to go outside, bring a raincoat, umbrella, and jacket.
220	10	4	It does not only focus on appearances seen from the outside but also comes to the question: Why do the things we see form a unified pattern?	It not only focuses on the outward appearance but also comes to the question of why the objects we make form a pattern of unity.
233	1	Part a. Location concept. Sentence 2	First	First

Page	Paragraph	Sentences	Punctuation/Writing Marks	Correct sentences or writing
233	1	Part a. Location Concept. Sentence 4	Second	Second
234	1	Part b. Distance concept. Sentence 2	First	First
244	1	Activity Sheet 4. Sentences 1 and 2	Goal no 14 SDGs: Conserve and sustainably utilize sea, ocean, and marine resources for sustainable development. Read this article carefully!	Goal no 14 SDGs: Conserve and sustainably utilize sea, ocean, and marine resources for sustainable development. Read this article carefully!
255	1	Activity Sheet 6 Sentences 2	Please read carefully!	Please read carefully!
255	1	Activity sheet 6. Sentences 3	GSWIR (Green-Short Wave Infrared)	GSWIR (Green-Short Wave Infrared)
255	1	Activity sheet 6. Sentences 4	(U.S Geological Survey)	(U.S Geological Survey)
256	1	Part c. Technology Integration: Geographic Information System (GIS) Sentences 2	Diujicoba (Tested)	Di uji coba (Tested)
266	6	Sentences 3	Antarunsur (Between elements)	Antar unsur (Between Elements)
292	5	-	Marine Mega-Biodiversity	Marine Mega-Biodiversity
296	-	Activity sheet 13 Part 4	Presentasi PowerPoint (PPT)	presentation PowerPoint (PPT)
306	-	Evaluation	Answer some of the questions below as an evaluation to find out your understanding of this passage.	Answer some of the questions below as an evaluation to find out your understanding of this passage.
306	-	Evaluation	Choose the correct answer to the questions below!	Choose the correct answer to the questions below!

Table 1.2: Examples of Vocabulary Errors.

Page	Paragraph	Sentences	Incorrect Vocabulary	Correct Vocabulary
215	-	The critical question, number 2	Bagimana	Bagaimana
225	1	Part B Sentences 2	Fred K. Scafer,	Fred K. Schaefer
220	2	2	Menjadi Obyek	Menjadi objek
250	1	3	Yuks	Yuk atau Ayo
251	2	2	Satelt	Satelit
256	1	2	Ujicoba	Uji coba
270	3	3	Sfera	Lapisan Bumi
286	9	7	Sirrus	Cirrus
286	9	8	Sirrostratus	Cirrostratus
287	9	9	Sirrocumulus	Cirrocumulus
287	9	11	Altokomulus	Alto cumulus
287	9	14	Stratokomulus	Strato cumulus
287	9	17	Kumululus	Cumulus
287	3	18	Kumulonimbus	Cumulonimbus
290	3	4	Kualiats	Kualitas

Source: Results of Analysis of Teaching Materials Theme 04, Geography: Humans, Space and Environment.

Table 1.3: Examples of Sentence Errors.

Page	Paragraph	Sentences	Incorrect Sentences	Correct Sentences
216	1	Sentence 1	Coba amati baik-baik dua gambar dibawah ini!	Coba amati kedua gambar dibawah ini!
221	1	Sentences 5	...gambaranatautulisanpermukaan Bumi(Maryani, 2006)	...gambaran atau tulisan permukaan bumi (Maryani,2006)
225	1	2	Misalnya daerah industry Menunjukkan adanya Pemusatan dan pengelompokan kawasan industri. Kawasan konservasi yang menunjukkan adanya pemusatan wilayah konservasi. Misalnya kawasan konservasi tanah bakau	Misalnya daerah industri menunjukkan adanya pemusatan dan pengelompokan kawasan industri dan kawasan konservasi yang menunjukkan adanya pemusatan wilayah konservasi Contoh: kawasan konservasi tanaman bakau.

Source: Results of Analysis of Teaching Materials Theme 04, Geography: Humans, Space and Environment.

Table 1.4: Examples of Paragraph Errors.

Page	Paragraph	The false main idea	The correct main idea
219	1	Therefore, human knowledge about the natural environment in certain places, includingdifferences and similarities, can be considered geographic knowledge.	Therefore, human knowledge about natureand the environment is geographical knowledge.

Source: Results of Analysis of Teaching Materials Theme 04, Geography: Humans, Space and Environment.

Table 1.5: Examples of Faulty Data and Facts.

Page	Paragraph	Sentences	Data and Facts	The correct data and facts
270	1	1	Indonesia's position, located between three active plates in the world, namely the Eurosia Plate, the Pacific Plate, and the Indian-Australian Plate, is known as the ring of fire with many volcanoes.	Indonesia is located between three active plates in the world,namely the Eurasian, Indo- Australian and Pacific plates.From this position, Indonesiais referred to as the Ring of Fire (Ring of Fire), where many volcanoes cause seismic activity along this zone.



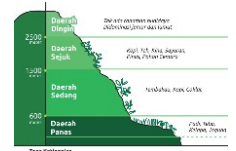
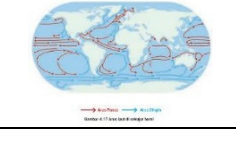
Source: Results of Analysis of Teaching Materials Theme 04, Geography: Humans, Space and Environment.

Table 1.6: Examples of Misconceptions.

Page	Paragraph	Sentences	Incorrect Concept	Correct Concept
283	4	2	Monsoons or wind monsoons are winds that change direction every halfyear	Monsoon winds or commonlyreferred to as monsoon winds,are winds that blow periodically (at least three months),and between one period and another, the pattern will be opposite and change opposite direction every half year

Source: Results of Analysis of Teaching Materials Theme 04, Geography: Humans, Space and Environment.

Table 1.7: Example of Image Error.

Page	Paragraph	Image	Incorrect Image	Correct Image
219	4	Figure 4.5 Mutual help cleans the river of garbage		I am not following the contents of the book being discussed.
234	1	Figure 4.12 The absolute distance from point X to Y is 2500 meters, while the relative distance is 1 hour		It does not include image sources like other images.
237	1	Altitude Zone		Here are no image captions or image sources. Picture captions should be in every picture attached to a book or teaching material.
240	1	Figure 4.15 Map of the distribution of fauna in Indonesia divided by the Wallace and Weber Lines.		Does not include image sources. The source of the image should exist like any other image in this textbook.
241	1	Figure 4.16 Greenhouse effect and global warming infographics		Does not include image sources. The source of the image should exist like any other image in this textbook.
242	1	Figure 4.17 Ocean currents around the Earth		Does not include image sources. The source of the image should exist like any other image in this textbook.

Source: Results of Analysis of Teaching Materials Theme 04, Geography: Humans, Space, and Environment.

Table 1.8: Examples of Generalization Errors.

Page	Paragraph	Sentences	Incorrect Generalization	Correct Generalization
283	4	2	Monsoons or wind monsoons are winds change direction every half year	Monsoon winds, commonly referred to as monsoon winds, are winds that blow periodically (at least 3 months). Between one period and another, the pattern will be opposite and change opposite direction every half year.

4 DISCUSSIONS

Geography learning is learning about spatial relations. The object of study in geography is an object that can be observed, measured, and described using the scientific method. Geographical studies

include physical and social aspects that cannot be separated from human life. Therefore, in developing teaching materials, students can understand a phenomenon and process on the earth's surface not only seen from one phenomenon to another but linked between phenomena and processes elsewhere, even in

previous times. (Rangkuty, 2020: 68).

The development of teaching materials for Class X Social Sciences, Theme 04, Geography: Humans, Space, and Environment, must pay attention to the real conditions of teaching materials in a school. For example, the learning procedures are used by paying attention to the factual conditions of the availability of books. The character and needs of students and the relationship between learning materials and the surrounding environment. The actualization of Profil Pancasila as one of the elements that must be considered can be seen from students' attitudes in implementing the material being taught.

From the results of the analysis that has been carried out based on the content review, there are several advantages contained in this book, including:

1. Holistic. In designing *Projek Penguatan Profil Pelajar Pancasila*, a holistic thinking framework encourages students to examine all themes and see the interrelationships of various things to understand an issue in depth. Geography teaching materials in Social Sciences Books fulfill holistic requirements, namely the existence of a connection between the learning themes and the case studies presented and containing more of the realities of everyday life to make it easier for students to study the teaching materials.
2. Contextual relates to efforts to base learning activities on real experiences encountered in everyday life. This teaching material fulfills the contextual principle in which the presentation of the material always begins with a trigger question regarding the relationship between the material and everyday life related to the activities of students in their environment.
3. Student-centered means encouraging learning subjects to manage their learning process independently and actively. In this case, it is like assigning students in the form of activity sheets or observing an image which requires students to analyze the image.
4. Exploration is related to opening a wide space for inquiry and self-development. Almost all student activity sheets in this teaching material are inquiry processes in groups and individually. Students must actively link geography teaching materials with student phenomena by taking an inquiry approach. It trains students to think critically based on a problem or phenomenon around them.

While the weaknesses contained in Class X Social Science Teaching Materials, Theme 04, Geography:

Humans, Space, and Environment are as follows:

1. Systematic writing in the use of punctuation. It affects students' understanding of the sentence or statement to be conveyed.
2. Using the wrong vocabulary will tend to cause differences in meaning, so in compiling a book, paying attention to the vocabulary to be used is mandatory. The goal is to make it easier for students to understand the material contained in the book.
3. Misuse of sentences. For example, take a good look at the two pictures below! The use of this sentence is very ineffective. Therefore, the improvement of the sentence is to try to observe the two pictures below!
4. Errors in writing paragraphs. A good paragraph must have links to other sentences to reduce the tendency to express an idea.
5. Concepts and generalizations. One of the mistakes in writing is when the writer does not pay attention to the concepts and generalizations of sentences. It will lead to different meanings for students and the book's author.
6. Writing image captions. In this book, some of the images have clear sources and descriptions. However, some of the other images are not captioned. Therefore, the description and synchronization of images to the material explained must be considered to appropriately convey the delivery of material through images.

Projek Penguatan Profil Pancasila (P5) based Geography teaching materials is a learning approach that helps educators be more flexible and contextual. *Profil Pelajar Pancasila* aims to demonstrate character and competence, which is expected to reinforce the noble values of Pancasila in students. Geography is the study of interrelationships between spaces and the impact of these interrelationships. Knowledge of geography is closely related to everyday life. Therefore, the development of geography teaching materials for the independent learning curriculum is a modification of textbooks that suit the needs and characteristics of students.

5 CONCLUSIONS

Students are lifelong students who are competent, have character, and behave according to Pancasila values" is the *Profil Pelajar Pancasila* which is the main requirement in developing teaching materials. Geography teaching materials are an essential


element in supporting the achievement of targets and learning objectives that contain material related to physical and social phenomena that are interrelated in space. Developing independent learning geography teaching materials is a step in developing learning through projects to spur students to be creative and innovative.

Based on the discussion above, the development of geography teaching materials for class X in the Merdeka Learning Curriculum is adjusted to P5 (Projek Penguatan Profil Pelajar Pancasila). Teaching materials that are flexible and contextual and follow students' needs and characteristics. Presentation of material is based on the realities of life and experiences of students and has this impact on students to contribute to the environment and have a good impact in terms of a character on their community environment. In addition to providing knowledge, it also strengthens the noble values of Pancasila.

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Character Education: The Scientific Attitudes in the Digital Technology Era 5.0: Constructivism Theoretical Approach

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Keywords: Character Education, Scientific Attitude, Digital Technology Age.

Abstract: This article attempted to examine and interpret the scientific attitudes (SA) in using digital based on technology for the benefit of everyday life. This article used a constructivist theoretical approach. This theory revealed that a person's attitude, behavior, and potential could be influenced by a certain interaction environment. The descriptive-quantitative was used to be taken references from articles, books, and opinions of experts in their fields with the desk evaluation. The field discussion was about scientific attitudes in this technology age. The scientific attitude was regarded as a person's readiness to accept other people's opinions, views ideas well. Someone's expertise in receiving the information will solve a systemic solution to problem-solving to achieve information disclosure. The analysis's result showed that a scientific attitude is urgently needed by society in technology-based integration: a scientific attitude in giving opinions, a scientific attitude in providing information, a scientific attitude in being curious about other information, a scientific attitude in limited digital capabilities, and scientific attitude in using digital media. So, the minor public attention to the scientific attitude of digital utilization will be a distortion of character education in Indonesia.

1 INTRODUCTION

Technology is not just a tool. Technology is a way to express yourself from reality, for example, the truth” Martin Heidegger (1949). The use of social media in society has brought many visible changes in society (Venkataraman, 2021). According to the Ministry of Communication and Informatics cited mediaindonesia.com, Indonesia has a relatively high rate of internet usage. This is caused by low internet costs and the significant proportion of smartphone users—167 million, or 89% of Indonesia's total population—already use smartphones. The impact of this change could be seen in the high curiosity of the public for information from someone's involvement in other people's conversations, expanding information that it is propaganda, and it is getting involved in cases of people who are considered famous such as celebrities and political figures. Its impact will affect the harmony of a society, if the community uses social media improperly to interact and communicate with one another (Pariutari et al., 2022; Hayati, Suyatno, & Susatya, 2020).

The impact of this change certainly comes from a person's attitude toward understanding and using digital-based social media. Digital-based social media requires understanding and self-assessment of scientific attitudes. Attitude is a person's perspective in thinking, feeling, understanding and interacting with the environment, while scientific implies acceptance of someone in positive thinking with the process of teaching and learning. Wulandari (2022) a scientific attitude is a very important output in the teaching and learning process. Artaga (2021) scientific attitude can be said to be the pioneer of a person's development of activities that develop the ability to think logically. Another opinion about scientific attitude, Latipah, Kistoro, & Khairunnisa (2020) states that scientific attitude is a person's belief or confidence in knowing his ability to realize and implement it in life, by getting support from the community. Nurohman & Suharyanto (2009) states that the meaning of the word scientific attitude does not only have an effective meaning because there is the word attitude, but the word scientific attitude has a broad meaning, including cognitive and psychomotor. (Nurohman & Suharyanto, 2009) cites in Deshpande (2008) dividing several points such as conveying information or data until the data is

sufficient, the ability to process information, the ability to think logically, being aware of one's shortcomings, and the ability to develop oneself and be interested in new things.

Appropriately, digital-based social media makes the positively contribution to society to in favorable way to preserve social peace and personal integrity (Triyanto, 2020). The actual situation differs from this, In Southeast Asia, Indonesia currently qualifies as the nation with the lowest degree of online civility (Ekklesia, 2022; Microsoft, 2020; UNICEF, 2021). Based on the view. Triyanto (2020) people can utilize digital-based social media for a variety of purposes, such as provide to teaching about values and morals that prioritize ethics and respect for the opinions of others. (Pariutari et al., 2022.) gives the opinion that increasing digital human resource education. Beside of that, (Suryawati & Osman, 2018) gives the two-perspective presented above support the idea that humans are required to respect values or morals in the form of respecting the acceptance of other people's opinions, without declaring that the opinion is mistake. (Tari, Hasiholan Hutapea, Tinggi, Kristen, & Kupang, 2020) Ethics, by employing digitally based social media to the community should be taught ethic, value, and morality.

There is stated that the advantages of this digital presence offer a unique presence provide a different view of the learning process on the class (Masrukhin, 2013). Teachers are more flexible to communicate without boundaries and space (Tari et al., 2020). It provides a view that digital has brought people to change their character by prioritizing intellectual intelligence (Amrillah, Rahmaningtyas, Hartati, & Agustin, 2020; Gungum, Justito, & Nunik, 2017). According to Marini (2017); Novianti & Riyanto (2018) that digital and technology have brought significant changes to aspects of thinking, innovation, creative, critical, and communication skills, as well as collaboration skills. In these three views, it can be conveyed that digital either-or technology that is present in society has several visible properties from the use of digital or technology, such as, technology in education has significantly improved several areas of learning and raised the bar academic achievement (Sutarto, 2017; Silvana & Darmawan, 2018).

Furthermore, on the societal level, digital technology age 5.0 has brought about a condition in which societies have experienced a paradigm shift or perspective in integrating, such as face-to-face meetings, which are no longer important (Pariutari et al., 2022). This can be replaced online or offline, its need can be done at home without leaving the house by using applications such as Grab, online-based restaurants and so on. Therefore, technology

interaction between communities can be done digitally, without having to meet in person. On the personal side, digital technology is transforming the human minds creating great technology-based works in design, architecture, fashion, food, and transportation and more.

Technology pointed of view had brought two components such as information and knowledge. Information component is a component for human needs with the surrounding environment, and the knowledge component is a component for creating to discover the novel things.

Based on the view of Mukhopadhyay (2014) that digital technology and characters education includes three components, namely personal, social and moral, there are three main components to its implementations. The development of character education in this digitalization era requires an important point (Maimunah, 2016; Ratnasari, 2019). It is for the sustainability of the development of character education: 1) personal is a form and form of digital running in society, 2) society is a combination of digital technology and society to achieve goals together, and 3) moral is the involvement of values, deeper than digital, individual, and social. It can be said (Arianto, 2021; Pendidikan Tambusai, Siti, Agnia, Furnamasari, & Dewi, 2021.) That reiterated that the development of character education requires 4 (four) principles, namely: sustainability is all subjects are oriented towards the development of character-building development. Values are developed rather than taught, prioritizing the formation national character, namely: religious, honest, tolerance, discipline, hard work, creative, independent, democratic, curiosity, national spirit, love of the motherland, respect for achievement, friendly/communicative, love for peace, love to read, for the environment, care for the social, and responsibility. Therefore, Zahri Harun (2013) (cited in Likona, 2019) describes the character consists three aspects moral knowing, feeling, and action. Based on this statement, (Aspirasi Konstitusi & Sugeng Bayu Wahyono Atien Nur Chamidah Badan Pengkajian Majelis Permusyawaratan Rakyat Republik Indonesia, Herwin Wuri Wuryandani Vinta Tiarani, 2011) gives the clear point of character (cited Megawangi) love of God and truth, responsibility discipline, and independence, trust, respect and courtesy, compassion, caring, and cooperation, confident, creative, and never give up, fair, and spirit leadership, kind, humble, tolerant and peace-loving. Based on the above explanation, personality plays an important role in all forms of human activity (Şener, Türk, & Taş, 2015). Based on the figures above, the writer might take the view that the character for a

scientific attitude. It is a character that is based on the competences to think, act, and feel on things that have logical that can be accepted by anyone. It is pointing include making a meaning, strong feelings, or attention in the execution of thoughts, actions and feelings.

2 METHODS

The method used a qualitative descriptive approach which was the main source of research for the researcher themselves (Silvana & Darmawan, 2018). This article was the usage theory a constructive approach which emphasized that a person's behaviour could be influenced by the interaction environment. The data sources for this article were books, journals, and expert opinions on public scientific attitudes in using digital-based social media served as data sources for this article. The authors used a desk-assessment approach for the data collection process. We need to delve deeper into information and knowledge to understand theories, problem backgrounds, theoretical studies, and insights into social issues via social media.

3 RESULT AND DISCUSSION

Character education shows how someone takes initiative, makes decisions, and solves problems (Ratnasari, 2019). Character education and scientific attitudes are inseparable parts of the current digital technology age (Şener et al., 2015). In current digital age, constructivist theory is the fundamental element that cannot be separated from character education and scientific attitudes in this digital technology age phenomenon. According to this view, this theory believes that all human activities are impacted by environmental interactions. The environment is a person's main source of learning (H. Dadang Supardan, 2016). Some views say that constructivism can change a person's character, and make that character dominant to their characters (P. Pannen, Dina Mustafa, & Mustika Sekarwinahyu, 2001). This point tells to us that constructivist theories and scientific attitudes require us to be able to distinguish between environmental influences and scientific attitudes that arise from digital technology.

In the past, a few of people would be happy if they met privately in certain situations and conditions. Since people have problems that person will be asked to meet directly with that person. In our digital age, these things rarely find. This will become a problem

for society in maintaining integrity and harmony of society, if these matters are not addressed with a scientific attitude. Based on the discussion above, it was observed that Indonesians' use of digital media is depend on their civility in the digital space, as measured by the Microsoft Digital Civility Index (DCI), Indonesia may be told a country which it ranks 29th out of 32 countries for its poor utilization of digital technology as media (UNICEF, 2021); Microsoft, 2020; Ekklesia, 2022).

The scientific attitude in the digital era is no longer a global issue or phenomenon, but it has become a societal problem, so it is no one has been able to provide a solution to this phenomenon. The finding of this study clearly showed that scientific attitudes towards the digital age 5.0 are:

3.1 Scientific Attitude in Giving Opinions

One of the foundations of democracy is freedom of expression. Giving an opinion is the right of every human being. As a component of a democracy-based political system, freedom of speech has been protected by the law. However, in reality, we still see the general public using the term freedom of expression which is far from expectations (Triyanto, 2020). This is based on the symptoms that are easily expressed to other people in contemporary culture through digital or technological tools, without taking into account the symptoms themselves (Turnip & Siahaan, 2021). It is possible to develop critical thinking abilities by adopting the following four principles: a) store truth rather than argument; b) give priority to thinking insight; and c) use several sources of information.

3.2 Scientific Attitude in Providing Information as Digital Technology Age

There is a view in society that it is possible to provide any information to other people. Paisal, M, et al (2021) said that technology information had led of the people to live easily with the different goal. Scientific attitude given others may be quite good (Amrillah et al., 2020). However, the problem that occurs is providing information without seeing the truth of the information, so they tend to believe that the information is correct. This trend occurs in society in the current digital age (Baltaci, 2022). Not a few of our people provide information without look into the truth, authentic and legitimacy of the information. Based on the points above, a scientific attitude should

a) prioritize the truth of information rather than information needs, b) prioritize data and facts, c) seek the validity of news from experts, d) increase the values of communication literacy, e) to seek information from reliable sources.

3.3 Scientific Attitude in Curiosity for Other Information

Curiosity is one of the qualities shared by human (Buckingham & Buckingham, 2020). The curiosity of humans then gave birth to thinkers or philosophers of scientific study (Babiker, 2015). However, this reality is beyond what was expected. The scientific attitude that should be born in this case is human curiosity in scientific or knowledge. The fact that we see proves that human curiosity is more about other people's problems and other people's ugliness (Turnip & Siahaan, 2021). The scientific attitude that a person should have, namely: a) viewing knowledge as part of the experience, education and teaching, b) knowledge is a medium for discovering other knowledge with the argument of scientific, c) believing that everyone has secrets that should not be shared.

3.4 Scientific Attitude Within the Limits of Digital Technology Capabilities

In our digital age, awareness and self-control of things in this digital era are highly demanded. Digital may be said it is a media. It means that it expects to help all forms of material needs and financial needs. Digital media is a means of media for its users to communicate without being limited by space and time (Ergado, 2019). However, these digital capabilities have weaknesses and short comings that everyone should be aware of. This deficiency can be seen from the lack of honesty and understanding of a matter. Based on this level, the scientific nature of a person is: a) digital gives space and time to anyone who uses it without meeting face to face, b) digital bridges one's needs with more practical, c) reveals that social peace is not always possible in the digital world, d) digital provides a narrow space for honesty, e) destroys a feeling of family; and digital f) creates opportunity for criminal activity.

3.5 Scientific Attitude in Using Digital Technology as Media

Digital technology as media during the age of digitalism, its use was paid more attention to the accuracy of conditions and situations (Maharani, 2022); Turnip & Siahaan, 2021). This phenomenon is

a rare thing for some people to understand. The habit of people utilizing digital technology as media is more to its practical use. Everything can be done using a digital-based application. This of course will lead to low patient nature, more want to be achieved quickly. The idea that learning is a process is at odds with phenomena. The process will lead someone to master a certain field, and with the process experience and mastery of knowledge will be better. Based on this point, we can adopt a scientific attitude, namely: a) digital technology as media is a communication tool that is conditioned in certain situations, b) digital technology as media provides an opportunity to know something, but learning through the process will be better, c) digital technology offers conveniences for its users, but social harmony will be improve by always meeting offline, d) there is a sense of dependence on the use of digital technology media to create fulfilment of information needs.

One explanation for this phenomenon in our society in Indonesia is a scientific attitude in actualizing the functions, benefits, and goals of digital social media requires a deep understanding of the value of humanity and the value of respecting a person. It is meant that putting one self in the position of another person.

4 CONCLUSION

This research was limited by the fact that character forms part of the attitude that describes a person's activities in routines. Digital technology age provides opportunities for human activities to more practical things, and put aside process matters. A scientific attitude should be built since humans are familiar with digital technology as the media to connecting by the other activity and people around them. It is an effort to prioritize human values. Digital technology age is built with the power of humanity that is assimilated by culture, custom, religion, norms, politics, society and education. Thought this, a scientific attitude is developed, it is called digital consciousness. And with this phenomenon, parties who feel they have the authority and power to restore the digital field in aspects, namely: a) a scientific attitude in giving opinions, b) a scientific attitude in providing information, c) a scientific attitude in being curious about information others, d) scientific attitude within limited digital capabilities, and e) scientific attitude in using digital media.

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Suitability Level of School-Based Curriculum: An Analysis on English Reading Material

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Keywords: Wajar, Reading Texts, School-Based Curriculum, English Textbook.


Abstract: The purpose of this research is to analyze the reading materials contained in the WAJAR (Penunjang Wajib Belajar) textbook published by Graha Pustaka and used for junior high school students with school-based curricula, specifically to identify the genres of the reading materials and to explain the suitability of the reading materials contained in the WAJAR textbook with school-based curricula (KTSP). With a documentary study, the author used a descriptive and qualitative design. The reading texts in the WAJAR textbook, which is used in junior high school with a school-based curriculum, are the source of data. The textbook contains 11 different types of text as a result of the results. The WAJAR textbook contains a variety of text types. Report text, descriptive text, analytical exposition, hortatory exposition, and procedure text are all covered in the book. The reading text contained within the textbook explicitly identifies all of the text's generic structures. According to the findings, some language features are not used proportionally in the reading text. In each text type, certain language features were missing. The reading text contains only two to three of the five language features. Not all reading indicators are developed through textbook reading activities. The calculated suitability level was only 65.21 percent (suitable enough), indicating that there is still unsuitability in the WAJAR textbook. Some reading indicators are not included in the reading materials. There are some missing sections that explain why the indicators are not fully elaborated and evaluated in the WAJAR textbook's reading texts.

1 INTRODUCTION

Some teachers find it difficult to choose the best textbook. Although many textbooks claim to be curriculum compatible, there is no guarantee that the textbook is relevant to the curriculum's standard competencies (Tyas and Safitri 2019). A good textbook contains lessons and exercises that can be used as activities to help students master their language skills. One of the most important language skills is reading. It is an English skill that students must master when learning the language. As a result, if students want to master English, they must learn reading as well as the other skills. Reading is a fluid process in which readers combine information from the text with their own prior knowledge to construct meaning (Nunan 1999)

"reading can be viewed as a "interactive" process between a reader and a text that leads to automaticity or (reading fluency)". Reading is assumed to be a non-passive skill because it requires so much practice and exercise (Alyousef 2005). The readers' comprehension improves based on how they work on it. It means that as readers read more, their reading or comprehension improves. Essentially, teaching reading is the process of conveying or guiding students to gain some important message and meaning from written text. The majority of students enjoy reading English-language written materials such as books, novels, newspapers, articles, and texts. Reading skills are developed in Junior High School English lessons. The development of reading skills, particularly in the analysis of various types of text, is required in Junior High School English lessons.

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Teachers should consider the learning materials used in the classroom when teaching and learning (Setyaningsih 2019). A textbook is one of the most common types of learning materials. It is a type of printed material that is necessary for teaching and learning. A textbook (Ur 1996), is the primary learning material that teachers and students typically use. A textbook has numerous benefits in the teaching and learning process (Gholami, Noordin, and Rafik-Galea 2017). To enable students to learn English materials, they require high-quality English textbooks. They can improve their English skill productivity by learning from quality textbooks. There are different kinds of good books. First, the textbook's contents should be relevant to the current curriculum; it may be from the genre that should be available in the textbook. The textbook's contents correspond to the level of study as well. The second category is a textbook, which should have an appealing display to entice readers to read the book. Furthermore, the textbook's language should be corrected in context and situation. It means that the language is free of ambiguity, allowing the reader to understand it easily (You, Lee, and Craig 2019).

Some factors influence students' comprehension of the text. These factors can be attributed to the teacher, the students, the materials, or the media used by the teacher. The first issue stems from the teacher. The teacher does not pay attention to what students require in terms of reading. The second issue stems from the students. The students' command of the English language remains limited. As a result, they have difficulty deciphering the meanings of difficult words (Noprianto and Purnawarman 2019). The students are also unable to identify the main idea. They can't find specific information in a text. As evidenced by their behavior in class, the students lack motivation to read. They are oblivious to the teacher's explanation (Imamyartha et al. 2019) The materials are the third issue. The materials used also play an important role in dealing with the students' reading comprehension. Materials are the foundation of the knowledge that is passed on to students. In fact, the majority of the material being taught was dull and monotonous. As a result, the students were uninterested in engaging with the material. As a result, they would be unable to read well. The final issue is the teacher's use of media. Another important factor is the media. The materials taught can be effectively delivered through media (Leong and Ahmadi 2017).

2 LITERATURE REVIEW

2.1 The Nature of Reading

Many definitions of reading can be found in various sources. Reading is the act of converting written symbols into corresponding sounds. Furthermore, (Strang 1991) defines reading as more than just seeing words clearly or correctly pronouncing printed words; it also requires us to think, feel, and use our imagination. For example, when we read a novel, we must imagine how the character feels and how the setting is in the story. (Grellet and Francoise 1981) Reading, is an active skill that is demonstrated by eye movements to recognize written symbols and, on occasion, by pronouncing or reading aloud. While reading, we are not only pronouncing the text but also learning its meaning. Reading is a type of thinking in this context (Cortina and Elder 2002). It means that during the reading process, the brain reads in order to associate knowledge and experience with the text.

People read for a variety of reasons and employ a variety of strategies. In reality, people read to learn. Furthermore, people read for pleasure. Some strategies also follow people while they read. (Grellet and Francoise 1981) divides reading into four goals in his book: skimming, scanning, extensive reading, and intensive reading. People quickly skim the text for general information. Scanning is done by people who read a text quickly in order to extract specific information from it. Extensive reading is a difficult activity in which people are required to read some texts in order to gain more information, but the texts used are usually chosen by the reader. In contrast to extensive reading, intensive reading requires the reader to read a number of short texts in order to obtain specific information.

According to Jeremy Harmer (1983), a variety of school-based curriculum exercises can be used to achieve a number of reading objectives, including the following:

- a. Reading to confirm expectation
- b. Reading to extract specific information
- c. Reading for communicative tasks
- d. Reading for general understanding
- e. Reading for detail comprehension (information)
- f. Reading for detail comprehension (function and discourse) (Grabe 2022), on the other hand, believe that reading purposes can be divided into seven categories. They are as follows:
 - a. Reading to search for simple information
 - b. Reading to skim quickly
 - c. Reading to learn from text
 - d. Reading to integrate information

- e. Reading to write
- f. Reading to critique texts
- g. Reading for general comprehension

2.2 Textbooks

A textbook is intended to meet and support the educational needs of students. A textbook is best viewed as a resource for achieving pre-determined goals and objectives in terms of what learners require. A suitable textbook should cover the necessary indicators of a lesson learned by students. According to (Cunningsworth 1995), textbooks play multiple roles in ELT. A textbook can be any of the following:

1. a resource for presentation-related spoken and written material.
2. a source of activities for learners to practice and interact with.
3. A grammar, vocabulary, and pronunciation reference for students.
4. a source of stimulation and ideas for classroom language activities.
5. a syllabus where they reflect learning objectives that have already been determined.
6. a resource for self-directed learning or work.
7. support for less experienced teachers who have yet to gain confidence.

In most language programs, one of the instructional materials is a textbook (Novianti, Syihabuddin, and Rochyadi 2019)

2.3 Text Type

Text is an essential component of reading activities. It appears in passages. In senior high school, students learn nine different types of reading texts, according to the curriculum: procedure text, narrative text, banner, poster, pamphlet, report text, analytical exposition, spoof text, and hortatory exposition. Here are some explanations about those types of texts from various sources (Anderson 1969):

- a. Procedure Text
- b. Narrative Text
- c. Functional Text (Banner, Poster and Brochure)
- d. Report Text
- e. Analytical Exposition
- f. Spoof Text
- g. Hortatory Exposition

2.4 School-Based Curriculum (KTSP)

The curriculum is the most important aspect of the teaching and learning process. A teacher should teach his or her students according to the current curriculum because it has been designed to meet the needs of the

students. According to Feez, "a curriculum is a general statement of goals and outcomes, learning arrangements, evaluation, and documentation relating to the management of programs within an educational institution."

In Indonesia, the school-based curriculum (KTSP) is still being implemented. The KTSP is designed to tailor education to the characteristics and needs of individual schools (Hermtaqaen, Sata, and Wadu 2019). It means that the school has been given permission to create indicators based on the school's characteristics and needs.

There are some operational references for arranging KTSP in Education Regulation Number 20 for 2003:

- a. focused on learners' potential, development, needs, and interests; and their environment.
- b. varied and integrated.
- c. responsive to the development of science, knowledge, technology, and art.
- d. Comprehensive and ongoing
- e. relevance to life's needs.
- f. Lifelong learning is essential.
- g. Keeping national and regional interests in check.

According to (Ahiri 2007), KTSP is an operational curriculum that is organized and carried out by educational units and consists of educational unit goals, the structure and content of KTSP, the education calendar, and syllabuses, there are six components of KTSP, which are as follows:

- a. Vision and mission of school
- b. Educational goal of school.
- c. Educational calendar.
- d. Syllabuses.
- e. Lesson Plan.
- f. Structure of Subject matter curriculum.

2.5 Related Studies

The curriculum is the most important aspect of teaching and learning. A teacher must educate his or her own students. Other researchers had previously conducted a number of studies. They are as follows:

1) Syafniar and Rusda Ayu conducted a study titled "The Analysis of the Reading Materials in English AliveTextbook Based on School-Based Curriculum for Second Grade Students of Senior High School" (2014). According to the findings of this study, 85.7% of the text-based curriculum in the textbook meets the KTSP text-based curriculum, 87.5% of the reading indicators meet the KTSP indicators, and 100% of generic structures and linguistic features meet the KTSP requirements. The reading material has a 93%

overall rating. It achieves excellent results in terms of conformity level criteria.

2) (Syahbana and Pratama 2017) carried out a study titled *The Analysis of English Reading Texts Based on National Character and Cultural Education in the Tenth Grade Course Book at the Pamekasan State Senior High School*. This research is based on the observation that many books, particularly reading texts, contain inappropriate content. The author discovered 13 values that were inserted in 17 reading texts, but the rest were not; additionally, there were several ways of reading texts to reflect values.

3) (Simanjuntak et al. 2021) carried out another study titled *"Content Analysis of the Student Book "When English Rings a Bell" for Grade VIII Junior High School*. The purpose of this study is to compare the cognitive and psychomotor domains of learning between the materials in the student book *"When English Rings a Bell"* for grade VIII junior high school and the Core and Basic Competence in the 2013 Curriculum. According to the findings of this study, there are 29 materials in the textbook that are relevant to the cognitive domain, or approximately 78.37 percent; 4 materials that are partly relevant, or approximately 10.81 percent; and 4 materials that are irrelevant, or approximately 10.81 percent. In terms of the textbook's relevance to the psychomotor domain, there are 15 relevant materials, or approximately 38.46 percent; 14 partially relevant materials, or approximately 35.59 percent; and 10 irrelevant materials, or approximately 25.64 percent.

4) Erlangga published another study titled *"An Analysis of Reading Materials in Bright: An English Course for Junior High School Students, Year VIII."* Ririn Pusparini's curriculum is based on the 2013 English Standard Curriculum (2014) The research design for this study was descriptive qualitative research. The data collection instrument is observation in the form of checklists. Following an examination, it was discovered that all chapters in the first semester do not adequately cover the indicators of cognitive aspects in the three basic competences. Meanwhile, some of the reading materials are unrelated to psychomotor aspects. After all, the researcher contends that this textbook can still be used because the materials are mostly relevant to the 2013 curriculum. This textbook can still be used to assist teachers and students in the process of teaching and learning, but it is not fully suitable for reading.

This study differs from previous studies in some ways, such as the object of the study, method, analyzing technique, and textbook, but it still has some similarities. It means that this research is one-of-a-kind, distinct, and original.

3 METHOD

3.1 Research Design

The purpose of this research was to examine the reading material in the WAJAR (Penunjang Wajib Belajar) textbook published by Graha Pustaka, which is used for junior high school students in SMP Negeri 3 Ratahan with a school-based curriculum. The author employed both descriptive and qualitative design. Rather than numbers, qualitative research focuses on describing phenomena through verbal narratives and observations (Brown, R. N., 2014). The author used a checklist of observations to back up his description of the reading material. The data would be analyzed descriptively rather than statistically. The textbook is 112 pages long and divided into three major chapters. Language skills are presented separately in each chapter. The textbook includes reading material for all chapters.

3.2 Source of Data

The data resource, according to Arikunto (2006), is the subject from which the data can be obtained. The reading texts found in WAJAR (Penunjang Wajib Belajar), a textbook published by Graha Pustaka that is used for junior high school students in SMP Negeri 3 Ratahan with school-based curriculum, are the source of data in this study.

3.3 Data Collection

There were two kinds of data namely quantitative data and qualitative data (Karnedi, Zaim 2021). The writer used documentation studies to collect data. Documentation study may refer to the technique of gathering and analyzing documents used to collect data, whereas a document is any communicable material, particularly text in this study, used to explain some attributes of an object, systems, or procedures. To arrive at a conclusion, the qualitative data, which is represented by words and sentences, is categorized. The researcher follows three steps in conducting this research:

1. Reading

The first step is to read WAJAR (Penunjang Wajib Belajar), a textbook published by Graha Pustaka and used by junior high school students at SMP Negeri 3 Ratahan who follow a school-based curriculum.

2. Identification

After reading the reading text in the English textbook, the researcher will identify the school-based curriculum of each text.

3. Classification

The classification process is the next step in this research. The researcher in this case categorizes the text based on its school-based curriculum. In order to classify the text, the researcher created a table. The researcher classifies the text based on its school-based curriculum. The researcher created a table while performing the classification. The data was numbered in the first column. The second column contains the name of the genre found in Graha Pustaka's WAJAR (Penunjang Wajib Belajar) textbook, which is used for junior high school students in SMP Negeri 3 Ratahan with school-based curriculum. The third column contains the number or page of text.

When conducting research, the researcher requires references that are relevant to the study. They were there to help me analyze the data. The writer will go through the following steps when gathering references:

- a. I'm searching the internet for any study-related materials.
- b. searching the library for books on the subject.
- c. Looking through the library for any thesis related to the study

A documentary study was used to collect data for this study. The goal of this research was to obtain a description of the relevance of the reading material in the WAJAR (Penunjang Wajib Belajar) textbook published by Graha Pustaka and used for junior high school students in SMP Negeri 3 Ratahan with a school-based curriculum. First, the researcher chose reading material from the textbook. Second, the writer analyzed the relevance of the reading material in the textbook with the school-based curriculum in terms of cognitive aspects and the relevance of the school-based curriculum in terms of psychomotor aspects using the available observation checklist. Finally, the researcher examined and expanded on the data and findings from both observation checklists.

3.4 Data Analysis

Following the collection of data, the following procedures were used to identify the elements of the reading passages in WAJAR (Penunjang Wajib Belajar) published by Graha Pustaka based on the elements of the textbook used for junior high school students in SMP Negeri 3 Ratahan with school-based curriculum:

1) Thoroughly read WAJAR (Penunjang Wajib Belajar), a textbook published by Graha Pustaka, is used for junior high school students at SMP Negeri 3 Ratahan who follow a school-based curriculum.

2) Identifying the school-based curriculum of the reading materials in the textbook based on the data deemed necessary.

3) Identifying the social function of the textbook's reading materials based on the data identified as necessary.

4) Identifying the generic structure of the reading materials in the textbook based on the data designated as necessary.

5) Using the characterized data, identify the language features of the textbook's reading materials.

6) Linking the reading materials to KTSP or school-based curriculum indicators.

4 FINDINGS AND DISCUSSION

4.1 Text Type Analysis

WAJAR (Penunjang Wajib Belajar) textbook published by Graha Pustaka contains five school-based curriculums of text.

Table 1: Number of articles published in IJAL from 2011 to 2016.

Genre	Text	Unit/ Page
Report	<p>Tractor</p> <p>A tractor is an example of modern farm machinery. Most farmers use it because it is faster than a traditional one. Do you have a tractor? Of course, it is difficult to use if we never see or use it. Please pay close attention as I demonstrate tractor operation. Of course, the first step is to prepare the solar fuel. Sit down and turn on the tractor when it is ready on the land. Accelerate and move the steer depending on which land or soil you want to lose. Do you understand what a plough is? Plowing is also used to remove soil. It is a piece of traditional farming equipment. This is how a plough is used. To begin, ensure that your plough is ready to use. Make sure the cows or buffaloes are ready to pull the plow. Then, place them on the land you intend to cultivate. The animals will walk if you hit them, and the plow will be ready to work. All you have to do is hit and point.</p>	3/ 91

Genre	Text	Unit/ Page
	<p>Parque Central Complex</p> <p>The Parque Central Complex towers are twin 56-story structures. In Caracas, Venezuela, the buildings are latticed. With a height of 225 meters, the towers are the tallest structures in the country (738 ft). President Rafael Caldera authorized the construction of the tallest building in Latin America, as well as the italo-venezuelan entrepreneurial spirit. Delfino primarily used his "Constructora Delpre" to construct the skyscraper complex. The east tower was finished in 1979, and the west tower was finished in 1984. The towers are named after a green oasis in the heart of Caracas' urban jungle, but they are still surrounded by a vast complex of office buildings and amenities. The inside view provides a panoramic view of the city and the surrounding mountains. However, in April 2003, both towers were surpassed in height (by an estimated 5 m) by Mexico City's Torre Mayar, making them no longer the tallest buildings in Latin America, though they remain the tallest in South America. On February 14, 1982, high-rise firefighting and rescue advocate Dan Goodwin scaled the outside of the Parque Central Complex at the invitation of Venezuelan television company Venevisión. A fire broke out in the east tower on October 17, 2004. The incident caused damage to at least ten floors. The fire began on the 34th floor and spread to the 44th floor of the building. These levels housed important government offices. An inquest was being held at the time on the activities of these offices. It suffered critical damage as efforts were hampered due to low water pressure and a lack of firefighting equipment. Military helicopters attempted to douse the flames with water from above. It was also feared that the steel structure would be severely damaged, causing it to collapse. As of May 2009, the east tower was still undergoing major repairs as a result of fire damage. The reopening is scheduled for the second semester of 2009.</p>	1/ 40
	<p>What is planet?</p> <p>When the ancient Greeks studied the heavens, they noticed points of light moving back and forth against a background of seemingly fixed stars. These moving lights shone steadily, rather than twinkling like the stars. The Greeks referred to these celestial bodies as planets, also known as "wanderers." Planets are now understood to be bodies that, like the</p>	1/ 45

<p>Earth, revolve around a star known as the sun. Planets do not emit their own light, but rather receive it from the sun. Our solar system contains nine planets that revolve around our sun, in addition to the Earth. Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, and Pluto are in order, moving a pi/3rd from the sun. The first four planets are known as the inner planets, and they are mostly solid. Mercury is the smallest planet; Venus is visible as the Evening Star in the western sky; and Mars appears red to the naked eye. The others are known as the "outer planets," and the first four are thought to be solid, while Pluto is thought to be solid. Jupiter is the largest planet, about 1,000 times the size of Earth, and has twelve satellites; Saturn has three beautiful rings; Uranus has five satellites, and Neptune has two; Pluto was discovered in 1930. Other stars in space are likely to have planets as well, but because planets emit no light, we cannot detect them with our current instruments.</p>	
<p>Orangutan</p> <p>Orangutans, also known as Pongo pygmaeus, are primates. The orangutan spends the majority of its time in trees. It constructs a new treetop nest every evening. They are threatened by habitat loss, and poachers continue to kill, own, and export orangutans. They can only be found on the island of Borneo and in the northern corner of the island of Sumatra. Orangutans have rough, long, reddish-brown fur. Male orangutans are 95 cm (37 in) long and weigh 77 kg (170 lb). Females are smaller, standing about 78 cm (31 in) tall and weighing only about 37 kg (81 lb). The male has puffy cheeks and a hanging throat pouch. This pouch contains air sacks that aid in the production of a groan. The male has puffy cheeks and a pouch hanging from his throat. This pouch contains air sacks that contribute to the production of a groaning, bubbling call that can be heard for at least 1 km (0.6 mi). Fruit accounts for half of the orangutan's diet, but they also consume meat. Young leaves, soft inner bark, termites, eggs, and, on rare occasions, monkeys are consumed. A female will seek out an adult male when she is ready to mate. Orangutans are mammals, and females give birth to a single child every four to eight years. Orangutans have a gestation period of just under nine months, which is nearly identical to that of humans. Infants remain extremely close to their mothers for the first three years, until they no longer require their mothers' milk.</p>	3/ 109

Genre	Text	Unit/ Page
Descriptive	Dolphins Dolphins are marine mammals. They must breathe air in order to survive. They belong to the Delphinidae family. Dolphins have velvety skin. Only newborn dolphins have a few bristly hairs on their snouts. The hair quickly falls out. They have a long tail and a fin on top of their backs that prevents them from rolling over. When female dolphins dive deep, they have a thick layer of fat under their skin to keep them warm. Flippers are the dolphin's front fins. They use them to make left and right turns. Dolphins can reach lengths of 2 to 3 meters and weigh up to 75 kilograms. Dolphins hunt in large groups. A "pod" is a group of dolphins. Fish, shrimp, and small squid are among their favorite foods. They live in saltwater oceans. When dolphins hear or see a shirr nearby, they approach it and follow it for several kilometers. Dolphins can perform somersaults and leaps out of the water. After watching other dolphins perform, they sometimes invent their own tricks and stunts. Dolphins are extremely friendly and have never harmed anyone. They are very amusing animals.	1/ 47
	What is an Astronaut? The term "astronaut" is derived from the Greek words "astron," which means "star," and "nautes," which means "sailor." Astronauts are people who pilot, navigate, and fly spacecraft. Cosmonauts are Russian "star-sailors," with "kosmos" being the Greek word for "universe." In 1961, Yuri Gagarin, a Russian, made the first space flight. It lasted a little more than 89 minutes.	1/ 49
Procedure	Windssocks To make a wind sock from a plastic bottle, first cut the top and bottom of a two-liter bottle to create a perfect cylinder. Then, using a hole punch, make four evenly spaced holes on top. Tie a 12-inch piece of fishing line to each hole after that. Then, connect all four to a large fishing swivel snap. Sand the bottle and then paint it with whatever design you want. When it's dry, poke holes every inch around the perimeter. Then, in each hole, tie a 3-foot piece of ribbon. Colors can be varied or all the same. Finally, hang up the phone and relax. The words in the box may assist you in comprehending the text.	2/ 59
	How to Make Your Own Compost Compost is the most nutrient-dense fertilizer available. And with a little effort, you can make it yourself. Compost is made up of decomposing organic matter. Compost can be made from leaves, grass,	2/ 62

	decomposable kitchen scraps, and even hair clippings. These materials are layered with soil, manure, or a high-nitrogen fertilizer in a container (or pile). Begin by layering dry "brown" materials such as wood, dried leaves, sawdust, or straw. Add a layer of moist "green" materials from your garden, such as grass cuttings, fruit and vegetable scraps, coffee grounds, eggshells, or prunings. Continue to add layers, alternating "green" and "brown" materials with soil and manure. According to the recipe, the mixture should be kept warm, wet (with a hose once a week to keep the entire mixture moist), and aerated. Every week or so, it will need to be turned or mixed. If your compost isn't decomposing, add chicken manure or bone meal (for nitrogen). The compost will be ready to use in your garden in 2-3 months! When your compost is dark, combustible, and resembles soil, it is ready. Mix compost into the soil around existing plants once or twice a year. Work into the soil liberally to prepare new planting areas. spread around the base of shrubs. Although compost can be made in an open pile, using a bin will yield faster results. A small kitchen compost carrier can be hung on a cabinet door or set on the counter. Larger yard bins are now available for purchase everywhere. There should be no use of animal byproducts (meat scraps, grease, bones), milk or dairy products, dog or cat droppings, cardboard, or diseased plants.	
Analytical Exposition	Plastic Plastic has now become an important part of modern life. Most of the things around us contain or are made of plastic. Our blankets are made of nylon, a type of plastic. The carpet is made of plastic. We write with plastic ballpoints or pens. The pans and pots we cook in, the toys our children play with, and even the cars we drive with all contain significant amounts of plastic. Do you use a computer for work or recreation? Some parts of your computer are made of plastic. Plastics have some advantages. They are relatively inexpensive to produce. Some plastics are as hard as stone and as strong as steel. Some plastics are as clear as glass. They are relatively inexpensive to manufacture. Some plastics are as tough as steel and as hard as stone. Some plastics have the transparency of glass, the lightness of wood, and the elasticity of rubber. Plastics can be made in virtually any color and are lightweight, waterproof, and chemically resistant.	3/ 64

Genre	Text	Unit/ Page
	<p>What is the Significance of Rabbits' Large Ears</p> <p>A rabbit is a small, furry mammal with a short tail and pointed ears. Rabbits live in burrows in the ground. Each burrow is home to a single family. The first fossils associated with this family were discovered in North America, but they can now be found all over the world. The rabbit's ears are large in comparison to its small body. A rabbit is a weak and timid animal who is constantly surrounded by enemies. As a result, nature has endowed it with large ears, allowing it to hear even the fun of a drop sound. The large area of the ear captures almost every sound wave produced in the air and transfers it to the inner ear. This allows the rabbit to detect its enemies and flee to safety zones in record time. You've probably noticed that a rabbit cleans its ears by licking its forepaws and rubbing them over the surface of its ears. It does this to keep its ears clean and to take the natural oil that surrounds the ear surface into its mouth. This oil is necessary for the formation of vitamin D, which is required for the growth of healthy bones. Rickets will develop if the rabbit is not allowed to develop this.</p>	3/ 80
	<p>Rethinking Technology</p> <p>Today we live in a modern world. Technology allows people to present everything easily and quickly. Unfortunately, many things have become victims of modernization. Our environment is one of the victims. It receives a large number of used items that are difficult to decompose. There are environmental concerns because used items take several years to decompose. Millions of tons of trash are discarded every day in major cities. The garbage can remain there for days, months, or even years. It can cause disease, an unpleasant odor, and an unpleasant environment. All of these things wreak havoc on our lives. Some beaches now resemble garbage dumps. Rubbish ends up on beaches far from the landfill where it should be. The tide brings them to the beach. The view of the beach deteriorates dramatically. And perhaps visitors are unable to keep the beach clean by discarding broken sandals, shampoo bottles, plastic packaging, glass bottles, lunch boxes, and other items. The beach, then, is not a healthy environment. At home, people may be unaware that they are using more energy than they require. They can save energy by reducing their use of motorcycles and turning off the electricity, lights, television, and computer when they</p>	3/ 93

are finished with them. When they use electricity, they emit greenhouse gases into the atmosphere.
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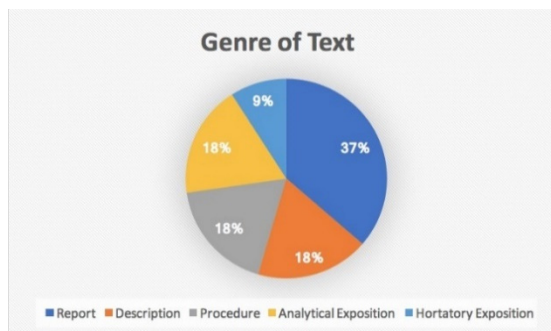


Figure 1: Genre of Text.

It is common knowledge that report text describes how things are. A report may also refer to natural, man-made, or social phenomena in our environment. It describes something in general terms. A report also describes the components, qualities, habits, behaviors, or applications. The purpose of report text is to describe how things are in our environment, with reference to natural, man-made, and social phenomena.

Table 2: Report Text Analysis.

No	Title	Unit/ Page
1	Parque Central Complex	
	Social Function	
	Describe the way things are, with reference to arrange on natural, manmade, and social phenomena in our environment.	The Parque Central Complex towers consist of twin 56-story towers. The buildings are located in Caracas, Venezuela. The towers are the tallest buildings in the country, with a height of 225 m (738ft).
	Generic Structure	
	General Classification	The towers take their name from the green refuge in the heart of Caracas' urban jungle, but are still in the midst of a vast complex of office buildings and amenities.
	Description	The east tower was completed in 1979 and the west tower in 1984. The towers take their name from the green refuge in the heart of Caracas' urban jungle, but are still in the midst of a vast complex of office buildings and amenities. The view from inside offers panoramic access to the city and the surrounding

No	Title	Unit/ Page
		mountains. However, in April 2003, both towers were surpassed in height (by only 5m) by Mexico City's Torre Mayor, and thus are no longer the tallest buildings in Latin America, but still they remain the tallest in South America.
	Language Features	
	Past Tense	On February 14, 1982, high rise firefighting and rescue advocate, Dan Goodwin, at the invitation of the Venezuelan television company, Venesid, scaled the outside of the Parque Central Complex.
	Action Verb	On October 17, 2004, a fire broke out in the east tower. At least ten floors were damaged in the incident. The fire started on the 34th floor and flames reached the 44th floor of the building. These floors housed key government offices.
	Present Tense	The Parque Central Complex towers consist of twin 56-story towers. The buildings are located in Caracas, Venezuela. The towers are the tallest buildings in the country, with a height of 225 m (738 ft).
2	Solar System	
	Social Function	
	Describe the way things are, with reference to arrange on natural, man-made, and social phenomena in our environment	Other stars in space probably have planets also but, as planets give off no light, we cannot detect them with our present instruments.
	Generic Structure	
	General Classification	When the ancient Greeks studied the heavens, they observed points of light which seemed to move back and forth against the background of apparently fixed stars.
	Description	These moving lights shone steadily and did not twinkle like the stars. The Greeks called these heavenly bodies planets, meaning "wanderers". We know now that the planets are those bodies, like the earth, which revolve around a star, the sun. Planets do not give off light of their own, but get their light from the sun. Including

No	Title	Unit/ Page
		the earth, there are nine planets in our solar system that is revolving around our sun. In sequence, moving a'p/3y from the sun, they are Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, and Pluto.
	Language Features	
	Present Tense	Including the earth, there are nine planets in our solar system that is revolving around our sun. In sequence, moving a'p/3y from the sun, they are Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, and Pluto.
	Adverbs	In sequence, moving a'p/3y from the sun, they are Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, and Pluto.
	Past Tense	These moving lights shone steadily and did not twinkle like the stars. The Greeks called these heavenly bodies planets, meaning "wanderers".
3	Orangutan	
	Social Function	
	Describe the way things are, with reference to arrange on natural, manmade, and social phenomena in our environment	Orangutans or Pongo pygmaeus belong to the Primate order. The orangutan spends most of its time in trees. Each evening it builds a new treetop nest. They are endangered because of habitat lost and poachers keep on killing, owning, and exporting orangutans.
	Generic Structure	
	General Classification	They only live on the island of Borneo and in the northern corner of the island of Sumatra. Orangutans are characterized by rough, long, reddish-brown fur. Male orangutans are about 95 cm (37 in) in length and about 77 kg (170 lb) in weight. Females are smaller, reaching about 78 cm (31 in) in height and weighing only about 37 kg (81 lb). The male has puffy cheeks and a hanging throatpouch. This pouch contains air sacks that help produce a groaning, bubbling call, which can be heard at least 1 km (0.6 mi) away.

No	Title	Unit/ Page
	Description	Half of the orangutan's diet consists of fruit, but they also eat young leaves, soft inner bark, termites, eggs, and occasionally monkeys. When a female is ready to mate, she will seek out an adult male. Orangutan are mammals; females give birth to a single infant about once every four to eight years. The gestational period for orangutans is just under nine months, nearly the same as in human beings. Infants stay very close to their mothers for the first three years until they don't consume their mother's milk.
	Language Features	
	Present Tense	Orangutan are mammals; females give birth to a single infant about once every four to eight years.
	Adjective	Orangutans are characterized by rough, long, reddish-brown fur. Male orangutans are about 95 cm (37 in) in length and about 77 kg (170 lb) in weight.
	Action verb	When a female is ready to mate, she will seek out an adult male. Orangutan are mammals; females give birth to a single infant about once every four to eight years.
4	Tractor	
	Social Function	
	To describe how something is accomplished through a sequence of actions or steps.	Tractor is an example of modern farming equipments. It is used for most of farmers because it is faster than traditional one. Can you use a tractor?
	Generic Structure	
	Transatinal Signal	After 2-3 months,
	Action Verbs	Keep adding, Add, Mix Spread
	Reiteration	When the tractor is ready on the land, sit down and switch the power on. And then, turn on the gas and move the steer depends to the land/soil which you want to lose. Do you know plough? Plough is used to lose the soil, too. It is one of the traditional farming equipment. And this is the way how to use plough. Firstly, make sure that your plough is ready to work. Don't forget to prepare the animals of cows or buffaloes

No	Title	Unit/ Page
		to pull the plough. Then, take them on the land which you want to cultivate. When you hit the animals, they will walk and the plough is ready to work. You only hit and give the direction.
	Language Features	
	Connectives	Firstly, and, then
	Action Verbs	Turn on, take, sit down.

The generic structures of report text are general classification and description. The WAJAR text book only explains the types of generic structure; the definition of the types of generic structure in the report text is not explained. A descriptive text is one that is written to describe a specific person, place, or thing. The descriptive text's schematic structure is divided into two parts: identification and description. Aside from its schematic structure, descriptive text has its own linguistic characteristics. Linguistic characteristics of descriptive text include the use of specific participants, writing in the present tense, linking verbs, adjectives, and the use of relational and material processes.

Table 3: Descriptive Text Analysis.

No	Title	Unit / Page
1	Dolphins	
	Social Function	
	To describe a particular person, place or thing.	Dolphins are sea mammals. They have to breathe air or they will die. They are members of the <i>Delphinidae</i> family.
	Generic Structure	
	Identification	Only baby dolphins are born with a few bristly hairs on their snouts. The hairs soon fall out. They have a long tail and fin on the top of their backs keeps the dolphin from rolling over. The female dolphins have a thick layer of fat under their skin to keep them warm when they dive very deep.
	Description	The dolphin's front fins are called flippers. They use them to turn left and right. Dolphins grow from 2 to 3 meters long and weight up to 75 kilograms. Dolphins hunt together in a group. A group of dolphins is called a pod. They eat fish, shrimps and small squid. They live in salt water oceans. When dolphins hear or see a shirr close by they go near it and follow it

No	Title	Unit / Page
		from many kilometers. Dolphins can leap out of the water and do somersaults. Sometimes they invent their own tricks and stunts after watching other dolphins perform. Dolphins are very friendly to people and have never harmed anyone. They are very playful animals.
	Language Feature	
	Adjective	The female dolphins have a thick layer of fat under their skin to keep them warm when they dive very deep.
	Present Tense	Dolphins hunt together in a group. A group of dolphins is called a pod. They eat fish, shrimps and small squid. They live in salt water oceans.
	Material Process	The dolphin's front fins are called flippers. They use them to turn left and right. Dolphins grow from 2 to 3 meters long and weight up to 75 kilograms.
2	What is an Astronaut?	
	Social Function	
	To describe a particular person, place or thing.	The word "astronaut" comes from the Greek, "astron", meaning "star" and "nautes" meaning "sailor". Astronaut are the men and women who pilot, navigate and fly in spacecraft Russian "star- sailors " are called cosmonauts, "kosmos " being the Greek for "universe". The first space flight in 1961 by the Russian, Yuri Gagarin. It lasted just over 89 minutes.
	Generic Structure	
	Identification	Astronaut are the men and women who pilot, navigate and fly in spacecraft Russian "star-sailors " are called cosmonauts, "kosmos " being the Greek for "universe".
	Description	I the first space flight in 1961 by the Russian, Yuri Gagarin. it lasted just over 89 minutes. The word "astronaut" comes from the Greek, "astron", meaning "star" and "nautes" meaning "sailor".
	Language Features	
	Present Tense	Astronaut are the men and women who pilot, navigate and fly in spacecraft Russian "star- sailors " are called cosmonauts, "kosmos " being the Greek for "universe".

No	Title	Unit / Page
	Adjective	The first space flight in 1961 by the Russian, Yuri Gagarin. it lasted just over 89 minutes.

It is discovered that language features are not used proportionally in the reading texts contained in the WAJAR textbook.

A procedure is a set of activities, tasks, steps, decisions, calculations, and other processes that, when carried out in the order specified by procedures, result in the desired result, product, or outcome. A procedure text type's purpose is to explain how something can be done. A procedure is a method of describing how something is done through a series of actions or steps (Depdiknas, 2003:49). A procedure is a series of steps that demonstrate how to accomplish certain objectives. The most basic procedure is a brief series of simple imperative clauses centered on well-known action verbs and commonplace objects. Language learners face increased difficulty as procedures become more specialized and technical. The steps may include constraints that must be met in order to successfully carry out the instructions. Simple constraints can be expressed as conditions of manner or place, such as carefully, close to the edge. Conditional clauses can be used to express more complex constraints, such as "if the metal is cool" (Feez and Joyce, 1989: 87–88). (1) goal; (2) materials; and (3) steps are the elements of procedure text. Furthermore, the steps for creating a procedure are as follows: (1) begin with a statement of the purpose and importance of the specific task; (2) present a step-by-step description of "how to proceed;" and (3) express the steps in the procedure in a simple and clear format, ensuring that it is correct and complete (Depdiknas 2003).

Table 4: Procedure Text Analysis.

No	Title	Unit / Page
1	Windsocks	
	Social Function	
	To describe how something is accomplished through a sequence of actions or steps	To make a wind sock out of a plastic bottle first you need to cut the top and the bottom off a two litre bottle, to have a perfect cylinder.
	Generic Structure	
	Goal	To make a wind sock out of a plastic bottle first you need to cut the top and the bottom off a two litre bottle, to have a perfect cylinder.
	Material	To make a wind sock out of a plastic bottle first you

No	Title	Unit / Page
		need to cut the top and the bottom off a two litre bottle, to have a perfect cylinder.
	Steps	Then, punch 4 holes (with a hole punch) spaced evenly on top. After that, tie a 12-inch piece of fishing line to each hole. Next, attach all four to a large swivel snap used in fishing. Sand the bottle and paint with paints any design you wish. When it is dry, punch holes every an inch around the bottom. Then, tie a 3-foot piece of ribbon in each hole. Vary your colours or make them all the same. Finally, hang up and enjoy.
	Language Features	
	Transitional Signals	After that, Next, Then, Finally,
	Action Verb	Tie, hang up, sand, etc.
2	How to make own compost	
	Social Function	
	To describe how something is accomplished through a sequence of actions or steps	Compost is the richest fertilizer you can use. And you can make it yourself with a little effort. Compost consists of decaying organic material. Things like leaves, grass, decomposable kitchen scraps, even hair clippings can be used to make compost.
	Generic Structure	
	Goal	Larger bins for your yard are available for purchase everywhere now. Things NOT to use: ashes from the barbeque, animal by-products (meat scraps, grease, bones), milk or dairy products, dog or cat droppings, cardboard, diseased plants.
	Material	These materials are layered in a container (or pile) with soil and manure or a high-nitrogen fertilizer. Start with a layer of dry "brown" materials, like wood chips, dried leaves, sawdust, or straw.
	Steps	Add a layer of moist "green" materials, such as

No	Title	Unit / Page
		grass cuttings, fruit and vegetable scraps, coffee grounds, eggshells, or pruning from your garden. Keep adding layers, alternating "green" & "brown" materials with a layer of soil and manure. The mixture should be kept warm and wet (water with a hose once a week to keep entire mixture moist), and aerated. It will need to be turned, or mixed, every week or so. Add chicken manure or bone meal (for nitrogen) if your compost is not decaying. After 2-3 months, the compost will be ready to use in your garden! Your compost is ready when it is dark and crumbly, and looks like soil. Mix compost into soil around existing plants once or twice a year. Prepare new planting areas by working liberally into soil. Spread around the base of shrubs. Although compost can be made in an open pile, you'll get faster results if you use a bin. A small Kitchen Compost Carrier can hang on the cupboard door or even sit on your kitchen counter.
	Language Features	
	Transitional Signals	After 2-3 months,
	Action Verbs	Keep adding, Add, Mix, Spread

It is discovered that language features are not used proportionally in the reading texts contained in the WAJAR textbook.

One of the argumentative essays is Analytical Exposition. Hortatory exposition differs from analytical exposition. Analytical is used to persuade readers to care about a particular case. Meanwhile, hortatory exposition is meant to persuade readers that something should or should not be true. As a result, the text in WAJAR (PENUNJANG PROGRAM WAJIB BELAJAR) is meant to persuade the reader that "something is true," rather than "to recommend an action." As a result, the text in WAJAR (PENUNJANG PROGRAM WAJIB BELAJAR) is analytical. The language function of analytical exposition is to persuade the reader or listener that

something is true. It can also be used to analyze or explain "how and why." As a result, it is sometimes referred to as a persuasive text.

Table 5: Analytical Exposition Analysis.

No	Title	Unit / Page
1	Plastics	
	Social Function	
	To persuade the readers to be concerned with one case.	Today plastic have become important part in modern life. Most of the things around us contain plastic, or are made of plastics. Our blankets are made of nylon, kind of plastics.
	Generic Structure	
	Thesis Statement	The carpet is made of plastic. The ballpoints or pens we write with are made of plastics. The pans and pots we use to cook with, the toys the children play with, even the ears people drive, all have important plastic components. Do you work or play with a computer? Some components of your computer are made of plastics.
	Arguments	Plastics have made some advantages. They are relative cheap to produce. Some plastics are made hard as stone and strong as steel. Some plastics are produce transparent as glass, light as wood and elastic as rubber.
	Reiteration	Plastics also produced in almost any colours they are lightweight, waterproof and chemical resistant.
	Language Features	
	Adjective	Important, transparent, chemical.
	General and abstract noun	Ballpoint, toys, advantage, waterproof, etc.
2	What is the Significance of Rabbits' Large Ears	
	Social Function	
	To persuade the readers to be concerned with one case	A rabbit is a small furry mammal with a short tail and pointed ears. Rabbits live in burrows in the ground.
	Generic Structure	
	Thesis Statement	Each burrow is the home of a single family. The first fossils which can be attributed to this

No	Title	Unit / Page
		family came from North America but now they are found in every part of the world. Compared to its small body rabbit has large-sized ears.
	Arguments	A rabbit is a weak and timid animal and is always surrounded by many enemies. Therefore, nature has gifted it with large ears to help it to hear even the fun of drop sound. The large area of the ear catches almost every sound wave produced in the air and transfers them into the inner ear. This makes the rabbit to detect its enemies in time and run to safety zones
	Reiteration	This oil is important in forming vitamin D which is necessary for the growth of healthy bones. If the rabbit is not allowed to form this, it will develop rickets.
	Language Features	
	General and Abstract Nouns	growth, family, ear, rabbit

It is discovered that language features are not used proportionally in the reading texts contained in the WAJAR textbook.

The purpose of hortatory exposition text is to persuade readers that something should or should not be said or done.

The generic structure of hortatory exposition texts is: Thesis, 2. Arguments, and 3. Recommendation, and the dominant language features are: a. the use of the simple present tense; b. the use of modals; c. the use of action verbs; d. the use of thinking verbs; e. the use of adverbs; f. the use of adjectives; g. the use of technical terms; h.

Table 6: Hortatory Exposition Analysis.

No	Title	Unit / Page
1	Rethinking Technology	
	Social Function	
	Persuading the readers that something should or should not be the case or be done.	We face a modern life today. Technology really helps people presenting everything easily and fast. Unfortunately, there are many things become victims of the modernization.
	Generic Structure	
	Thesis Statement	Our environment is one of the

No	Title	Unit / Page
		victims. It receives many used things that can not decompose easily. There are environmental problems then because the used things need several years to decompose.
	Arguments	Everyday in big cities millions of tones of rubbish is sent to rubbish damp. The rubbish stays there for days, months, even years. It can create diseases, unpleasant smell and uncomfortable scenery. All of these disturb our life.
	Recommendation	At home, sometimes people don't realize that they spend more energy than they need. Exactly they can save their use of energy by cutting the use of motorbikes, switch off the electricity, the lights, the television, and computer when they have finished using them. Whenever they use electricity they put greenhouse gases into the air.
	Language Features	
	Thinking Verbs	Realize
	Present Tense	Nowadays some beaches look like rubbish dumps. Rubbish arrives on beaches far from the lace where the rubbish should be. The sea tide brings them to the beach.

4.2 Suitability Between Reading Texts and School-Based Curriculum (KTSP)

The researcher compares the suitability of reading materials and curriculum aspects by relating the reading texts to the indicators used and analyzing their consistency.

Table 7: Suitability Analysis.

No	Indicators	Description in Reading Material
1	Mengidentifikasi makna gagasan dalam teks berbentuk procedure dan report	Answer the following questions based on the monologue in task 3 above! (60)
2	Mengidentifikasi berbagai informasi yang terdapat dalam teks berbentuk procedure dan	Complete the dialogues with suitable expression! (60)

No	Indicators	Description in Reading Material
		report
3	Mengidentifikasi tujuan komunikatif teks berbentuk procedure/report	-
4	Mengidentifikasi langkah retorika Dalam teks berbentuk procedure/report	Your teacher will read the procedure text of how to make a compost. Listen to him/her carefully and answer these following questions based on the text of dialogue above! (62)
5	Membaca nyaring	-
6	Mengidentifikasi informasi yang berhubungan dengan bacaan tentang prosedur	Questions above!
7	Menjawab pertanyaan-pertanyaan berdasarkan bacaan	Questions above!
8	Membuat ringkasan	-
9	Menulis essay berbentuk procedure / report	Read the text again and answer the following questions! (67)
10	Menyusun kalimat acak menjadi teks yang padu berbentuk procedure/report	Your teacher will read the text completely and fill in the blank space! (71)
11	Mengidentifikasi makna dalam teks monolog berbentuk narrative/report	-
12	Mengidentifikasi tujuan komunikatif dan langkah retorik teks monolog berbentuk narrative/report	-
13	Mengidentifikasi ciri Kebahasaan teks narrative/report	-
14	Mengidentifikasi berbagai informasi dalam teks monolog berbentuk narrative/report	-
15	Menangkap informasi spesifik yang ada pada teks deskriptif.	Choose the correct answer by crossing a, b, c, or d (48)
16	Mengidentifikasi makna dan gagasan dalam teks deskriptive.	Read the text below and answer the questions! (49)
17	Mengidentifikasi aspek-aspek yg ada pada teks deskriptive	Find a text about natural objects. Then analyze the followings (54)
18	Merespon wacana monolog analytical exposition	-
19	Melakukan monolog berbentuk analytical exposition	Read the text below aloud! (64)

No	Indicators	Description in Reading Material
20	<i>Menganalisis fungsi sosial, struktur teks, dan unsur kebahasaan dari teks eksposisi hortatori tentang topik yang hangat dibicarakan umum, sesuai dengan konteks penggunaannya.</i>	What is the main idea? (80)
21	<i>Memahami fungsi sosial dari teks eksposisi hortatori memahami struktur teks eksposisi hortatory</i>	Answer these questions based on the text! (65)
22	<i>Memahami unsur kebahasaan teks eksposisi hortatory</i>	Make five conditional sentences about our environment. Do it in a group! (64)
23	<i>Menjelaskan fungsi sosial, struktur teks, dan unsur kebahasaan teks eksposisi hortatory</i>	Answer these following questions based on the text! (94)

5 CONCLUSION

After conducting research on the WAJAR textbook, the researcher comes to the following conclusions: 1) The WAJAR textbook contains a variety of school-based curriculum texts. Report text, descriptive text, analytical exposition, hortatory exposition, and procedure text are all covered in the book. The reading text contained within the textbook explicitly identifies all of the text's generic structures. The first conclusion pertains to the WAJAR textbook's contents. There are some points to consider when dealing with aspects of the textbook's content.

These points are the conformity of reading materials and curriculum, the types of genres found in reading materials, the arrangement of reading materials based on level of difficulty, reading tasks given to develop students' abilities, reading materials that support life skills, and reading materials that consider gender, religion, race, and SARA. Except for the conformity between reading materials and curriculum, the WAJAR textbook had already met all of the content requirements.

2) According to the findings, some language features are not used in proportion in the reading text. In each text type, certain language features were missing. The reading text contains only two to three of the five language features.

(3) Not all reading indicators are developed through the textbook's reading activities. Some reading indicators are not included in the first

semester's reading materials. The calculated suitability level was only 65.21 percent (suitable enough), indicating that there is still unsuitability in the WAJAR textbook.

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A Design of Mobile Learning Application for English Learning in Indonesia

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Keywords: English Learning, Mobile Application, MDLC, Testing, SENSATION.

Abstract: The development of mobile-based applications for cellular technology is accelerating at the moment. Mobile applications are intended not only for entertainment purposes but also as an alternative learning medium. SENSATION: Learning English with a Mobile Application is a mobile-based English learning medium that is made more appealing and user-friendly by focusing on Indonesian-speaking users. The Multimedia Development Life Cycle (MDLC) method was used to create the SENSATION application. The testing stages in this study began with system validation and content, then progressed to initial application testing. The study used a purposive sampling method, with expert-validated questionnaires, and the data was analyzed descriptively. In the media expert validation, there are three aspects of evaluation. The media expert validation process has three assessment aspects and the material expert validation process has four assessment aspects. The SENSATION application had nine assessment points in the initial test. Based on the validation of media experts and material experts with excellent criteria in terms of systems and content, the results showed that the SENSATION application was valid. After using SENSATION, the initial application testing revealed a positive response in terms of user acceptance. Furthermore, the study's findings are being used in the application distribution stage.

1 INTRODUCTION


The development of technology in the cellular field is currently very rapid, from the cellular model itself to its functions. Maryam is one example of how cell phones can be used as a learning tool. A mobile application as an application that can run on a cell phone and be used to learn, process, and obtain practical information (it is not time-bound and can be carried anywhere). As a result, as technology advances, the use of English as a world language that dominates the era of communication is required (Hu, 2016). English enables you to participate in the global community in the broadest sense.


Even in some fields, English is required (Mobinizad, 2018). The benefits of mastering English include more flexible intellectual (Salaki et al., 2015), academic, language, and social skills that are ready to enter a social context with people of different

languages and cultures (Najla'a H. Al-Ajmi, 2020). This implies that mastering the English language is a critical requirement for modern culture today (Damayanti, A. E., Imam S., Happy K., 2018) because mastering the English language allows anyone to extend their relationship with the foreign community (Ezzelden, 2019).

Even in some fields, English is required. The benefits of mastering English include more flexible intellectual (Salaki et al., 2015), academic, language, and social skills that are ready to enter a social context with people of different languages and cultures. This implies that mastering the English language is a critical requirement for modern culture today because mastering the English language allows anyone to extend their relationship with the foreign community (Putra et al., 2020).

Mobile education is defined as a learning process that is delivered or supported by handheld and mobile

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technologies such as personal digital assistants (PDAs), smartphones, or wireless laptops (Kuimova & Zvekov, 2016). Because of the increasing use of mobile technology in society and by the younger generation (Musahrain, 2016), students will expect the subject matter to be delivered via mobile technology so that it can be accessed from anywhere and at any time (Al Said, 2020). We create mobile applications to help people learn English for these reasons.

2 LITERATURE REVIEW

2.1 English for Specific Purposes

English is used in several countries, including the United Kingdom, the United States, New Zealand, Australia, Canada, and Ireland. These countries are all former British colonies (Jati, 2018). English is widely spoken in other countries, particularly among people who do not speak another language, even though it is not the dominant language in that country (Ozer & Kılıç, 2018). English is widely spoken in Hong Kong, Singapore, Nigeria, the Philippines, and Malaysia, for example. It is frequently used in such countries as a means of communication between people who speak different native languages. The following are the applications of the English language, and why learning English is important.

In this case, English for news and information is commonly used as a means of exchanging information and news (Ezzelden, 2019). 80% of machine data is interpreted and stored in English (Aljazzaf, 2020). The majority of satellite correspondence is in English. English is used in more than half of the world's newspapers. In many countries where English is a minority language, there is at least one English-language newspaper (Cabrera-Solano et al., 2020). In India, three thousand English-language magazines have been distributed. Many countries broadcast English-language television news. The influence of broadcasting is felt everywhere; protesters in every country use signs written in English.

Business, Diplomacy, and Vocation English. English is the primary language of international trade, diplomacy, science, and business (Gafni et al., 2017). English is used to trade important commodities such as silver, lead, and hard currency (Li, 2017). English is also the official language of several international organizations, including the United Nations and a few others (Shi, 2016). International conventions are also held in English. Many professional papers in English

have been published all over the world. Abstracts in English are included in reports published in other languages (Zhang & Zuo, 2019).

English is the global business language. The majority of international business is conducted in English (Aziz et al., 2018). To advance in a career, many international companies have minimum English language requirements (Rahmawati, 2016). Even if everyone at work speaks the native language, the company information may be all in English (Ababneh, 2017). Learning English as a skill will allow you to read and comprehend novels, magazines, and newspapers from all over the world (Muhammed, 2014). It will also allow you to attend conferences and seminars and network with other industry professionals (Liu & Zhang, 2018). English for entertainment. Popular media also plays an important role in the transmission of English. American films are used in nearly every country around the world, and American music is heard everywhere (Mogea & Salaki, 2016).

2.2 Mobile Learning

Mobile learning is a learning paradigm that occurs in locations or situations where simple-to-use devices are available, such as while a learner is using a computer or a cell phone (Guo et al., 2017). With its numerous potentials and benefits, it is hoped that mobile learning will become an additional source of learning in the future, increasing the productivity and efficacy of the process as well as the learning outcomes of Indonesian students.

The use of ICT in education continues to grow in a variety of techniques and ways, which can be defined in the e-learning context as a learning process that uses electronic channels and digital media, as well as mobile learning as a style of learning that primarily uses mobile communication devices and technologies.

The extremely high adoption rate of mobile devices the relatively simple level of usage, and the increasingly low cost of smartphones in comparison to personal computer devices are driving forces that are increasingly extending the use of mobile apps as a current learning pattern that shapes a digital model that can be used at any time. The creation of instructional resources that can be accessed at any time, as well as the representation of relevant content, benefits the concept of mobile learning. the phrases "M-Learning" and "Smartphone" .

Learning refers to the use of electronic devices such as PDAs, smartphones, computers, and IT applications in teaching and studying, with a focus on

personal devices in this case. The goal of improving mobile learning is a continuous learning process (long-life learning). Students can be more involved in the learning process, saving time because, when applied to the learning process, students do not need to be in the classroom just to collect homework (Ying, 2018).

3 RESEARCH APPROACH

3.1 Research Design

Researchers used the Multimedia Development Life Cycle (MDLC) method to create SENSATION. The MDLC method improves system development effectiveness and efficiency (Tao., 2016). MDLC system development consists of six development processes, beginning with the concept phase and ending with the distribution. Figure 1 depicts the six stages of development.

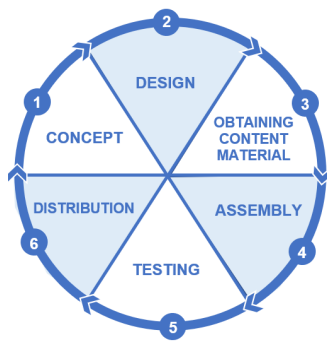


Figure 1: Multimedia Development Life Cycle (MDLC).

1. During the concept stage, goals and audience identification were determined.
2. The specifications for program architecture, style, appearance, and materials were determined during the design stage.
3. The third stage is the content acquisition, which includes images, photos, animations, videos, audio, and source code.
4. The application was built using the assembly stage, which combined all contents and materials into a basic application, such as storyboards, flow charts, and/or navigation structures.
5. Following the assembly stage, testing was carried out in two stages: (1) the first stage referred to alpha testing, which was carried out by the developer, and (2) the second stage was beta testing, which was carried out by English teachers and students.
6. The application will be stored in media storage during the distribution stage so that students and teachers can download it and evaluate product development.

3.2 Sample of Research

The population of this study included all teachers and students from elementary, junior, and senior high schools in North Sulawesi, Indonesia. This app was created to serve as an android-based learning medium for all school grade levels, particularly elementary, junior, and senior high school students. The sample was chosen on purpose, based on the respondents' time availability and willingness. The sample was drawn from three levels of public and private schools on the island of North Sulawesi. The validity of the system and content was validated by four experts. In addition, twenty-four English teachers and 640 students from 12 different schools (four elementary schools, four junior high schools, and four senior high schools) participated in the initial testing of the SENSATION application.

3.3 Instrument of Research

In this study, the level of user acceptance was determined using a valid and reliable questionnaire on a Likert scale. Table 1 shows the four criteria and scores that comprise the scale.

Table 1: Scoring Rules Likert Scale.

Category	Score
Strongly Disagree (STS)	1
Disagree (TS)	2
Agree (S)	3
Strongly Agree (SS)	4

3.4 Procedure of Research

3.4.1 The Test of SENSATION Application System

The SENSATION application system was tested using the black box method in this study. This method tested the application in terms of functional specifications without testing the design or program code to determine the application's functions, input, and output based on the required specifications. The application was validated using two methods: media expert validation and material expert validation. To validate the media, four experts, including expert lecturers and English teachers, tested the application. A Likert scale questionnaire with three assessments: technical, content, and design was used to collect data.

The data was processed using the percentage validation method. The application was tested by four experts in the material expert validity test, who were expert lecturers and English teachers. A Likert scale questionnaire with four indicators was used to collect data: ease of use, motivation, withdrawal, and usefulness. The information was gathered and validated using the percentage method.

3.4.2 Initial Test of SENSATION Application

In the testing stage, SENSATION tested on English teachers and students. The subject of this research was 24 English teachers and six hundred and 40 students in twelve different schools. These schools consist of four senior high schools, four junior high schools, and four elementary schools, both public or private school in North Sulawesi, Indonesia. The sampling technique used was purposive sampling. Data collection techniques using a Likert scale questionnaire with nine assessments, namely functionality, user friendly, beneficial, easy to be implemented, applicable, the application is needed, comfortable, easy to use, and easy to understand. This questionnaire to collect feedback from students who have used SENSATION during English lessons. The data were processed using the percentage validation method.

3.4.3 Data Analysis

Data from the questionnaire were processed using the percentage validation method. The data processing with the formula (Damayanti., 2018):

$$X_i = \frac{\sum S}{S_{max}} \times 100\%$$

Exp :

S max = Maximal score

Σ S = Amount score

x = Eligibility scores for each aspect questionnaire

Table 2: Validity test based on percentage.

Percentage	Value
81%-100%	Very good
61%-80%	Good
41%-60%	Pretty good
21%-40%	Not good
0%-20%	Very Not good

The results of the percentage score obtained from data are interpreted in the criteria in Table 2.

4 RESULTS AND DISCUSSION

4.1 Results

People nowadays can enjoy the content provided by Android and iOS, but there is little educational content. The SENSATION is a learning system created by a component of education. SENSATION is an acronym that stands for "Study English with a Mobile Application." The Android and iOS frameworks were used to create SENSATION. The SENSATION application is used for English learning. People should be introduced to English at a young age, with the emphasis on reading, writing, and listening.

The SENSATION is an English-learning application designed specifically for Indonesian society, where both children and adults can use it. It is hoped that by introducing English at a young age as well as for adults, we will have a good understanding.

The application's display is also tailored to children's and adults' ages, with bright colors and images that can pique their interest in learning. We can learn both written English words and English pronunciation in the SENSATION. It transforms the sensation into a simple and interactive application for learning English on your own for daily use.

The SENSATION was created in six stages of the Multimedia Development Life Cycle (MDLC), beginning with the concept, design, obtaining content material, assembly, testing, and distribution. (1) The concept stage is the author's preliminary study stage, in which there is an initial study on the use of mobile applications for learning English, followed by the (2) design stage, which loads pages that will later be displayed in the application. The following stage is (3) Obtaining Content Material, in which the author gathers the content that will be loaded into SENSATION. Continue to the fourth stage, "assembly," after finishing loading the material, which is a stage of assembling material and testing the application in a black box test for functionality and application bugs. The following stage is (5) testing to determine the application's readiness and maturity level for use, followed by (6) distribution, also known as the application dissemination stage.

The login page is the first page that users see when they launch the SENSATION application. The user will enter a username and password (if they

already have an account) or create an account on this page (if the user does not have one). Users can access the applications via this page. The login and account creation functions are used to identify users who are using the application. Figure 2 depicts the SENSATION login page in action.



Figure 2: SENSATION login page.

The following page is the English level page, which allows users to select their English level. Users will benefit from the ability to select their English level because the material displayed to them will be tailored to their level of English. Users can choose between three English levels: low (individual words), medium (simple phrases), and high (communicating needs). The application will automatically display the material based on the English level selected. Figure 3 depicts the display of the SENSATION English level page.



Figure 3: SENSATION English Level Page.

The home page is the primary display that is accessible to all users (all English levels). This page displays six main options: learn (learning material), practice (practice material), test (taking a test), games (interesting games), information (about SENSATION), and developer (development team). Figure 4 depicts the homepage display.

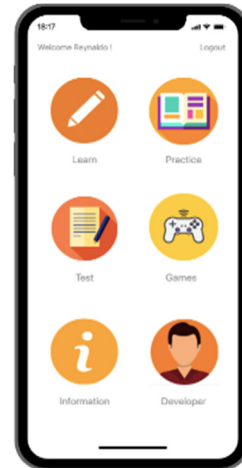


Figure 4: SENSATION Homepage.

Figure 5 shows the page tenses that are available on the learn page. The user will select the tenses to be studied from four options on this page: present, past, future, and past future. Users will have an easier time learning tenses because they have been grouped so that the existing tense groups are easy to remember.

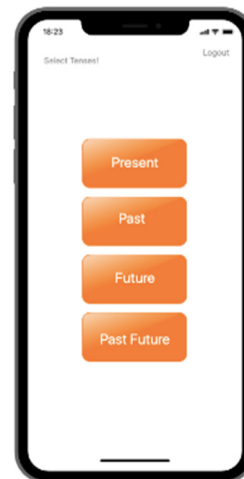


Figure 5: SENSATION Tense Page.

Page tenses includes the presentation page, as shown in Figure 6. The information on this page is about the simple present test. Because the sensation is intended for Indonesian users, the instructions for the introductory material are in Indonesian.



Figure 6: SENSATION Presentation Page.

The user is given a Test Page to assess his ability using the six available test options. Starter, verb, speaking, listening, expression, and idiom are the options provided. Users are free to select from the available test options. The SENSATION automatically adjusts the test entries based on the English level selected on the previous page by the user. Figure 7 depicts the display of the test page.



Figure 7: SENSATION Test Page.

The practice page, as shown in Figure 8, is designed for users who have previously tested. The test level was adjusted by SENSATION based on the user's current English level. Users can take listening, speaking, reading, and writing tests on this page. This will allow users to practice their basic English skills.



Figure 8: SENSATION Practice Page.

4.2 Discussion

English is referred to as a widely spoken first or second language, particularly among people who do not share another language, even though it is not the dominant language in that country. In this case, English for news and information is commonly used as a means of exchanging information and news. Approximately 80% of machine data is interpreted and stored in English. The majority of satellite correspondence is in English. English is used in more than half of the world's newspapers. In many countries where English is a minority language, there is at least one English-language newspaper. In India, three thousand English-language magazines have been distributed. Many countries broadcast English-language television news. Protesters in every country use signs written in English due to the influence of broadcasting. As a result, proficiency in English has emerged as one of the most valuable assets for competing in the global era.

4.2.1 Media Expert Validity Test

Initially, four media experts validated the SENSATION application. The validity test is performed in collaboration with experts in the design and system of the sensation. The goal of this validity test was to see if the development of the sensation required some guidance from a group of English teachers and experts (lector). Figure 9 depicts the validity test result of the "sensation" by media experts.

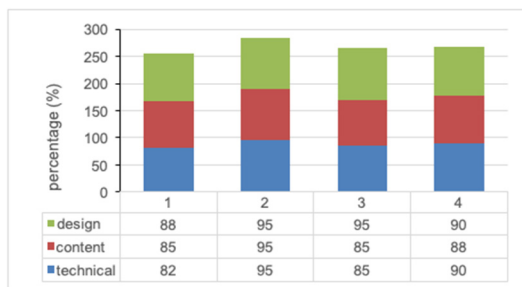


Figure 9: Validity Test Result by Media Experts.

A Likert-scale questionnaire was used to conduct the validity test by media experts. The score was calculated and converted into a percentage. Technical, content, and design indicators are used in the evaluation. Technical indicators include the system's technical capability. Content indicators include an application system that displays content based on user input, and design indicators include system function compatibility with the initial design of the SENSATION application. The media experts' validity test aims to detect any errors or bugs in the application.

According to Figure 9, the results of the media experts' validity test show that the percentage is greater than 80%. Based on the percentage validity test, it is possible to conclude that the SENSATION application was developed very well in terms of technique, content, and application design. As a result, the SENSATION application is extremely simple to use.

4.2.2 Material Expert Validity Test

A validity test was performed on a sample of four experts, with four indicators used as part of the evaluation. Purposive sampling was used to select the sample of ten experts, including lecturers and English teachers. Material experts conduct validity testing to determine whether the content matches the application's initial purpose and design. Figure 10 depicts the findings of the media experts' validity assessment.

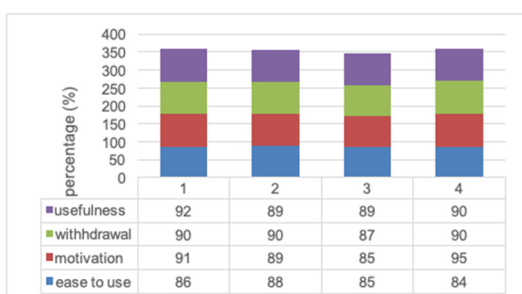


Figure 10: Validity test result by Material Experts.

Aspects of evaluation include usability, motivation, withdrawal, and usefulness. Content that is easy to access, learn, and apply in everyday life is included in easy-to-use indicators. Indicators of motivation include whether the content motivates users to learn and whether the content motivates users to improve their English mastery. Evaluation withdrawal indicators include whether the content can entice users to use the application and entice users to learn English using the SENSATION application. Finally, usefulness assessment considers whether the content in the SENSATION application is beneficial to users, particularly in terms of improving English mastery.

According to Figure 10, the results of the media experts' validity test show a percentage of more than 80%. According to the percentage-based validity table, the content of the SENSATION application is very good in terms of ease of use, motivation, withdrawal, and usefulness.

Based on the results system and material validation, the SENSATION application met the requirements of a mobile-based learning medium.

SENSATION is expected to provide three major benefits that will serve as supplements, complements, and substitutes.

1. Supplement

The SENSATION application's supplement functions refer to optional characters, such as "users have freedom of choice." In this case, users are free to select provided features in the SENSATION. Users can also access the application at any time and from any location.

2. Compliment

In this case, the SENSATION augments the material designed to supplement English learning in the classroom. As a bonus, because it is designed for Indonesian society, it also includes introductory material in Indonesian to make it easier to understand. The SENSATION material is programmed in this case to serve as reinforcement or additional material for Indonesian users.

3. Substitution

The goal of SENSATION is to provide an alternative English learning platform where anyone can manage their learning activities in accordance with their own time and daily activities. As a learning alternative, the SENSATION provides users with time and material to study flexibility.

4.2.3 Test of User Acceptance

The next writer completed the testing process after completing the development of the SENSATION application. A testing activity is a set of steps that can determine whether or not software contains errors when SENSATION is already in the user's hands (bugs). At this stage, testing is performed to ensure that the application's functionality is operational and to evaluate the application's performance when used by users. This testing will also determine the level of user acceptance of SENSATION. The author can determine the level of acceptance of the validators, who are English practitioners, teachers, and students, using this test. Where this test can help system developers in the development of the SENSATION application

The SENSATION application was first tested on a group of 24 English teachers and 640 students from 12 different schools, which included four elementary schools, four junior high schools, and four senior high schools. The sampling is based on students' and teachers' willingness to try out the application. The sampling strategy is also based on the application's original goal of being able to cover all education sectors from elementary school to senior high school. Figures 11 and 12 show the findings of the testing research.

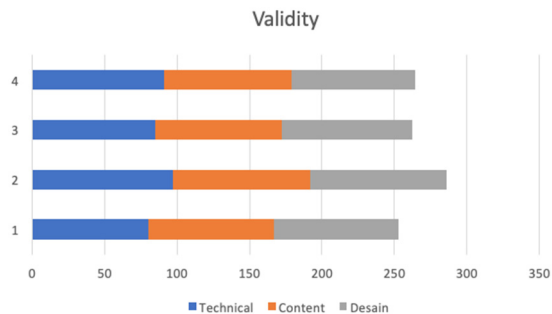


Figure 11: Design Validity Result.

When determining the level of user acceptance of the SENSATION application, factors such as functionality, user-friendliness, benefits, ease of implementation, applicability (if applicable), comfort, ease of use, and understanding are all taken into account. According to the questionnaire results shown in Figure 11, average users choose the option "strongly agree" with an intensity of 50-90% in every aspect of the assessment. Figure 12 illustrates the testing results in greater detail.

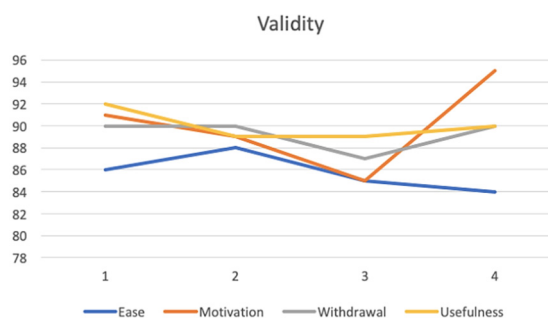


Figure 12: Material Validity Result.

The results of this test are useful for determining the level of user acceptance in SENSATION application development. According to Figure 12, the dominant value is strongly agreed, followed by agreeing for the nine assessment indicators. According to Figure 12, the level of acceptance of some users indicates that they strongly agree that SENSATION has good aspects of functionality, benefits, ease of implementation, and applicability. According to Figure 12, the majority of users "strongly agreed" that SENSATION has good aspects of the application that are needed: it is comfortable, easy to use, and easy to understand. Finally, almost all users stated in Figure 12 that they strongly agreed that SENSATION has very good user-friendliness.

Based on the results of the user acceptance test, it is possible to conclude that the majority of users are satisfied with the SENSATION application. The author can then use these results as data in the next stage of application development, namely the distribution stage. This stage entails distributing applications to a larger number of consumers.

5 CONCLUSION AND RECOMMENDATION

The SENSATION application is an effort to create mobile-based English learning media aimed at Indonesian language learners. The SENSATION application development process is still in its early stages (Version 1). SENSATION is very good in terms of systems and content, according to the results of validation by media experts and material experts. According to the testing results, the SENSATION application has a high level of user acceptance. The study's findings are then used to make recommendations for the next stage of development. It is hoped that the development of this application will assist users, particularly Indonesian-speaking users, in learning English at their own pace.

Furthermore, SENSATION application development can be used as a model for the creation of similar applications as well as complex applications for English learners.

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The Influence of Self-Efficacy and Learning Motivation on Students' Autonomous Learning in the Digital Era

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Keywords: Self-Efficacy, Learning Motivation, Autonomous Learning.

Abstract: The purpose of the study is to ascertain and analyze 1) The Influence of Self-Efficacy on learning motivation; 2) The Influence of Self-Efficacy on students' autonomous learning through Learning Motivation. This type of research is quantitative with an associative type. The sampling technique used in this study was proportional random sampling with a random number of members from each sub-population with a sample of 217 students. The data used are primary. The data collection technique is in the form of a questionnaire. Data analysis used descriptive analysis, analysis prerequisite test, path analysis, t-test, and coefficient of determination. The analysis tool uses SPSS with an alpha of 0.05. The results showed that 1) Self-Efficacy has a significant influence on Learning Motivation and 2) Through learning motivation as an intervening variable, self-efficacy has no impact on students' autonomous learning.

1 INTRODUCTION

The development of the affective aspect is crucial for enhancing student character. The character can be interpreted as a vessel of different psychological traits that help a person adapt to numerous environmental situations they may face. In addition, A character is essential to developing and producing a wonderful human resource, and an independent character is one of them, especially in facing various challenges in the digital era (Walker and Graham 2021).

Successful learning can be gained by being more independence. Independent includes initiating behavior, overcoming obstacles or problems, having self-confidence, and being able to do things by themselves. Independent persons have a desire to do things by themselves and are capable to find the solution to their problems. The independence of students in the digital era should be well developed because of the ease of access obtained in finding learning resources and learning new things through technology (Johnsen and Goree 2021)

In fact, improvement in how Vocational high school prepares students to be independent character is required. In teaching and learning activities, the

students of Vocational High School 6 Padang have obtained the theory and practice material that can be applied during the learning so that students are expected to be independent.

The initial observations results revealed that the level of student autonomous learning in the Eleventh grade at Vocational High School 6 Padang was not sufficient, out of 30 students only 46.6% of them actively asked questions in learning. 43.3% lack initiative to increase knowledge by additional books from library. The teacher also notes that only a few students are eager to ask questions throughout the learning; instead, they are more likely to accept the information offered by the teacher, whether or not they fully comprehend it. According to mass media, some students are absent, less motivated, and lack of goals for their future (Esra and Sevilen 2021). The adolescent problems above indicate a lack of awareness of responsibility and independence in learning. This phenomenon can cause problems when they attend higher education (Crome, Farrar, and O'Connor 2009).

A factor that influences students' autonomous learning is self-efficacy. furthermore, other factors that influence students' autonomous learning include

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self-efficacy, motivation, and goals (Cobb Jr 2003). The ability or competency of a person to carry out a task, accomplish a goal, or get through challenges while learning is known as self-efficacy. Self-efficacy is the belief in their ability to train their self-control over the phenomenon in their environment (Bandura, in (Feist and Feist 2010); (Bandura 2013); (Bandura 2012). Self-efficacy is reflected in the students themselves through a learning process that occurs through interaction with the environment.

Based on Schunk's opinion, self-efficacy can perform during academic learning. Before engaging in learning activities, Students have different beliefs about how to gain information, demonstrate skills, master a subject, and many other things (Schunk 1991). Personal factors together with situational factors (teacher rewards and feedback), such as goal setting and information processing can influence student learning.

Aside from self-efficacy, another factor that influences students' autonomous learning is learning motivation. Students' motivation is positively related to students' autonomous learning (Cobb Jr 2003). Students must be motivated to implement strategies that will impact the learning process.

Motivation is something that drives a person or group of people toward doing or not doing something as an active momentum (Dörnyei, Muir, and Ibrahim 2014). Motives become active at certain times, especially when the need to achieve a goal is urgent or felt.

Students' autonomous learning is closely related to learning motivation (Schunk and Mullen 2012). Strong motivation to achieve the goal is necessary for building intelligence. If a strong motivation has emerged, it will create an attitude of independence in the student. Students' self-efficacy affects their motivation to learn. A person with high self-efficacy will be more motivated to learn. This is reflected in someone's efforts and persistence in overcoming obstacles. People with high self-efficacy will work harder to get beyond the obstacles.

Motivation can be an intervening variable to determine the influence of self-efficacy on students' autonomous learning. In line with the results of previous research that has tested the influence of self-efficacy on students' autonomous learning with motivation as the intervening variable. (Anderson, Hattie, and Hamilton 2005), (Cherian and Jacob 2013) found that students' autonomous learning and self-efficacy are positively correlated. Subsequent research by (Kurniyawati 2012) found that self-efficacy and motivation have a positive and significant relationship. Good self-efficacy will help

students to achieve good motivation so that students can complete assignments optimally. The purpose of this study was to analyze the influence of self-efficacy on learning motivation and the influence of self-efficacy on students' autonomous learning through learning motivation. (Karnedi, Zaim 2021) found that students lacked motivation in studying. Both internal and external factors contributed to this cause.

2 RESEARCH METHOD

Ex post facto research design is used in this quantitative research type. The population was 473 students of Eleventh grade at Vocational High School 6 Padang with 217 samples through proportional random sampling technique. The exogenous variable in this study is self-efficacy, the endogenous variable is students' autonomous learning and the intervening variable is learning motivation.

A questionnaire is used to collect the data. Before collecting the data, instrument validation were done to obtain valid and reliable instruments. The results of the variable testing on students' autonomous learning are 18 valid statements with very high reliability from Cronbach's Alpha value of 0.901. In the Self-Efficacy variable, there are 14 valid statements with very high reliability, with a Cronbach Alpha value of 0.880. Furthermore, on the learning motivation variable, there are 23 valid statements with very high reliability from the Cronbach Alpha value of 0.887.

Before analyzing the data, analysis prerequisite tests were obtained, such as the normality test and heteroscedasticity test. To see the influence between variables by using path analysis (Path Analysis) with the SPSS application. The path model in this study can be described as follows:

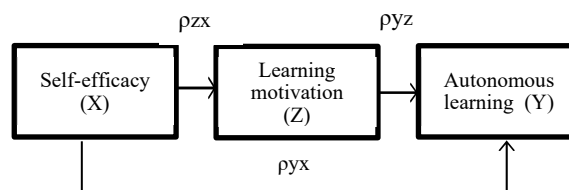


Figure 1: Research path model.

Furthermore, the t-test is used to see whether the proposed hypothesis is proven or not, with the criterion that if the significant value is <0.05 then H_0 is rejected and H_a is accepted.

3 RESULT AND DISCUSSION

3.1 Result

Respondents in this study were 217 students of Eleventh grade at Vocational High School 6 Padang. The number of female respondents was 191 students, more dominant than male students, only 26 students. Based on the respondent's answers, the results of the frequency distribution of the research variables are shown in the following table:

Table 1: Distribution of Independent Learning scores.

Indicator	Mean	TCR (%)	Description
Learning activity	4,08	81,65	Good
Persistence of learning activities	3,54	71,09	Quite good
Learning direction	3,64	72,88	Quite good
Learning creativity	3,83	76,69	Quite good
Average	3,77	75,57	Quite good

Table 2: Distribution of Learning Motivation scores.

Indicator	Mean	TCR(%)	Description
Desire to succeed	3,98	79,81	Good
Motivation and needs for learning	4,36	87,39	Good
Future goal and purpose	4,28	85,78	Good
Learning rewards	4,16	83,46	Good
Interesting activities	4,06	80,24	Good
Conducive learning environment	3,89	77,92	Quite good
Average	4,12	82,43	Good

Table 3: Distribution of Self-Efficacy Scores.

Indikator	Mean	TCR(%)	Keterangan
Level	4,00	80,11	Good
Strenght	4,03	80,80	Good
Generality	4,04	80,91	Good
Rata-rata	4,02	80,60	Good

Table 4: Normality Test.

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		217
Normal Parameters ^{a,b}	Mean	,0000000
	Std. Deviation	5,54425041
Most Extreme Differences	Absolute	,041
	Positive	,041
	Negative	-,041
Kolmogorov-Smirnov Z		,604
Asymp. Sig. (2-tailed)		,858
a. Test distribution is Normal.		
b. Calculated from data.		

Table 5: Heteroscedasticity Test.

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1	(Constant)	1,913	2,383		,803,423
	Self Efficacy (X)	-,045	,055	-,077	-,807,420
	Motivation (Z)	,052	,032	,155	1,618,107

a. Dependent Variable: Abs_Res

Table 6: Coefficient of Self-Efficacy on Learning Motivation.

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1	(Constant)	26,494	4,701		5,636,000
	ED	1,210	,083	,706	14,612,000

a. Dependent Variable: KM

The coefficient of self-efficacy (X) on learning motivation (Z) is 0.706, the t count is 14.612 and the significance is 0.000 < 0.05. This demonstrates how learning motivation (Z) was impacted by self-efficacy (X).

Table 7: Coefficient of Determination, Sub Structure 1.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,706 ^a	,498	,496	7,24451

a. Predictors: (Constant), ED

Self-efficacy variable (X) has a 0.498 coefficient of influence on learning motivation (Z). This means that the self-efficacy variable contributes to learning motivation by 49.8%. While the remaining 50.2% is influenced by other variables. Mathematically, the empirical model of the influence of self-efficacy (X) on learning motivation (Z) is stated as follows: $Y = Pzx + \epsilon_1$, $Y = 0.706x + 0.502\epsilon_1$.

Table 8: Coefficient of Self-Efficacy and Learning Motivation on Students' Autonomous Learning.

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1	(Constant)	9,315	3,872		2,406,017
	Efikasi Diri	,474	,090	,354	5,278,000
	Motivasi Belajar	,330	,052	,423	6,302,000

a. Dependent Variable: kemandirian belajar

The coefficient of self-efficacy (X) on students' autonomous learning is shown by the value of Standardized Coefficients beta is 0.354. The t count is 5.278 and the significance is 0.000 <0.05. This means that there is an influence of self-efficacy (X) on students' autonomous learning (Y).

The coefficient of learning motivation (Z) on students' autonomous learning (Y) is indicated by the value of Standardized Coefficients beta is 0.423. The t count is 6.302 and the significance is 0.000 <0.05. This shows that there is an influence of learning motivation on students' autonomous learning.

Table 9: Coefficient of Determination, Sub Structure 2.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,718 ^a	,516	,512	5,57010
a. Predictors: (Constant), motivasi belajar, efikasi diri				
b. Dependent Variable : Kemandirian Belajar				

The influence of self-efficacy variables (X) and learning motivation (Z) is 0.516. This means that the variables of self-efficacy and learning motivation contribute to students' autonomous learning by 51.6%. While the remaining 48.8% is affected by other variables. Mathematically, the empirical model of the influence of self-efficacy (X) and learning motivation (Z) on students' autonomous learning (Y) is stated as follows: $Y = \beta_{yx} + \beta_{yz} + \epsilon_2$, $Y = 0.354x + 0.423z + 0.484\epsilon_2$

From the results of the data analysis above, the following path structure is created by considering the impact of exogenous and endogenous variables on the dependent variable:

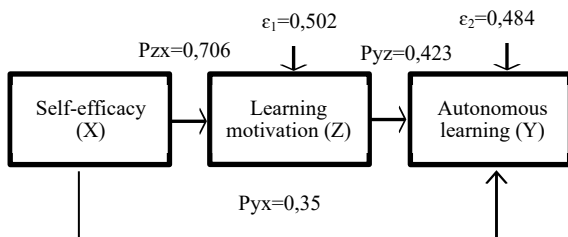


Figure 2: Complete path model of test results.

Table 10: Direct and Indirect Influence of the Path Coefficient of each variable.

No	Variable influence	Influence		Total
		Direct	Indirect	
1	X toward Y	0,354	0,032	0,386
2	X toward Z	0,706	-	0,706
3	Z toward Y	0,423	-	0,423

Based on the table above, therefore it can be said that the contribution of self-efficacy (X) to autonomous learning (Y) is 0.354 or 35.4%, meanwhile, the indirect contribution of self-efficacy and learning motivation to autonomous learning is 0.032 or 3.2 %. The direct contribution of learning motivation (Z) to students' autonomous learning (Y) is 0.423 or 42.3%. So it showed that the contribution of the direct influence is bigger than the indirect influence. This means that learning motivation as an intervening variable does not play a role in increasing student students' autonomous learning to increase students' autonomous learning is enough by increasing self-efficacy in students.

3.2 Discussion

3.2.1 The Influence of Self-Efficacy on Student Learning Motivation

According to the analysis of the first hypothesis test's findings, self-efficacy has an impact on student's motivation to learn. The student is more motivated to learn when they have a better sense of self-efficacy.

Self-efficacy is an individual believes that he feels capable of overcoming many things including the actions needed to achieve goals. Meanwhile, motivation is an encouragement that comes from inside and outside a person who is trying to find the desire to succeed in forming experiences and exercises that influence his behavior. Students who have strong self-efficacy and believe in their abilities, these students will be motivated to achieve their goals in learning, such as a sense of willingness to get appreciation from the teacher and to achieve goals in the future (Schunk & Miller, 2002).

Self-efficacy is a factor in learning motivation; a person with a high level of self-efficacy will be more motivated. (Pervin & Jhon, in Bandura, 2013). The more self-efficacy a person has, the more motivated they are to study. This is reflected in the effort and persistence in overcoming existing obstacles. When he faced difficulties, he will continue to perform his duties and not give up easily. People with high self-efficacy will use more effort to get beyond challenges.

High self-efficacy makes students more confident in having efforts to achieve good learning outcomes, Students can easily handle situations and manage demands that arise from both within themselves and the environment because they have control over their emotions and their ability to act (Zimmerman, B.J, 2000). Strong self-efficacy can increase learning motivation in achieving learning achievement at

school, and students' strong belief can solve problems or difficulties that will be faced. To enable the students to confidently resolve the problem they encounter at school (Pervin & Jhon in Bandura, 2013).

The findings of this study are consistent with the research conducted by Kurniawati (2012) and Budi, Santosa, and Suhendro (2018) who found that Self-efficacy and learning motivation are positively and significantly correlated. This demonstrates that having high levels of self-efficacy will also assist students to develop good learning motivation and enable them to finish assignments successfully.

3.2.2 The Influence of Self-Efficacy on Students' Autonomous Learning Through Learning Motivation as an Intervening Variable

Based on the results of the analysis test in the second hypothesis, it revealed that the value of Z count < Z table, which means that the parameter is not significant. The direct influence of self-efficacy on autonomous learning is bigger than the indirect influence of self-efficacy on autonomous learning through motivation.

Students with high levels of self-efficacy will be highly motivated to learn in their learning. Students will believe in themselves to do difficult tasks and try to deal with obstacles. In other words, students who have low self-efficacy typically lack confidence in their abilities. The ability of a student's self-efficacy plays a very important role in increasing learning motivation because belief in one's abilities will motivate students to be actively involved in ongoing learning.

Based on Kurniawati's research (2012) shows that Self-efficacy and learning motivation are positively and significantly correlated. However, The findings of this study show that learning motivation in Eleventh-grade students at Vocational High School 6 Padang is unable of being mediation to strengthen students' autonomous learning. Learning motivation plays no role in increasing students' autonomous learning to increase students' autonomous learning it is sufficient for students by increasing their self-efficacy.

According to Cobb (2003), the factors that influence students' autonomous learning include self-efficacy, motivation, and goals. Bandura in Jess Feist & Gregory J. Feist (2012) argues that when someone has high self-efficacy, they will have a strong capacity to control their actions. Accordingly, the degree of self-regulation in terms of independence

increases as self-efficacy increases. Students' self-efficacy has an important role in increasing autonomous learning because the foundation of self-efficacy is having belief in someone's ability to engage actively and autonomously in learning activities.

The results of this study are supported by the results of research conducted previously by Devi (2016) it shows that self-efficacy is the belief that one can act in a way that will result in the desired behavior in a certain circumstance. Consequently, having strong self-efficacy will improve a person's performance in general. Furthermore, research by Adicondro and Purnamasari (2011), February (2016), and Sari et al., (2017) shows that there is a positive relationship between self-efficacy and students' autonomous learning. Self-efficacy is a measurement of a student's confidence in his or her ability to carry out a task, accomplish a goal, or get beyond a learning obstacle.

4 CONCLUSIONS

Based on the results study, it represents that: (1) Self-efficacy has a direct influence on student students' autonomous learning. This implies that students' self-efficacy will rise along with their level of autonomous learning. (2) Self-efficacy has no influence on student students' autonomous learning through learning motivation as an intervening variable. As a result, motivation cannot be considered an intervening variable between students' self-efficacy and independent learning. To promote students' autonomous learning, self-efficacy must be increased.

Considering the result of this study, the suggestions provided are: (1) Students can increase their self-efficacy by believing that they can complete a task and achieve positive learning results. Along with enjoying the challenge of difficult tasks and working in groups rather than doing it alone to exchange opinions. (2) Students have a desire to learn on their own so that they can become more autonomous and responsible. Additionally, students look for sources of information about a subject more frequently to expand their knowledge rather than just studying for tests, and (3) To develop an active desire to learn and become skilled students, they can increase their learning motivation. It is believed that this would prevent students from easily giving up when they encounter learning difficulties.

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The Effectiveness of using English Animation Apps to Improve Students' Vocabulary Mastery at Grade V of Elementary School

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Keywords: English Animation Apps, Vocabulary, Elementary School, Student, Effectiveness.


Abstract: A vocabulary is a repertoire of words that forms the basis for a person to be able to speak. A person's English skills depend on the quantity and quality of his/her vocabulary. However, learning and remembering vocabulary is not easy for primary school students. This is because English is not a language that is commonly used daily. So a learning media is needed that can help students in learning English vocabulary. English Animation Apps is an application that contains animated videos that can be used by students as a means of learning English vocabulary. This application is a child-friendly application because children can learn while playing, so learning does not become boring. This study is an experimental research that aims to measure the effectiveness of using English Animation Apps to improve the mastery of English vocabulary of grade 5 elementary school students. The students were invited to learn English by using animations in the form of games and light exercises. Furthermore, students were given pre and post-tests that would assess the improvement of English vocabulary mastery. The students are taught to remember several vocabulary words and simple grammar. The vocabulary in this study is measured into 4 aspects, namely: verb vocabulary, noun vocabulary, adjective vocabulary, and adverb vocabulary. The results showed that the application of English Animation Apps can improve students' mastery of English vocabulary.


1 INTRODUCTION


The language of English is one of the most important international languages that should be mastered by the Indonesian generation to be able to compete in the era of digitalization. English has even been taught since children were in primary education. English has even been included in the school curriculum as one of the languages that must be learned (Dewi, Zaim, and Rozimela 2022). People express themselves through language. It is used to share their ideas, emotions, and opinions with others in addition to expressing them (Karnedi and Utami 2022)


However, the results of EF (Education First) research in 2016 on English language skills show that Indonesia ranks 32nd out of 72 countries studied with a score of 52.94 or in the middle ability level category. This score is lower than 3 other ASEAN countries, namely Singapore in 6th place (score 63.52 with a very high proficiency level), Malaysia in 12th place (score 60.70 with high proficiency level), and the Philippines in 13th place (score 60.33 with very high proficiency level). Even Indonesia's English proficiency score is lower than Vietnam, which is one level above Indonesia's or 31st (score 54.06). This proves that it takes hard work from various parties to increase the level of English proficiency of the

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Indonesian population to at least a high category level.

As an effort to improve students' ability in English, English subjects are directed to develop four skills that must be mastered, namely listening, speaking, reading, and writing. Furthermore, the key for these four skills to develop well is the mastery of vocabulary in English (Azizah 2020).

Vocabulary is the vocabulary of a language (Sayekti 2015). A person's vocabulary mastery can affect the way they communicate, if their vocabulary mastery is good, then someone will find it easier to arrange words into sentences than people with poor vocabulary mastery. Vocabulary should be taught from the basic level to give more time to learning English (Pitriana and Syahrudin 2013).

Adequate vocabulary mastery can determine the quality of a person in language. Without sufficient knowledge of English vocabulary, students will not be able to convey or receive messages effectively. Vocabulary learning must be done effectively, namely contextual vocabulary learning, learning that is following communication objectives, learning that is meaningful in everyday life, and carried out actively, creatively, and fun (Septina, Hasyim, and Sukirlan 2015).

Vocabulary is the basic element that a student should master before learning a language (Muhyidin 2018). If the vocabulary is not sufficiently mastered, the idea cannot be conveyed. The students should know the meaning of the vocabulary, be able to spell the vocabulary appropriately, be able to use the vocabulary appropriately in the sentence, and be able to pronounce it appropriately. Some problems in mastering vocabulary in students are very diverse ranging from errors in spelling, pronunciation, and choosing the right words in writing and speaking (Muhyidin 2018).

A vocabulary is a word treasury that is the basis for a person to be able to speak, a person's language skills depend on the quantity and quality of his/her vocabulary (Suryana and Septian 2019). However, learning and remembering a large vocabulary is not easy.

Therefore, a learning media is needed that can help students in learning vocabulary. The use of media or tools is very helpful in learning activities, especially in improving student learning outcomes (Rindawati, Thamrin, and Lusi 2022).

Nowadays, the advancement and sophistication of technology put all affairs at the fingers of humans, known as the cyber world. Wise and innovative utilization of technology can help increase students' interest in learning English. Therefore, learning

media in the form of applications is needed to make learning activities more interesting that not only use visuals but also audiovisuals. Zaim (2016), innovative learning media can be produced by utilizing technology. Technology-based learning media has the potential to transform the traditional classroom into an infinite world of imaginary environments. Students can learn independently so that they can learn anytime and anywhere without the need for intense guidance from the teacher. The students were able to use and learn English easily and efficiently.

Technological developments have produced a variety of smartphones that provide a variety of innovative and creative features, one of which is Android. Android is an operating system for mobile phones (mobile phones) that is assisted by Linuk. Android is a mobile device that includes an operating system, middleware, and key applications. Android provides an open platform for developers to create their applications for use by various mobile devices, by providing an open platform, android developers offer the ability to build very rich and innovative applications (Purnamasari and Wiranatha 2014)

Through the development of this technology, it provides an opportunity for learning to be carried out using the Android platform in helping students' understanding and fluency in learning English. (Purnamasari and Wiranatha 2014) explains that Android is an operating system for Linux-assisted mobile devices that includes an operating system, middleware, and applications released by Google. Android is provided openly (open source) so that developers freely develop applications. The nature of the Android free platform makes it easy for users to freely create applications with no royalties to pay, no membership, no testing fees, and no contracts required and can be freely distributed in various forms.

There are three types of learning media used by educators in classroom learning: auditive, visual, and audiovisual. From the aspect of cognitive development, audiovisual learning media is the right media to use at primary school age. Piaget's cognitive development theory explains that the age of 7-11 years is called the concrete operational phase, which is a phase that is characterized by the limited ability of children to understand things that are not concrete or abstract. The learning process, especially for children, is not easy because most children are not able to focus when learning. Another difficulty for children in learning is due to the tendency of children's learning patterns that prefer to play is also very influential so theoretical learning alone is not

optimal for learning English in children. In addition, English is not a language that is used daily by children and parents, so they are not used to capturing what the teacher says and pronouncing the pronunciation in English. This results in the length of time that children need to be able to communicate using English.

Hence, the use of audiovisual media is the right choice for them as the benefits and advantages of audiovisual media are mentioned earlier. Audiovisual media can make learning more meaningful, varied, and interesting, and enrich the learning experience of students (Fatmawati 2021).

Audiovisual learning media is one form of animated video. English Animation Apps is an application that contains animated videos that can be used by students as a means of learning English vocabulary. This app is a child-friendly app because children can learn while playing, so learning does not become boring. Play is a means of learning for children. Through play, children are invited to explore, discover, utilize, and draw conclusions about the objects around them. This makes a breakthrough as an educational or training program packaged in the concept of entertainment a solution in the learning process so that every child is almost unaware that they are being invited to learn.

The learning video that is packaged interestingly is one of the efforts to increase students' interest in learning, especially in memorizing English vocabulary. In the learning process, the media used must be able to attract children's attention so that it can foster learning motivation, teaching materials will be clearer in meaning so that they can be better understood by children and allow children to better master teaching objectives, and teaching methods will be more varied, not merely verbal communication through words by the teacher so that children are not bored and teachers do not run out of energy (Marlianingsih, 2016).

Therefore, this research is important to measure the effectiveness of using English Animation Apps in improving the English vocabulary of primary school students.

2 METHOD

A focus on recognizing different techniques is placed between quantitative and qualitative research (Karnedi, Zaim, and Mukhaiyar 2021). This is quantitative research. Data collection focused on the respondents' profile, English vocabulary acquisition, and English language skills before and after the

application of English Animation Apps. This research was conducted in the year 2021 on the 5th-grade elementary school students a total of 120 students who came from 4 schools in Padang Pariaman Regency.

The data in this research consisted of primary data. Primary data was collected through pretest, posttest, and student observation.

Data processing used Microsoft Excel version 2010. Data were inputted, cleaned, and tabulated, then categorized. After that, the data was analyzed using quantitative analysis.

Testing the effectiveness of using English Animation Apps in improving students' English vocabulary and language skills was obtained using a data collector in the form of a test. (Riduwan 2006) define a test as a data collection instrument as a series of questions/exercises used to measure knowledge skills, intelligence, abilities, or talents possessed by individuals/groups. The test was conducted in the effectiveness test in the form of a pre-test and post-test using the development product in the form of multiple choice.

The objective test in the form of multiple-choice items is known as an objective test in the form of multiple-choice items. The pre-test and post-test instruments to measure English vocabulary mastery consist of items that will assess students' vocabulary mastery in verbs, nouns, adjectives, and adverbs. Primary school students' English proficiency was measured by simple questions covering 4 (four) aspects of proficiency, namely: listening, speaking, writing, and reading.

3 RESULT AND DISCUSSION

This research is a type of experimental research that aims to measure the effectiveness of using English Animation Apps to improve vocabulary mastery in English for grade 5 elementary school students. The students are invited to learn English by using animations in the form of games and light exercises. Furthermore, students were given pre and post-tests that would assess the improvement of vocabulary acquisition and English language skills.

This research is interesting to do because technological developments make it easier for students to learn English. Advances in technology have produced a variety of interactive media, especially in the form of applications. Various applications are intended for all groups, from school-age children to adults. Children can use the app as a fun learning tool. Various studies have been

conducted to measure the effectiveness of learning using this technology.

Some of these studies show that learning that integrates technology and information in practice can build students' interest and improve their ability in learning. This is because the development of the digital world makes students either directly or will follow the development.

Huang (2018) developed an English language learning system using an Android (smartphone) application. The purpose of this research and development is to create a learning environment that can learn anywhere and anytime. The results of his research show that the designed application attracts students' interest in learning English. In addition, students' English skills also improved after using this application, especially listening skills.

In the Indonesian Minister of National Education Regulation No. 22, the Year 2006 concerning Content Standards for Primary and Secondary Education Units, there are three scopes in English subjects, namely: (1) Discourse skills, namely the ability to understand and/or produce oral and/or written texts that are realized in four language skills namely listening, speaking, reading, and writing in an integrated manner to achieve a certain level of literacy. The four skills are used to respond to or create discourse in social life. Therefore, English subjects are directed to develop these skills so that graduates can communicate and discourse in English at a certain literacy level; (2) The ability to understand and create a variety of short functional texts and monologues as well as shaped essays. The gradation of teaching materials appears in the use of vocabulary, grammar, and rhetorical steps; and (3) Supporting competencies, namely linguistic competence, sociocultural competence, strategic competence, and discourse-forming competence (DEPDIKNAS, 2004).

The sample in this research is 120 grade 5 elementary school students consisting of 70% female students and 30% male students. Female students are more than male students.

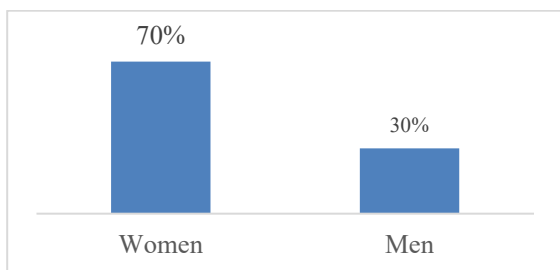


Figure 1: Percentage of Respondents based on Gender.

The English language has a lot of complex and irregular vocabulary and spellings. This is due to the fusion of various words from different languages. However, in this study, students were taught to memorize several vocabulary and simple grammar. A vocabulary usually starts with things seen around. For example, animals, number sequences, fruits, and so on.

The important thing in developing English in children is by introducing vocabulary. The vocabulary introduced to children can start with things that are very close to children's lives, for example, verbs, names of body parts, names of fruits, names of animals, and others (Salsabilah 2020).

Rahmawati (2013) explains that in using learning methods and media to develop children's English vocabulary, it is also important to combine it with games. This is because playing for children is a fun activity. If in the past playing was done in the classroom and the field using only conventional media, then the innovation that can be created today is by utilizing media that is under the conditions of modern times today.

Figure 2 shows that there is an improvement in students' English vocabulary mastery after the application of English Animation Apps. Vocabulary mastery in this study is measured in 4 aspects, namely: verb vocabulary, noun vocabulary, adjective vocabulary, and adverb vocabulary.

The pretest score showed that the average score of students' English vocabulary acquisition before the use of English Animation Apps was 31.5 points, with details: verb (30 points), noun (35 points), adjective (30 points), and adverb (30 points). Meanwhile, after the use of English Animation Apps, there was an increase in students' mastery of English vocabulary by 31.5 points. The average score of students' posttest is 62.5 points, with details: verb (60 points), noun (65 points), adjective (65 points), and adverb (60 points).

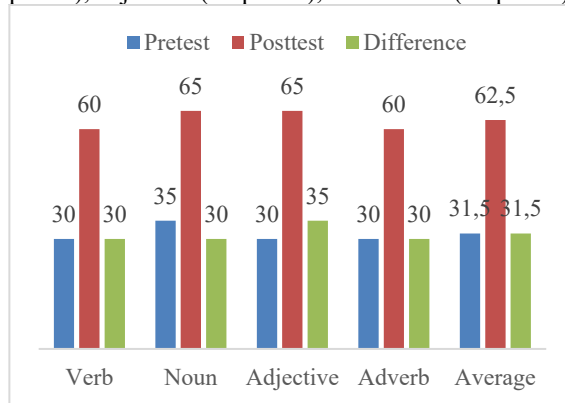


Figure 2: Score of Students' Vocabulary Mastery.

The results are similar to the research of Suryana and Septian (2019) who applied the Let's Learn English application to children aged 5-12 years. This android-based Let's Learn English application consists of 6 basic English vocabulary training materials regarding colors, numbers, fruits, letters, fruits, animals, and objects. The application is also accompanied by exercises and evaluations to measure children's understanding. This application is supported by images, sounds, and animations that are expected to attract children's interest in learning. The results of the application evaluation show that this application can improve learners' understanding of the material about basic English vocabulary with the application of fun interactive learning.

Furthermore, the results also show that more than 90% of students feel happy learning English vocabulary using English Animation Apps. This result is reinforced by the observation which shows that students seem enthusiastic in learning English. More than 80% of students were active during learning.

In addition to English vocabulary mastery, this study also measured students' English language ability after the use of English Animation Apps. Students' English proficiency was measured using pretest and posttest instruments. These pre-test and post-test instruments consist of questions that will assess students' English skills in 4 (four) aspects, namely: listening, speaking, writing, and reading. The questions in these 4 aspects relate to simple things in everyday life.

language skills in the curriculum at school usually include four aspects, namely speaking, listening, reading, and writing skills. Each skill is closely related to the other three skills in various ways. The four skills are one unit, commonly referred to as a game of single chess. Furthermore, each skill is also closely related to the thought processes that underlie language. A person's language reflects his or her thoughts. The more skillful a person is in language, the brighter and clearer his or her way of thinking. Skills can only be mastered through practice and training.

The assessment of English language learning is an activity to measure learners' mastery of English and to obtain information on the extent to which the indicators of success that have been formulated have appeared in learners' English language behavior. The results of the assessment can be communicated to learners qualitatively, in the form of descriptions of their language behavior, or quantitatively, in the form of grades, or both. Whatever the form, assessment is an integral part of learning activities and should have

a positive impact on the development of target competencies. Thus, assessment is conducted throughout the learning process (Panjaitan 2010).

Meanwhile, (Bachman 1990) terms communicative skills with the term language ability, which is a construct that should be measured in language tests. Thus, learning must be directed towards mastering the competence of the four language skills so that graduates can communicate. For example, for speaking skills, learning is directed at developing learners' competence in performing speech acts such as opening a conversation, maintaining it, closing a conversation, asking for help, greeting, expressing joy, apologizing, inviting, and so on in a particular context. For writing skills, learning is directed at developing learners' ability to perform communication (rhetorical) steps, such as elaborating, adding, sharpening ideas, and concluding.

Figure 3 shows that the pretest scores indicate that the average score of students' English language skills before the use of English Animation Apps was 15 points, with details: listening skills (10 points), speaking skills (15 points), writing skills (30 points), and reading skills (20 points). Meanwhile, after the use of English Animation Apps, there was an increase in students' English language skills by 17.5 points. The average student posttest score is 32.5 points, with details: listening ability (25 points), speaking ability (30 points), writing ability (35 points), and reading ability (40 points). This means that the use of English Animation Apps can improve the English language skills of elementary school students.

These results are in line with the results of research by (Leong and Ahmadi 2017) who conducted research related to factors that affect students' English language skills, especially in speaking. The results showed that English language ability is influenced by several factors including students' interest in learning English, teachers' teaching methods, teaching materials and learning media used by teachers, and students' level of practice in speaking English. Teachers should be able to increase students' confidence in speaking English so that students feel more comfortable. In addition, interactive learning materials can improve students' ability to speak English. This is because students can learn and practice English with more fun.

Furthermore, the results of Salsabilah's research (2020) also show that the use of English educational video games can help children increase their English vocabulary. In addition, the use of English video games can attract interest and increase children's

interaction in learning so that the introduction of English vocabulary will be more effective.

Therefore, it is important to pay attention to the material, duration, ability level, and specificity of the children.

It can be done by introducing English vocabulary to children about things that are closest to the child's life through English educational games. This can make children interested and not easily forgotten by children. Through English educational video games by considering children's distinctiveness, language development, and language acquisition theory, it can be an effective way to develop children's English vocabulary.

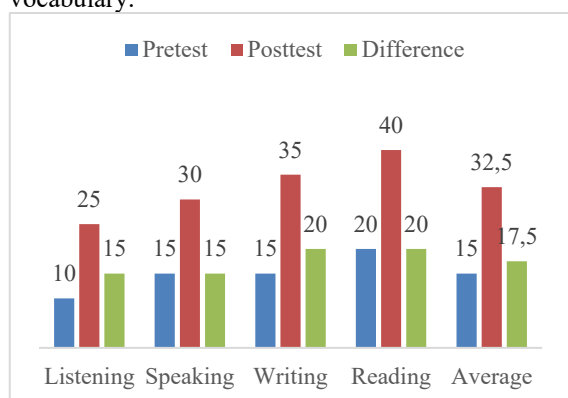


Figure 3: Score of Students' English ability.

4 CONCLUSIONS

Some of the problems in mastering vocabulary in students are diverse ranging from errors in spelling, pronunciation, and choosing the right words in writing and speaking. This is because English has a lot of complex and irregular vocabulary and spelling. However, in this study, students were taught to memorize several vocabulary and simple grammar. A vocabulary usually starts with things seen around. For example, animals, number sequences, fruits, and so on. Vocabulary mastery in this study is measured in 4 aspects, namely: verb vocabulary, noun vocabulary, adjective vocabulary, and adverb vocabulary.

Advances in technology have produced various interactive media, especially in the form of applications. Various applications are intended for all groups, from school-age children to adults. Children can use apps as a fun learning tool. Various studies have been conducted to measure the effectiveness of learning using this technology.

Some of the research results above show that learning that integrates technology and information in practice can build students' interest and improve their

ability in learning. This is because the development of the digital world makes students either directly or will follow these developments.

Testing the effectiveness of using English Animation Apps in improving students' English vocabulary and language skills was obtained using a data collector in the form of a test. The pre-test and post-test instruments to measure English vocabulary mastery consist of questions that will assess students' vocabulary mastery in verbs, nouns, adjectives, and adverbs. Meanwhile, the English language skills of primary school students were measured from simple questions covering 4 (four) aspects of ability, namely: listening, speaking, writing, and reading.

The research results show that there is an increase in students' English vocabulary mastery after the application of English Animation Apps. The pretest score showed that the average score of students' English vocabulary acquisition before the use of English Animation Apps was 31.5 points. The average post-test score was 62.5 points. This means that after the use of English Animation Apps, there was an increase in students' mastery of English vocabulary by 31.5 points.

The results also showed that more than 90% of students felt happy learning English vocabulary using English Animation Apps. This result was reinforced by the observation which showed that students seemed enthusiastic in learning English. More than 80% of students are active during learning.

Further, the results also show that the use of English Animation Apps can improve the English language skills of primary school students. The average score of students' English proficiency before the use of English Animation Apps.

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Increasing Interest for Student Learning of Light Vehicle Engineering in Vocational Schools Through the Development of Proteus Simulator Media after the Covid-19 Pandemic

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Keywords: Interest in Learning, Development of Media Proteus.

Abstract: The purpose of this study is to develop learning media through proteus simulator media in the subject of Automotive Fundamentals (DDO) to increase the interest in learning vocational high school (SMK) class X automotive light vehicle engineering competencies. This type of research uses at of research and development (R & D) with an ADDIE development model. This research phase includes analyze, design, implement and evaluation. Validation and reliability of research instruments were carried out with two media judgment experts and one material expert. The feasibility of the media is determined by the assessment of material experts and media experts. Practicality of the product through the assessment of teachers and students. Students' interest in learning is based on a questionnaire of student interests. Data collection is carried out by observation and questionnaire. As for data analysis, it uses descriptive analysis. This type of research uses atype of research and development (R & D) with an ADDIE development model. This research phase includes analyze, design, implement and evaluation. Validation and reability of this research results in the form of a simulator media with a proteus application on simple electrical circuit materials for class X students of Light Vehicle Engineering developed through research and development of the ADDIE model. Media eligibility based on media experts has a percentage of 93.75% classified as very feasible, while media practicality has apercentage of 85.21% classified as very feasible and students' interest in learning has an increase of 74.6% which is included in the moderate category.

1 INTRODUCTION

The Covid-19 pandemic is one of the world events crisis that has caused problems towards invarious sectors, including the education sector. The learning process must be limited by distance, this is because the virus is so dangerous and extremely contagious. The efforts were attempted by the government to prevent the transmission of the Covid-19 virus and by made a crowd-limit policies and activities.

The policy that were carried out by the government also pose risks in the process of learning activities. The impact of the policy for imposing restrictions on community activities that were recommended by the government is the occurrence of restrictions in the process of teaching and learning activities. The learning process that was previously

carried out face-to-face must be carried out using a distance learning model. This led to changes in the culture of teaching and learning. The teacher's process of observing children's development both in terms of attitudes, knowledge and skills becomes completely limited. Students tend to be struggling in their observation as this pandemic has led to learning loss and lack of acknowledgment.

Vocational High School is an educational institution to form students so they can have the provision of knowledge to face the industrial era 4.0. In this era, students are formed to have 4 skills, such as collaboration, communication, critical thinking, and creativity so that they are fully prepared to enter the 4.0 generation, or to be known as the Cyber Physical system. Vocational High Schools are also affected by the presence of Covid-19. Learning in Vocational High Schools consists of learning theory

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and practice. With the imposition of restrictions on community activities, learning activities, both theory and practice, cannot be carried out face-to-face.

The occurrence of learning loss and lack of acknowledgment in Vocational High School students in particular raises concern for the Government. Various attempts were made to overcome this problem. Curriculum changes implemented are one that can overcome the occurrence of learning loss which is often known as the independent curriculum. After the covid pandemic were decreased, learning activities were finally allowed to hold limited face-to-face learning and teaching process.

Based on the results of observations at State Vocational High School 1 Seyegan, Sleman district, Special Region of Yogyakarta on the "Teknik Kendaraan Ringan dan Otomotif" competence, it is currently permitted to hold 100% face-to-face meetings in both theoretical and practical learning. However, there is still a time limit, which to be on term that each subject or classes has 35 minutes time limit. Class X already begun the usage of "Kurikulum Merdeka" whilst classes XI and XII still use "Kurikulum 2013".

The impact of learning "Teknik Kendaraan Ringan dan Otomotif" for students is reduced interest in learning. Interest in learning is the willingness to participate in learning activities that originate from conscience (Suprijanto, 2007: 25). According to Muhibbin Syah (2012: 136) that, "interest in learning is tendency and high enthusiasm or a great desire for something." So, asking to learn can be concluded high desire and curiosity to participate in learning activities. The cause of the decreased interest in learning is that students are accustomed to learning using a distance learning model, this creates a feeling of laziness and lack of enthusiasm in participating in learning at school. Therefore, teachers are required to innovate in order to overcome these problems. One of the innovations that can be done is with simulator learning media.

Digital simulator learning media in the application forms can be used to flexible study both in terms of location and time. Changes in the atmosphere of the process to teaching and learning activities such as adding simulators in interesting media and leading to basic competencies and computers can be used as an alternative to make students more motivated to concentrate on learning. One usage for the learning medium is the development of computer-based learning media simulator models. The simulator model is a model for delivering information or messages in the form of a concept presented on a computer screen with text,

images, or graphics (Reza Mega Mawarni, Rina Harimurti, 2016).

In "dasar-dasar otomotif" subject, there is especially basic electricity material. With this simulator media, it is hoped that students will be more interested and increasing their curiosity in the basic material of electricity. This material itself has the competence to carry out simple electrical circuits. Which is the initial foundation of light vehicle electrical material. So, with this media it is very suitable when using this media simulator.

There are many simulators application models that can be used as learning media, one of which is the proteus software. This software is one of the electronic software used to design and simulate electronic circuits so that the software is chosen as a suitable learning medium to support learning of simple electrical systems. By using the proteus application, digital system learning activities are easier to understand (Syahminan, 2020).

Based on the description above, it is very important to develop simulation-based learning media to support practical learning of lighting systems that can improve student competence. Simulator learning media is expected to be able to help students for simulating an assemble of a series of simple electrical systems so that when carrying out practices it can reduce trial and error as the learning can run effectively and efficiently.

2 METHOD

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Please remember that all the papers must be in English and without orthographic errors.

Do not add any text to the headers (do not set running heads) and footers, not even page numbers, because text will be added electronically.

For a best viewing experience the used font must be Times New Roman, on a Macintosh use the font named times, except on special occasions, such as program code (Section 2.3.8).

2.1 Page Setup

This type of research uses the type of Research and Development (R & D) with the ADDIE development model. This research phase includes analyze, design, implement and evaluation.

Validation and reliability instrument of this study was conducted with two people media experts judgement and one skilled matter experts. The worthiness of the media determined by an assessment of the people’s matter and media experts. Practicality, teachers and students were conducting products through an assessment. The people’s material to agrating validation were being explained in the following table.

Table 1: Material expert validation instrument.

No	Aspect	Indicator
1.	Learning Design	Compatibility with learning outcomes and Learning objectives.
		Specific learning materials.
		Illustrations that support learning materials.
		Practice question that support learning.
2.	Material Aspect	Does not depend on teaching materials/other media.
		Adjusting science and technology,as well as being flexible to use.
3.	Utilization	Useful in helping learning.

Based on the grid from material experts, there are several indicators, including conformity with learning objectives and achievements, more specific materials, illustrations that support learning materials, practice questions that support learning, are not dependent on teaching materials and other media, adjust to science and technology, and are flexible to use and useful in helping learning.

In the other hand formed in an experts, the aspects assessed include media quality,word usage and media layout for the media experts grid which are explained in the following table.

Table 2: Media expert validation instrument.

No	Aspect	Indicator
1.	Media Quality	Quality of the simulator
		Ease of use
		Text clarity/readability
		Image quality
2.	Sentence usage	Quality of word usage
3.	Media layout	Simulator serving quality
		Layout

Media feasibility is carried out by conducting small-scale trials and large-scale trials. Media feasibility test based on questionnaires distributed by students. Media fit test indicators are described in the following table.

Table 3: Media fit test instrument.

No	Aspect	Indicator
1.	Material	Material suitability
		Does not depend on teaching. Materials/other media
		Ease of operation
		Ease of choosing material
		Clarity and appearance display
		Useful for learning

Interest in student learning based on interest questionnaires.Data collection was carried out by observation and questionnaires. The questionnaire itself was made based on a differential sematic scale created using the Google form application. The differential sematic scale is illustrated in the following figure.

Table 4: Sematic diferensial scale.

Very Negative	1	2	3	4	5	6	7	Very Positive
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Validation of interest in learning is carried out using construct validation, namely aform of compatibility testing which is carried out by comparing the theories contained in the questionnaire with the theoretical basis used to define a concept, Zainal Mustafa EQ (2009: 166). Based on testing the construct validity of the interest in learning questionnaire,it was found that there were 8 questionnaire numbers that failed because its less than 0,244.

As for data analysis using descriptive analysis.The data obtained from the descriptive analysis include Mean(M),Median(Me),Mode(Mo),

Standard Deviation (SD), maximum values, minimum values, frequency distribution tables, histograms, and variable trend tables.

3 RESULT AND DISCUSSION

Based on the results of the development of the Proteus software simulator media which had previously been validated by media experts, material experts, small-scale trials and large group trials,the following results were obtained.

1. Based on the design of learning media software proteus media in the eyes of electricity learning material, it can be accepted by class X “Teknik Kendaraan Ringan dan Otomotif” competence
2. Assessment of material experts based on the media developed includes learning design, material aspects and material utilization.
3. Results of small group and large group trials of class X “Teknik Kendaraan Ringan dan Otomotif” at Vocational High School 1 Seyegan.

Small group trials were carried out by distributing questionnaires with 11 respondents and large-scale trials with 23 respondents.

Based on the media expert's assessment, it was explained that learning design has a value of 43 in a percentage of 76.78%, while the material aspect has a value of 26 in a percentage of 90% and media utilization has a maximum value of 100%. The three categories of media are included in the very feasible category.

In the other hand formed in an expert the aspects assessed include media quality, word usage and media layout which are explained in the following table.

Table 5: Media Expert Assessment Results.

Mediaquality.	Sentenceusage.	MediaLayout.
37	8	30
92.50%	100%	93.75%

In the table above it is explained that the quality of the media has a percentage of 92.50%, the use of words is 100% and the layout of the media is 93.75%. It can be concluded that the Proteus software media is classified as very feasible based on media experts.

The results of the next data are assessments according to material experts. Material expert validation is selected based on the level of education and length of teaching on the material. Based on the assessment of material experts, the following results were obtained.

Table 6: Material Expert Assessment Results.

Learning Design.	Material Aspect.	Utilization.
76.78%	90%	100%

Based on the table above it is explained that the learning design according to material experts is 76.78%, for material aspects is 90% and for utilization is 100%. Cumulatively, it can be concluded that according to material experts, the learning media for Proteus software is very feasible.

Table 7: Large scale media trials.

Material.	Learning Design.	Appearance.	Utilization.
87.39%	79.34%	84.37%	88.58%

In the table, it is explained that the material aspect has a percentage of 87.39%, learning design has a percentage of 79.34%, for display is 84.37% and in terms of usefulness it has a percentage of 88.58%. So it can be concluded that large-scale trials get very decent categories.

To measure student interest in learning, the implementation of the Proteus software simulator media was carried out on the basic material of automotive electricity on learning interest. The results of the study show that interest in learning has an increase of 74.6% which is included in the moderate category. The description of the implementation of media on learning interest is described in the following table.

Table 8: The results of increasing student learning interest.

No.	Frequency.	Percentage(%)	Category
1	3	9,0	High.
2	14	4,6	Medium.
3	10	16,4	Low.
Total.		100,0	

explained that with a total of 27 students, 3 students experienced a high increase, 14 students had a moderate increase, and 10 students had a high increase.

Below are the advantages of media simulator with proteus software.

1. Proteus software media can make it easier for student to better understand the basics of electricity.
2. Proteus software media can be used individually.
3. Proteus software media can prevent trial and error in understanding the learning process.
4. Proteus software media is more flexible regarding usage and usage time.

Below are the disadvantages of media simulator with proteus software.

1. Requires electricity when using media.
2. The material discussed is only about the basics of electricity.






4 CONCLUSIONS

Proteus software media was developed through research and development of the ADDIE model. Media feasibility based on media experts has a percentage of 93.75% which is classified as very feasible, while the practicality of the media has a percentage of 85.21% which is classified as very feasible, and the implementation of student learning interest has an increase of 74.6% which is included in the medium category.

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Welcoming the Emancipated Curriculum: Has the Teachers Been Technology Literate?

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Keywords: Emancipated Curriculum, Technology, Mathematics.


Abstract: One of the numerous changes that have taken place in education since the COVID-19 pandemic is the alteration of the curriculum, namely The 2013 Curriculum, the Curriculum in Special Circumstances, and the Emancipated Curriculum. Teachers must innovate in the classroom when using the Emancipated Curriculum. Information technology is a crucial instrument for innovation in learning. Teachers must be able to produce content using materials for independent learning. The Emancipated Curriculum requires teachers to be more technologically literate. Especially in the regarded as challenging and abstract field of mathematics. The goal of this study was to evaluate teachers' abilities to facilitate mathematics instruction using technology when implementing the Emancipated Curriculum. A descriptive qualitative research methodology is employed. Through interviews and giving questionnaires to math teachers, data was gathered. The Miles approach is used in data analysis, which involves gathering data, verifying it, and generating conclusions. The findings indicate that: 1) geogebra is one of the applications that the mathematics teacher has used to teach; 2) not all teachers are literate at utilizing technology to aid students' study of maths; 3) there are not enough resources and infrastructure in place to support the use of technology in math learning.


1 INTRODUCTION


The learning curriculum underwent several adjustments during the COVID-19 period to improve student proficiency in academic subjects. A curriculum is a collection of subjects and educational programs offered by a school that includes lesson plans to be taught to pupils throughout the course of one level of education. The 2013 Curriculum and the Curriculum in Special Conditions are the curricula used (Kemendikbud, 2022).


It needs to be modified because the 2013 Curriculum and the Curriculum in Special Conditions have failed to stop learning loss. During the COVID-19 pandemic, learning shifted from being offline to being online (DeCoito & Estaiteyeh, 2022). As a result, the Minister of Education, Culture, Research, and Technology developed a curriculum in the framework of learning recovery based on the diversification principle in line with the circumstances of the educational unit, regional potential, and pupils. The in question curriculum is the Emancipated Curriculum, which makes use of the

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National Education Standards and helps students create Pancasila student profiles to achieve the country's educational objectives.

Not all schools are currently mandated to use the Emancipated Curriculum. This is adjusted for educational units recognized as implementing the Emancipated Curriculum, known as the Driving School for public schools and the Center for Vocational High Schools of Excellence for vocational schools, as well as for the readiness of schools to carry out its implementation (Kemendikbud, 2022). Independence in the Emancipated Curriculum's implementation is both independent and reflective. The Emancipated Curriculum's learning approach aims to realize students' holistic and contextual learning. For kids to learn more meaningfully and practically than only by memorization. The revised curricula mandated that teachers change their teaching methods from being teacher-centered to becoming more student-centered. It is advised that teachers transition from their position as the primary source of learning to that of facilitators and observers (Rahimi & Alavi, 2017).

The transformation of the educational system and the promotion of national competitiveness is a difficult, protracted task that calls for a comprehensive, multifaceted strategy (Price, 2015). Because the challenges we confront in our world are so complicated, it takes the fusion of many different disciplines, ideas, and abilities to address them (Roehrig et al., 2021). Mathematics is one of the disciplines covered in school. Given that mathematics contains many parts that are relevant to other topics, including chemistry, physics, and economics, education providers should regularly examine mathematics curriculum development initiatives (Wilkins, 2015).

The background of the challenging and monotonous mathematics course in school is frequently mentioned. This motivates educators to experiment so that instruction can be enjoyable and well-received by students (Arnold & Sangrà, 2018). Given that their classmates are more adept at the material than they are, the difficulties encountered frequently stem from the failure to apply the principle of continuity in the subject matter contained in mathematics. This results in students losing interest in learning, developing psychological disorders, and developing cognitive disorders (Karakolidis et al., 2021; Yeh et al., 2019). Due to the multiplicity of impacting factors, the subject matter needs to be innovative.

It is possible to innovate in math education by using technology-based learning resources to make

lessons more meaningful. The study and ethical use of employing appropriate technological processes and resources to promote learning and improve performance are known as educational technology. The use of technology can encourage resolving these issues in line with the government's objective of creating the Emancipated Curriculum to prevent learning loss after the pandemic is not too widespread. The advancement of information and communication technologies can be used as teaching resources to facilitate learning (Tyler-Wood et al., 2018). A seamless learning process can be supported by communication technology in the form of print and electronic media, including television, numerous Android applications, and laptops (Anggraini et al., 2022).

The pandemic era is a phase of transition from the Industrial Revolution 4.0 to the Society 5.0 era (Tempelaar et al., 2012). Era Society 5.0 combines humans and technology. Humans are technology's primary focus, and vice versa. It was introduced in Japan at the start of 2019 in the Society 5.0 period, which is based on technological advancement. Because of this, the field of education in Indonesia has been significantly impacted by technological advancements in the era of Society 5.0. The effectiveness of the nation's human resources—specifically, the calibre of its teachers or educators—determines how well it will be able to meet the demands of Society 5.0.

Teachers must possess a variety of abilities and be able to adjust to emerging technologies and global concerns, particularly as information and communication technologies advance. Teachers can use a variety of technological teaching tools, including podcasts (non-streaming audio broadcast), infographics, PowerPoint, motion graphics, Google Forms, Quiz, and others. With the aid of a variety of educational resources, including text, images, audio, video, simulations, etc., this technology enables students to get lessons from the comfort of their homes (learn anywhere and anytime) (Useche et al., 2022) Therefore, instructors must implement the use of teaching material technology in the Emancipated Curriculum.

The shift from the industrial revolution era 4.0 to the establishment of the Society 5.0 era after the pandemic period aims to make it simpler for pupils to acquire and comprehend the offered information, so that students themselves might benefit from it when coping with technological advancements. Additionally, the topic of using this technology—specifically, digital technologies in education—was also covered at the G20 forum. This suggests that one

of the most crucial things to do is to use technology in education.

Everyone had to learn to adapt to these rapid changes in life's many spheres, including schooling, which included using digital technological tools. During the pandemic, there has been an incredible acceleration in the employment of digital technologies in the field of education. Technology was brought up as a top issue at the 2022 G20 on Education and Culture meeting for this reason. The foundation of this research is based on information that is currently in circulation, both with regard to the replacement of Emancipated Curriculum and the use of technology in education. Teachers are undoubtedly involved in the use of technology, both as users and as creators of technology-based learning materials. The goal of this study was to evaluate teachers' abilities to facilitate mathematics instruction using technology when implementing the Emancipated Curriculum.

2 METHOD

The research method used is descriptive qualitative research. The subjects of this study were mathematics teachers at SMA Negeri 2 Kerinci which is a Mobilizing School and has implemented the Emancipated Curriculum in grades X and XI. The sampling technique used was purposive sampling, in which researchers deliberately chose individuals to be research informants. The sample used in this study amounted to 6 people. Data collection was carried out through interviews and questionnaires. The questionnaire is given via google form. The data collection carried out aims to determine the teacher's ability to create and use technology as a learning medium. Data analysis uses the Miles method, namely data collection, verification, and concluding.

3 FINDING AND DISCUSSION

Based on the results of interviews and questionnaires that were distributed to math teachers at SMA Negeri 2 Kerinci, the following results were obtained:

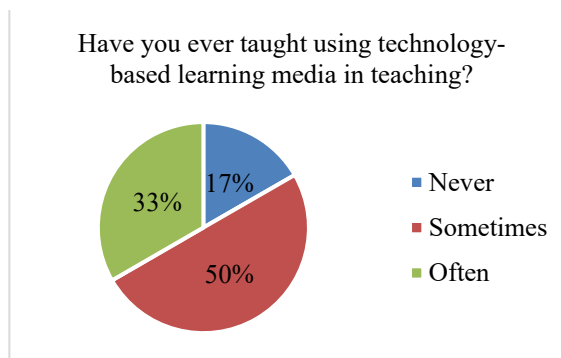


Figure 1: Use of Technology-Based Learning Media.

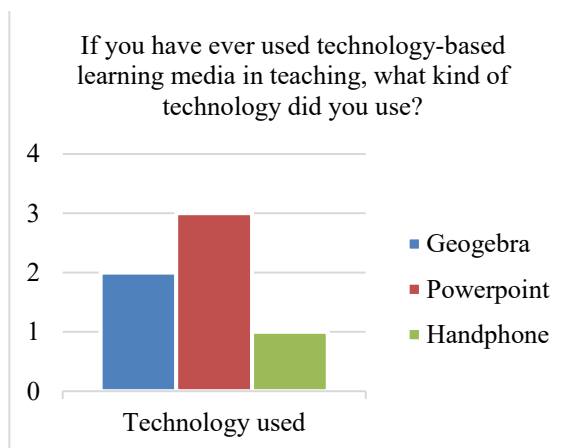


Figure 2: Types of Technology Ever Used.

Based on Figure 1 it is known that there are still 17% of teachers who have never used technology-based learning media in learning mathematics. Mathematics teachers who have used technology-based learning media have a percentage of 50%. Next, the question arises what types of learning media have been used by mathematics teachers in learning? The results of the questionnaire in Figure 2 show that the most technology-based learning media used by mathematics teachers is PowerPoint.

Figure 3 and Figure 4 illustrate that most mathematics teachers admit that they have participated in training on the use of technology-based learning media several times, but of the 83% of teachers who have attended training, not all of them apply the results of the training in mathematics learning activities. Only 50% or half of the number of mathematics teachers apply the results of the training.

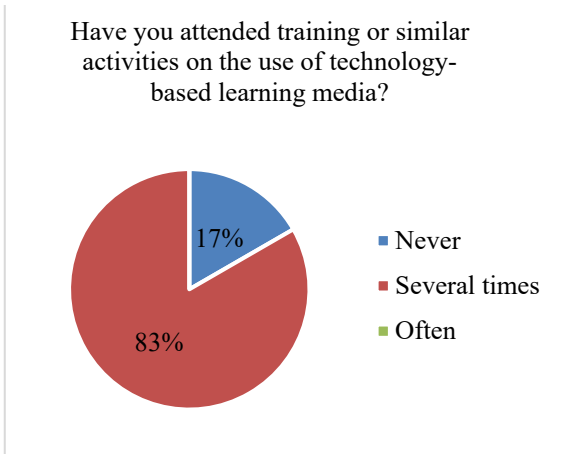


Figure 3: Participate in Training Activities on the Use of Technology-Based Learning Media.

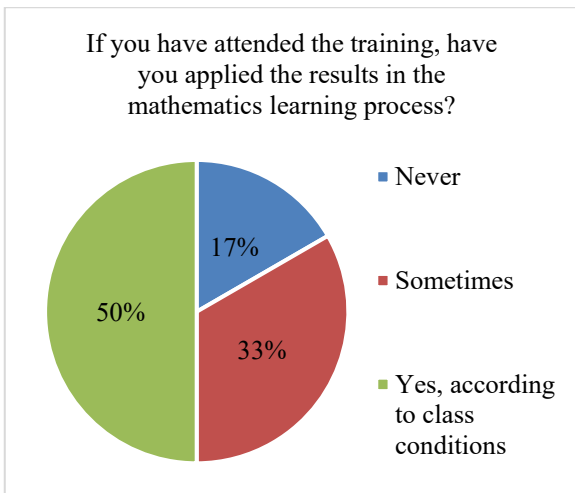


Figure 4: Applying Training Results in Learning Mathematics.

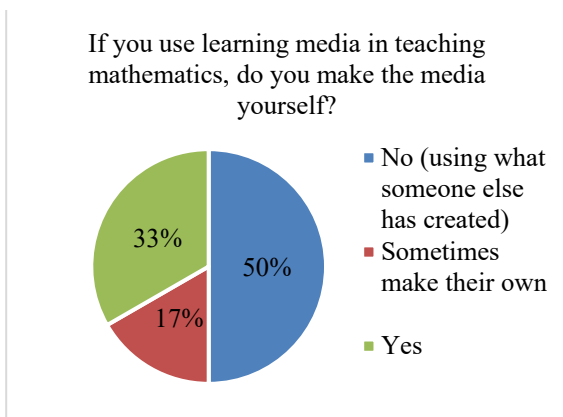


Figure 5: Making Learning Media.

Figure 5 demonstrates that half of the teachers who were observed and interviewed said they used other people's media instead of creating their own. This indicates that, despite their best efforts, teachers do not investigate their capacity to develop technologically based learning medium to overcome the challenges and abstraction of mathematical content in learning. Teachers have tried to use technology-based learning media in learning mathematics even though the media used. Most teachers do not create their own content from learning media independently but instead use templates that have been made by others. This is supported by Figure 6 which shows that teachers are still not fully able to use technology-based learning media in learning. In addition, the inadequate facilities and infrastructure in schools also make it difficult for teachers to be able to apply technology-based learning media to the fullest in mathematics learning.

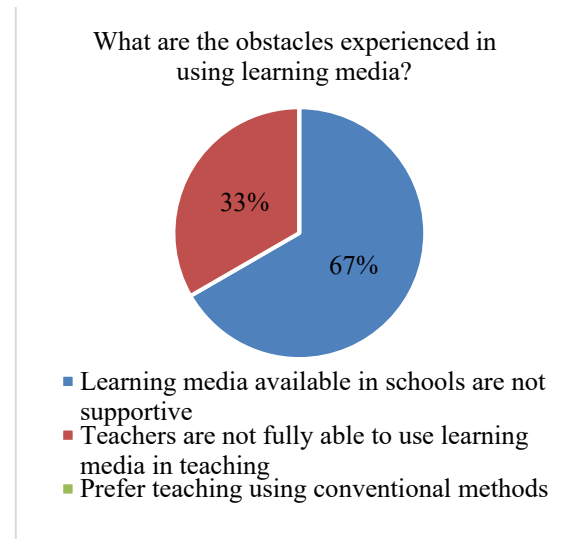


Figure 6: Barriers to Using Technology-Based Learning Media.

The Emancipated Curriculum has differences from the 2013 Curriculum and the Curriculum in Special Circumstances. This can be seen from the basic framework of the formulation of the curriculum. If the 2013 Curriculum and the Curriculum in Special Circumstances have a main foundational design that is the goal of the National Education System and National Education Standards, then in the Emancipated Curriculum the main basic design besides the goals of the National Education System and National Education Standards also aims to develop a profile of Pancasila students in students (Fatmiyati, 2022).

The results of the interviews conducted explained that teachers who have taught for decades (more than 20 years) are still not used to using technology-based learning media, because this is still new and requires carefulness to learn how to use it. The implementation of learning in the implementation of the Emancipated Curriculum is in the form of differentiated learning (Nurcahyono & Putra, 2022). He admitted that he had participated in training activities to create technology-based learning media that could support the explanation of the material being taught. However, because the training activities are carried out only once, so if after the training is finished, the teacher encounters obstacles when applying the knowledge gained, it is the reason he does not use the learning media and chooses to teach as usual. This is in line with previous research that one of the ways for the successful use of technology is to carry out teacher training (Tyler-Wood et al., 2018).

Another acknowledgment came from math teachers with a lower teaching period of 5-10 years. They say that the use of technology-based learning media is very effective and efficient in learning, because this is still a new thing and has not been used to learning, so students feel more interested and curious about the procedures for using these learning media. It's just that their lack of knowledge about various technology-based learning media is the cause of the type of learning media used is still minimal.

The use of PowerPoint in learning is still in the form of briefly presenting material in the form of slides. The math teacher should also be able to insert questions in the form of multiple-choice questions by directly determining the answer choices for these questions. So that when students are allowed to answer, the results of the assessment will appear. Whether the student's answer is correct or not. If it is correct, the student gets a score of 100. However, if it is not correct, the math teacher will direct students to a summary of the material that can help students answer the question. The idea of making technology-based learning media, especially in learning mathematics is widely shared by several content creators on various search engines platforms such as Google and YouTube. However, of course, this is not 100% necessarily causing teachers to be able to make technology-based learning media self-taught, so assistance is needed by experts who better understand ways of making and using technology-based learning media themselves.

Especially for making technology-based learning media, not only talking about the teacher's ability to use the media but also talking about the facilities and infrastructure owned by the school. More than 50%

of mathematics teachers stated that school facilities and infrastructure for tools related to the procurement of technology-based learning media in schools were still inadequate. This means that there is a balance between the teacher's knowledge of how to use and create technology-based learning media and the existence of adequate facilities and infrastructure.

When asked questions about the readiness of teachers to apply the Emancipated Curriculum, the answers obtained indicated that all mathematics teachers felt ready to implement them. This might be considered by the government in order to maximize this readiness by balancing the skills of teachers and facilities and infrastructure in using technology-based learning media in schools.

4 CONCLUSIONS

Based on the research that has been done, the conclusions are obtained:

1. GeoGebra is one of the applications that mathematics teacher has used to teach;
2. not all teachers are literate in utilizing technology to aid students' study of maths;
3. there are not enough resources and infrastructure in place to support the use of technology in math learning.

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Development of A Self-Directed Learning Model in Entrepreneurship Courses to Develop Problem-Solving Ability Among Students

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Keywords: Entrepreneurship, Learning Model, Self-Directed Learning, Problem-Solving.


Abstract: According to preliminary research conducted at Al-Muslim University's Geography Study Program, there are numerous issues with Entrepreneurship education, including the poor development of problem-solving skills in student entrepreneurship courses. Participation in learning activities has not increased due to problem-solving student activities. There are insufficient learning materials, and the paradigms used in education do not enable students to develop their knowledge. Based on these conditions, this type of study is considered Research and Development (R&D). The employed model of development is the Plomp Model (2013). The stages of development are as follows: preliminary/initial research, product design, and assessment/evaluation. The validity and usability of product design are measured via formative evaluation, including self-evaluation and one-on-one. A summative evaluation is conducted at the assessment stage to establish the product's effectiveness. In addition to conversation, observation, interviews, questionnaires, and learning achievement exams, focus group discussions were used to obtain research data (FGD). The gathered information was examined using descriptive and inferential statistics.


1 INTRODUCTION


National Education seeks to explore and develop the potential and skills of students for them to become people who have faith, are devoted to God Almighty, have a noble character, are healthy, knowledgeable, capable of creative, and independent, as well as democratic and responsible citizens. (Ministry of National Education, 2003). In line with the 21st-century educational framework, students must have skills and abilities, namely the ability to communicate well (communicative), be creative (creativity), the ability to work with other parties (collaborative), and have high creativity (BSNP, 2010). The realization of these hopes is manifested in the form of the K22 curriculum or what is known as the Independent Campus Learning Curriculum (MBKM). Freedom to


learn. The independent campus is a government policy to encourage students to master various knowledge that can be useful for entering the world of work.


Learning activities are not material-intensive but essential. Students can take credits outside the study program at other tertiary or higher education institutions in the independent learning program. The aim is to gain experience or new knowledge in developing students' insights. One of the activities outside of higher education is entrepreneurial activities. The competency achievements of independent learning independent campuses in this entrepreneurship course are producing goods and services and formulating policy objectives and strategies in entrepreneurship. It is a critical learning system based on analysis, reasoning, and

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interpretation, not memorization, to achieve the curriculum's and educational goals' expectations. It aims to change the way students think. That is, they always desire to find out and make observations. Students are also directed to formulate problems, not only solve problems. Learners are trained to sharpen their reasoning power by thinking analytically. So the Geography Study Program sets entrepreneurship courses with a weight of 2 credits. The expected learning outcomes are that students can interpret the role of entrepreneurs in the country and apply the skills that an entrepreneur must have to develop entrepreneurial attitudes and profiles that become a true entrepreneur (Indonesian National Qualification-Based Curriculum, 2020).

However, based on searches on Geography study programs, especially fifth semester (V) students in entrepreneurship courses, students attending lectures is still like lecturing pulpit. Students silently listen as if only the lecturer is the only source of learning, so learning is monotonous and boring. Students are only passive. Inactive, unable to think critically. In response to the facts and phenomena above, it is necessary to find learning solutions, namely changing learning models and strategies. One of the learning models considered appropriate is the Self-Directed Learning (SDL) learning model. This learning model is innovative. This SDL mode provides opportunities for students to create and diagnose, formulate learning objectives, select and implement learning strategies, and evaluate learning outcomes (Pluskwik et al., 2018; Ramadhan & Jalinus, 2021; Scroccaro & Rossi, 2021; Silamut & Petsangsri, 2020). As for the syntax or steps of the SDL model, there are three kinds: planning, students planning learning locations, and times when students feel comfortable. Furthermore, students determine the learning components and determine achievement targets. Then the next step is to monitor. Namely, students observe learning so that learning activities will be more meaningful and then carry out evaluations. The Self Directed Learning model ignores religious or religious values in students according to national education goals (Beach, 2017; LaTour & Noel, 2021; Silamut & Petsangsri, 2020). So this model only emphasizes knowledge alone. Religion. The model developed is called Insert Self-Directed Learning (ISDL). This study aims to develop a self-directed learning model that is valid, practical, and effective in the Entrepreneurship course at the teaching and educational faculty of the geography study program.

The philosophical foundation used in the Insert Self Directed Learning (ISDL) Learning model is the educational philosophy that Ki Hajar Dewantara put

forward. This philosophy is a convergence of the philosophy of progressivism regarding the natural ability of students to overcome the problems they face by providing the broadest possible freedom of thought (Wichadee, 2011). Meanwhile, the learning theory used relies on constructivist learning theory, which reveals that knowledge is the result of human constructs, meaning that here students, through their interactions with objects, the environment, phenomena, and experiences, will construct knowledge (Jonassen et al., 1995; Joyce et al., 2015).

Learning is processed and where activities originate or are transformed through training procedures (whether in the laboratory or a natural environment). Good learning embraces learning without boundaries (Joyce et al., 2015; Kurniati et al., 2020; Pateliya, 2013; Szmidi & Majewska-Owczarek, 2020). To embrace diverse students, you have to use a suitable model. The model can be a guideline explaining what the teacher must do to help students achieve learning goals (Schiering et al., 2012). The Learning Model is a framework of reference for learning that is carried out based on patterns that have been systematically designed. So that learning is carried out effectively and efficiently (Mousoulides, 2011).

Learning Model Self Directed Learning (SDL) is a learning process that is carried out based on one's desires and initiative. Essentially, this model is independent learning (Beach, 2017; Deng et al., 2022; Mamun et al., 2020; Ramadhan & Jalinus, 2021). In line with the opinion above, the direct instruction learning model is specifically designed to support student learning related to well-structured declarative and procedural knowledge that can be taught with a gradual pattern of activities step by step. The Self-Directed Learning model will increase students' problem-solving abilities. Problem-solving ability is a thought or ability to find a solution or way out of a problem or problem with very mature and reasonable considerations. (Koh et al., 2010).

2 METHOD

This study involves both research and development (Research and Development). This research has generated a learning model titled Insert Self-Directed Learning (SDL). This learning paradigm enhances students' capacity to solve valid, practical, and efficient problems. The development design employed is Plomp, which comprises many stages: 1) preliminary study, 2) prototype phase, and 3) evaluation stage. (Plomp, 2013). Data analysis was

carried out in a qualitative and quantitative descriptive manner. The test of the model's validity uses experts' opinions (judgment experts). The validators/experts were asked for their opinions about the models and products being developed. The validation developed includes constructing validity and content validity. The practicality test of the model is determined from the results of assessments by observers and practitioners. Practicality regarding the product's ease of use and understanding in learning.

In order to determine the validity and applicability of the results provided by the validator, practitioner, or assessor, an intraclass correlation test was conducted with the SPSS program's Intraclass Correlation Coefficient (ICC). An analysis of the effectiveness of the Insert Self-directed Learning learning model was derived from a problem-solving ability test and a learning achievement test administered to students in entrepreneurship courses. The evaluation uses a rubric that is evaluated from three perspectives: 1) identifying what is known about a problem; 2) formulating the problem, followed by determining the best approach and being able to interpret the problem; and 3) solving the problem analytically and methodically. Exam questions are in essay format. The product's effectiveness was evaluated using a t-test. This study's participants were fifth-semester students in unit C of the geography study program. The trial group was randomly selected from the entire research subject population. This study's participants were fifth-semester students from five classes. They gathered information through observation, interviews, and focus group discussions (FGD).

3 RESULTS AND DISCUSSION

This research was carried out referring to the development of Plomp, which includes: 1) Preliminary research (preliminary research); 2) Prototype Phase (Prototyping phase); 3) Assessment stage (Plomp & Nienke, 2013; Van den Akker, 2006). The results of the study are as follows:

3.1 Preliminary Research

In the needs analysis stage, the importance of the self-directed learning (SDL) model is analyzed in entrepreneurial learning. Needs analysis includes a) problem analysis during learning activities. b) curriculum analysis. The curriculum analysis that is carried out is the application of the curriculum, the scope of material and learning methods, and the goals

and strategies for achieving this are carried out to know the problems in the field. This data is intended as a basis for the development of learning models. Based on preliminary research results, it was found that entrepreneurship learning was carried out in the form of pulpit lectures, and monotonous learning was still rote. No lecturers in the learning process use the self-directed learning model because it takes a long time and disrupts the previously prepared lesson plans. From a curriculum point of view, when viewed from the scope of the material, it is generally in the form of a collection of theories and concepts so that learning cannot make students think analytically. The critical and reasoning power of students is weak. Seen from the lecturers generally do not prepare learning tools properly, such as semester learning plans (RPS) media and other learning resources. At the same time, the analysis of students (students) reveals a feeling of boredom when attending entrepreneurship lectures because learning is monotonous and does not involve students actively in the learning process. A design or learning model is prepared as a book based on searches and information obtained from lecturers, students, and related parties. The self-directed learning model book is designed to contain four parts, namely: first, the rational model contains the critical background and urgency of developing the self-directed learning model; secondly, supporting theories contain learning theories put forward by several experts, the third model component contains philosophical and theoretical foundations model, and the fourth implementation of the problem-based self-directed learning model contains the syntax of the social system and the principle of reaction to instructional impact and accompanying impact. Learning components according to the existing problems

Insert Self Directed Learning learning is based on the results of preliminary research conducted and studies of learning theories and learning models equipped with syntax where the syntax is one part of the learning model that contains references to models in actions or activities that are arranged based on clear stages of the entire activity. Moreover, the stages are carried out by the teacher in learning. The results of these studies can be guidelines for compiling the syntax of the developed model. The syntax of the model is designed to pay attention to how to invite students to be actively involved and feel directly as part of the learning process. The model syntax was developed from the Self-directed Learning model proposed by. Song & Hill as for the syntax of the Insert Self Directed Learning (ISDL) learning model. (1) the activity starts before the students read the

Asmaul husnah together, (2) the lecturer divides the student groups consisting of 3-4 students to make plans about the desired learning components, (4) students carry out learning in a place where preferred. (5) students with their groups carry out the discussion. To identify learning activities (6), further class meetings are held, and the teacher gives feedback and evaluates learning to know how far students have mastered the learning components that have been implemented.

Table 1: Theory Analysis Results in the Development of Investigation-Based Learning Models.

No	Theory, Concept, and Material	Role
1	Model Construct By Joyce & Well (1992, 2000), Personal, Benny A (2011), Rusman(2012), Kemp et al. (1994)	For the preparation of model components (syntax, reaction principles, social systems, model impacts, and model support systems
2	Model development by Chandra 2014 and Pumps (2013)	Guide to model development stages
3	Philosophy of learning (constructivist theory) initiated by Mark Baldwin	The basic concepts of developing knowledge underlie model development and building model syntax
4	theoretical basis Cognitive learning theory- Constructivism Problem-Solving Theory Learning model Self-directed Learning	Santrock (2010), Slavin (2011) Gredler (2011), Suparno (1997) Jonassen (1997), Kapur (2015) Carin (1997) Cindy & hamello David Johnson & Johnson Richard I. Arend (2008)
5	perspective(learning theories: Educational Perspective) by Dale H (2012), Learning and Learning by Dimiyati (2009), E-Learning theory. Hartley [Hartley, 2001and Communications Hovland in Mulyana (2007:68)Darmansyah (2011)	To construct self-directed learning (ISDL), insert model syntax.
6	The cooperative learning model by Robert E. Slavin (2008), active learning by Mel Silberman	For reference comparison of model development

No	Theory, Concept, and Material	Role
	(2002), and CTL by Elaine Jhonson (2010),	
7	Analysis of Approaches, Methods, Strategies, and Learning Models by (Iru & La Ode 2012). Designing Effective Instruction by Kemp et al. (1994) Teaching and Learning Interaction and Motivation by Sardiman (2011) (Russman, 2012).	To devise social systems, reaction principles, and impact models

3.2 Prototype Stage

The development of the self-directed learning model is based on the Self-directed Learning model proposed in the model book consisting of several structures as shown below.

The structure is contained in the model book.

Table 2: Model’s Book Component.

Model Book
Foreword
List of contents
Introduction
Rational Learning Model Self-Directed Learning
Philosophical Foundation and theoretical models
Implementation of models
Model syntax
Social system
Reaction system
Instructional impact
Companion impact
Supporting products
References
Author Profile

3.3 Product Validation

The results of product validation carried out by five experts/validators showed that the insert self-directed learning (SDI) model proved valid, as data processing results showed that the result was > 3.20. The model book's score Intra-class Correlation Coefficient (ICC) amounted to 0.885.

Table 3: Summary of Book Validation Results Insert Self-Directed Learning Model.

No	Assessment Aspect	K	Category
1	Book Construct	0.85	Very valid
2	Rational Model	0.87	Very valid
3	Supporting Theory	0.82	Very valid
4	Model Structure Self-Directed Learning	0.79	Valid
	a. Syntax	0.84	Very valid
	b. Social system	0.87	Very valid
	c. Reaction Principle	0.89	Very valid
	d. Support System	0.89	Very valid
	e. Instructional and Accompaniment Impact	0.87	Very valid
5	Model Implementation in Learning	0.89	Very valid

Source: Processed Primary Data

The model book was valid and could be continued at other stages. However, there were several essential suggestions from the validator for improving the model book, especially the use of grammatical words, letters, and coloring and the structure of the model. Then the next step is product revision in the form of a model book.

3.4 Practicality

3.4.1 Practicality of the Self-Directed Learning Insert Learning Model in the Entrepreneurship Course to Improve Geography Problem-Solving Skills

Al-Muslim University's analysis of implementing the learning model Insert Self-Directed Learning in entrepreneurship courses. Data collected from three observers showed that the average score for all aspects was 4.75. Thus, implementing the learning model Self Directed Learning in entrepreneurship courses to enhance problem-solving skills is conducted in particular categories. The intraclass correlation test for the model implementation yields a value of 0.186. It indicates a slight correlation between assessors in determining the feasibility of the model, i.e., the value of the learning model itself. Experts/validators have provided well-executed Directed Learning in Entrepreneurship courses to enhance problem-solving skills. There is only enough correlation between validators to determine the practicability of the model. Observer observation revealed that using learning models, Self-Directed Learning in Entrepreneurship courses to enhance problem-solving skills, and using teacher books and student books in the learning process conforms to the established criteria in terms of practicality.

3.4.2 Stage Focus Group Discussion (Focus Group Discussion/ FGD)

The results of the Focus Group Discussion included critiques and recommendations from FGD U participants. Participants in the FGD suggested using grammar and spelling consistent with Indonesian spelling. As with student textbooks, the front cover must be revised, but the images used in model textbooks already support the description. The results of this FGD indicate that the problem-based learning model, supported by Facebook, teacher's books, and student books, is reasonable and practicable. The results of product revisions are known as prototype products.



Figure 1: Model Book Cover before and after Revision.

3.4.3 Effectiveness Test

Effectiveness in terms of development, activity, observation sheets, and the development of entrepreneurial problem-solving skills is obtained through learning achievement tests in the form of assessment essays carried out from the learning rubric. Using t-test analysis obtained a significance level of 0.01.

4 CONCLUSIONS

Based on the results of field research regarding the development of the Self-Directed Learning model,

the Insert Self Directed Learning model using the development steps proposed by Plump are as follows.

1. The Insert Self Directed Learning model book, after being validated by experts consisting of discussion experts, material experts, and design experts, is declared valid and suitable for use.
2. Based on the assessment of observers, practitioners, and users, the Self-Directed Learning book states that the model book is convenient because learning is carried out well without any obstacles, and students enjoy the process of learning.
3. When observing the learning activities, learning motivation, and problem-solving abilities, data was obtained on students' problem-solving abilities development, as evidenced by very satisfying learning outcomes.
4. The self-directed learning model was developed and called Insert Self Directed Learning (ISDL) so that lecturers can apply it in entrepreneurship courses because this ISDL learning model has been proven to be valid, practical, and effective in the learning process, and students can use this model and make a reference in subsequent research.

The development of the self-directed learning model has produced a product or Novelty in the form of a valid, practical, and influential Insert Self Directed Learning (ISDL) model book for students in Entrepreneurship courses.

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Improving the Ability to Read Rhythms in Music Learning Through the Application of the Takadimi-ORFF Method in Elementary Schools

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Keywords: Takadimi Orff Method, Rhythm Member Ability, Music Learning.

Abstract: This research is conducted to improve the ability to read musical rhythms by applying the Takadimi-Orff method in elementary schools. The research used literature studies by reviewing several journals. The review results of several journals were analyzed, compared, and described in this study. The results showed that applying the Takadimi-Orff method can improve students' reading skills in elementary school. The application of rhythm learning through the Takadimi-Orff method is carried out in 2 steps; namely, imitation is carried out by imitating rhythms exemplified by teachers and other students. Step two, namely exploration, applied through the notation pattern of takadimi rhythms with hard-soft dynamics and fast, slow tempos and adjusted rhythms to regional music that is often heard. This research is conducted to improve the ability to read musical rhythms by applying the Takadimi-Orff method in elementary schools. The research used literature studies by reviewing several journals. The review results of several journals were analyzed, compared, and described in this study. The results showed that applying the Takadimi-Orff method can improve students' reading skills in elementary school. The application of rhythm learning through the takadimi-Orff method is carried out in 2 steps; namely, imitation is carried out by imitating rhythms exemplified by teachers and other students. Step two, namely exploration, applied through the notation pattern of takadimi rhythms with hard-soft dynamics and fast, slow tempos and adjusted rhythms to the often heard regional music. **Keywords:** Takadimi-orff method, rhythm ability, music learning.

1 INTRODUCTION

Music is a language of emotions that have the nature of universality (Jamalus 1988). In other words, humans can express every emotion with other humans. Human beings are born to have competence towards sound stimulation. Through this hearing, music is understood and perceived the meaning and impression contained in it. Music is a unity that cannot be separated from human life and always follows human existence.

Music has a strong position in the intellectual growth and development of children. Many studies have shown that children who receive regular musical training can demonstrate better motor, math, and reading skills than classmates who don't get musical skills. Oerstein mentioned that music involves two brains: the right brain and the brain. The left brain controls activities of an analytical nature, such as mathematics, logic, and language. At the same time,

the right brain controls more perceptual activities, such as imagination—daydreaming, painting, music, and rhythm. Thus, stimulus in musical training can provide benefits for students to improve intellect in music and function in providing a balance of work of the right and left brains (Budiningsih 2022).

One of the formal educational institution's functions is stimulating the form of music in elementary school. Elementary school is a primary educational institution that develops behavior and skills in the essential knowledge and skills needed by children to survive in society and their readiness to follow the subsequent educational development. Thus, knowledge and efficiency, especially in music, are needed in developing students' skills of the age of interests, talents, and child development. Music learning in elementary schools is categorized into cultural arts and skills (SBK) learning (Harianti 2007). The Ministry of National Education stated that cultural education and skills are given in schools because they have unique characteristics, meanings,

and benefits to the suitability of student development needs, who can receive aesthetic experience in the form of expression and appreciation activities through learning cultural arts.

In the study of the art of music, a certain amount of basic knowledge is learned about music. The knowledge of music requires elementary school students' musical skills, interests, talents, and intellectuality. This knowledge is needed for students to move on to the next level. Students need to gain essential learning that students receive to develop their abilities and skills to the next level. One of the basic musical knowledge that students need is knowledge of rhythm. Rhythm knowledge is an essential thing in playing music. Playing music is the same as playing rhythm. Rhythm gives students an understanding (Rahman 2005) of the short length of the sound and the differentiation of accents in the music. Knowledge of the short length of sound is essential before students are given knowledge of melody and harmony.

One of the methods applied in improving cultural arts learning in the time of music is the takadimi-Orff method. This method is a method that collaborates between the takadimi method and the method. The takadimi method is needed to train students in introducing rhythms that focus on beats in the form of syllables, including ta-ka-di-mi. In contrast, the orff method is music learning that focuses on the child's behavior, such as singing, singing, music, making improvisations, and creative movements. This stage is connected to the stages of the orff method, which is the method of imitation and exploring music by giving students the freedom to be creative. By collaborating, the merger of these two methods can improve the knowledge of rhythm reading required by students in elementary school (Wulandari, 2016).

2 METHOD

The use of the method in this study is a literature study conducting a study on Improving the Ability to Read Rhythms in Music Learning through the Application of the Takadimi-ORFF Method in Elementary Schools. Data collection using methods related to Improving Rhythm Reading Ability in Music Learning through applying the Takadimi-ORFF Method in Elementary Schools. The data was obtained from a review of several journals on Improving the Ability to Read Rhythms in Music Learning by applying the Takadimi-ORFF Method in Elementary Schools. Based on reviewed journals, the literature study in question is to analyze the

Improvement of Rhythm Reading Ability in Music Learning by applying the Takadimi-ORFF Method in Elementary Schools. This literature study is needed to examine improving Rhythm Reading Ability in Music Learning by applying the Takadimi-ORFF Method in Elementary Schools (Sugiono 2016).

3 RESULTS AND DISCUSSION

Here are some explanations about the use of theory in this paper. Music is a work of art in the form of sound that is realized in songs and music (Jamalus 1988). It can express thoughts and feelings through the music element as a unit. Soeharto (1992) stated that music could express ideas and ideas with sounds, with essential elements in the form of melody, rhythm, and harmony, through the help of element ideas, properties, and sounds (Sanaky, 2013). The above opinion concludes that music is the result of Bunti's work in music that can make a person hear it, which is expressed with thoughts and feelings that create through elements of melody, rhythm, and harmony used in music.

The musical elements consist of rhythm, melody, harmony, lyrics, structure, and other elements (Jamalus, 1988). The explanation of this element of music focuses on rhythm. Rhythm is called rhythm. Rhythm is a sequence of motion that is transformed into music and dance (Jamalus, 1988). Rhythm in music is formed based on the combination of several sounds based on time, length-short, rhythm pattern, and rhythmic swing, rhythm is seen, heard, and felt.

Music learning in elementary school is categorized as the subject of cultural arts and skills (SBK). The defense of cultural arts forms pleasant student personalities by focusing on child development that can target personal, interpersonal, visual, musical, linguistic, mathematical logic, naturalist and spiritual and moral, and emotional intelligence (Balitbangdiknas, 2007).

Mamud (Balitbangdiknas, 2007) mentioned that music plays a role in (1) stirring up thoughts and feelings in aspects of intelligence, social, emotional, and psychomotor; (2) fostering the spirit of the human soul; (3) shaping character and morals (Harianti 2007). The purpose of teaching music in elementary schools is to increase skills about the beauty that students have through musical experiences, the ability to express themselves through music, and the ability to provide information about music through intellectuality and artistic relevant to the nation's culture to increase sensitivity to the surrounding community. Music learning in elementary school

differs from the usual acquisition of music education. Music education is not a goal but a tool to achieve goals (Campbell 2002)

The theory of music learning originated from Piaget (1896-1980) on the cognitive development of the human being. Piaget is a developmental psychologist from Switzerland who is interested in developing human cognitive capacity. Piaget categorizes the stages of cognitive development into four (Budiningsih 2022), namely

1. Sensorimotor stage (0-2 years), there is a development of motor activity and simple assumptions in children. The characteristics of development are in the actions and stages, the skills possessed, including (a) being able to see oneself as a being different from other objects; (b) finding stimulation from lights and sounds; (c) being able to provide attention for a long time; (d) be able to find the meaning of den manipulative of it; (e) able to find and change places objek
2. In the preoperative stage (2-7/8 years), there are developmental features characterized by symbols and language that begin with the foundation of intuition. The stages divided into two are preoperative and intuition.
 - (a) During Preoperative (2-4 years), and can develop simple language, and there are errors in understanding the object. It is a unique feature such as (1) self-counter protrusion; (2) the ability to distinguish objects; (3) the ability to collect goods based on their criteria correctly; (4) the ability to sort objects in order.
 - (b) Intuition (age 4-7 or 8 years), the child can gain knowledge according to the impression obtained. Able to make sense of intricate without being expressed through words. Therefore, children can express their hearts symbolically, especially by having experiences. This stage is (1) able to create categories of objects; (2) able to create attachments to a complex; (3) able to make ideas and ideas; (4) able to conceptualize well.
3. Concrete Operational Stage (age 7 or 8-11 or 12 years: the specific development characteristics in this section appear in the child's ability to have a good mindset, draw conclusions, and develop hypotheses. Children can think by (a) collaborating; (b) incorporating the analysis; (c) having the ability to think proportionately; (d) being able

to make basic generalizations about a type of content.

In general, children at the age of elementary school in Indonesia are aged 7 to 12 years. Piaget's theory concludes that elementary school students belong to the concrete operational classification. Piaget's follower was Bruner, who developed the theory of the development of cognitive function. Bruner focuses on the impact of culture on individual attitudes, known as free discovery learning. Bruner mentioned that the learning process could be carried out if the teacher provides opportunities for students to find solutions from a foundation, theory, rule, or example in life. Piaget suggests that cognitive development impacts individual language development (Budiningsih 2022). According to Bruner, cognitive development goes through three stages based on circumstances, namely, enactive, iconic, and symbolic.

1. Interactive stage: a person performs activities in seeking and understanding his surroundings. In other words, to understand its surroundings using motor knowledge, such as bites, touches, handles, and others.
2. In the iconic stage, a person is understood as an object or other through images and verbal visualizations. In this case, the anal understands the surroundings the child learns through the formation of parables and comparison.
3. The symbolic stage is when the child can have ideas, and ideas impact the student's ability to express them through language. Children learn through the use of symbols, language, and others. Interacting is implemented with the use of symbols. The maturity of thinking is evident in the use of its symbol system. That way, it doesn't mean the system is enactive and iconic. The use of media in learning activities is part of what is needed in the infective and iconic system in the learning process, eroding Takadimi-Orff.

The takadimi-Orf method is the takadimi method and the orff method. The takadimi method can introduce students to a rhythm complete with syllables and beats. The Orff method is music learning that focuses on the child's attitude in singing, singing, music, and performing creative movements. Collaboration of the takadimi method consists of syllables, beats, elements of imitation, and exploration (Putra, Ferdian, and Hidayat 2021). This concrete method can internalize sounds through

hearing and rhythm concretely through syllables with vision. In addition, this method can help teachers in providing rhythmic material to their students (Amelia 2021). The takadimi-orff material includes simple rhythmic patterns by empowering syllables obtained from takadimi. Then, Simple notation patterns are relevant to elementary school students' proficiency. The collaboration of these two methods can improve elementary school students' rhythmic reading power (Rahman, 2015).

The research results from several journals state that the first stage of applying the takadimi-orff method is imitation (Hakim, Supriatna, and Sutanto 2022). The imitation stage imitates the rhythm given by the teacher, starting from the easy to the difficult. In addition, this stage is applied by imitating the student's rhythm (Wulandari 2016). The next stage is an exploration applied through the notation pattern of takadimi rhythms with loud and debit and fast and slow tempos using used bottles. Notes are made by making loud sounds denoted by forte and soft denoted by piano—students who play with rhythmic notation into folk songs often heard by students. The orff method is applied to folk songs often heard by the child through a percussion device to train the child's rhythm (Campbell 2002). Learning musical rhythms is carried out with the features of syllables and beats obtained from the takadimi method (Suwece and Kusuma 2021).

Other studies state that the takadimi method can reveal a complete rhythm in the form of syllables. Students perform rhythmic pronunciation as a concrete form and pronunciation in hearing and sight. In its application, students play musical instruments when they see the rhythm of the music (Gustina 2019). This method is based on hearing beats derived from sound through translation and oral description. Applying the takadimi-orff method with Bruner's theory states that the cognitive stage uses enactive, iconic, and symbolic stages. Rhythm learning begins with the movement of the hands and body by visualizing the shape of the rhythm pattern (inactive), then exemplified by images in the form of rhythm notation exemplified, ending with the reading and writing of notation in musical time notation.

Rahman (2005) states that applying the takadimi-orff method provides enthusiasm and encouragement for students to play music by using used bottles in the imitation and exploration stage. Another opinion Sanky mentioned is that LCD and power points have a unit presentation technology that can relieve student boredom by combining audiovisuals with colors, animations, sounds, and other files (Sanaky 2013). At this exploration stage, students are free to sing and

narrate. It can stimulate hearing and vision through the rhythmic notation of takadimi and the song's tempo. However, an obstacle in applying the takadimi-orff method is the inefficiency of group formation. It is due to the discomfort of psychological closeness between students with each other. Ian's obstacle is in the form of a rhyme pattern that is difficult for students to understand, such as TAKADIMI TA. DIMI TAKADA, then in the form of TAKA0M, TA0DIMI, and TA00MI.

4 CONCLUSIONS

The results showed that applying the takadimi-orff method can improve the ability to read elementary school rhythms in music learning. Learning musical rhythms through the takadimi orff method is applied with two stages: imitation and exploration. This imitation stage is given to students to create an imitation of the rhythm the teacher gives to the students. The exploration stage is carried out by applying the takadimi-orff time notation pattern. Both of these stages can be done well, but there are obstacles found, are the formation of groups in the classroom and difficulties in understanding specific rhythm patterns such as TA 0 IN MI, TA KA 0 MI, and TA 00 MI.

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The Contribution of Civil Engineering English Course Material Toward Student Learning Outcomes at the University Level

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Keywords: Contribution, Teaching Materials, Student Learning Outcomes.

Abstract: This study aims to update the teaching materials needed by the industrial world for civil engineering graduates so that civil engineering graduates can succeed in entering the industrial world, such as well-known companies. This research is a research contribution, and the sample is 25 people. The data collection technique was taken in the form of student documentation. The data analysis technique is used by collecting primary data from questionnaires and student interviews, and secondary data collection is taken from students' mid-semester exams. The data collection results from questionnaires and interviews with these students show that the lecturers of this course must update three teaching materials. Those three teaching materials are the terms in the field of English, Occupational Health and Safety (K3).

1 INTRODUCTION

Teaching English in other departments within the University is included in the curriculum. It is helpful for alums who have graduated from this department to be accepted in the industrial world. It is also possible for civil engineering majors. It is hoped that the lessons taught by the lecturers in charge of this course must follow the demands of the industrial world. One of the approaches taught in this course is the English application approach which we know as English Specific Purposes (ESP). We can see this from the quote by Tom Hutchinson and Waters in my dissertation excerpt (1987), namely that ESP materials do not only emphasize vocabulary, grammar, or certain forms of language teaching. However, ESP materials also focus on what students need in the world of work in the future. So that it impacts the purpose of ESP itself is to equip students or students with relevant English skills that can support their professional careers.

Education, especially ESP, is crucial in specific learning at the lecture level (Rofii & Franscy, 2018). One of them is addressed to the Department of Engineering. ESP has a kind of approach needed in development to prepare students for abilities that

will be needed in the world of work later. For example, in the field of reading, where students must understand English texts or readings that are appropriate to their field, then in the field of speaking and listening, where students must be able to speak in public in English according to their field, so, they understand what is being said. They are instructed in an English procedural text.

From the explanation above, it can be concluded that exceptional English learning (ESP) is essential to be taught nowadays. It is reinforced by research that has been conducted by Musikhin (2016), which states that the importance of unique English learning or ESP for scientists and engineers starts from an analysis of their needs to carry out a specific search for suitable, reliable learning materials, how to define appropriate teaching methods, the software, and approaches used in the educational process are developed to develop the necessary language skills to contribute around the world actively.

From the results of interviews with lecturers and students and heads of departments within the engineering faculty at several universities in the city of Padang, West Sumatra, both private and state universities. The reasons are, firstly, the lack of reference materials for learning materials for both students and lecturers. The books lecturers use for

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their students are not sold commercially in bookstores in Padang. Second, lecturers have made teaching materials, but the teaching materials they have made are still in the form of hand-outs adapted from several sources, which are then adapted to the existing curriculum in the department. The material that the lecturer has designed is included in E-learning.

In the explanation above, Kusumawati also explained the same thing (2018). He explained that the needs of non-English study program students for ESP English courses were very diverse, so it could be concluded that they needed English not only for their current needs, such as reading English literature but also for future work purposes.

The third problem encountered in ECE learning is activities in the classroom that do not provide enough opportunities for students or students to actively participate in the learning process. It is because most of the activities are designed for face-to-face meetings only. Meanwhile, the effective allocation of time in ECE learning is minimal. As a result, the learning process cannot provide more opportunities for all students or students who experience the skills being taught and do not understand the material and practice well. In addition, additional in-class activities provided in the LMS where students can access and learn privately or in groups outside the classroom also do not fully accommodate student or student activities.

Apart from the three problems above, there is one more significant problem, namely learning English specifically (ESP) in general has problems regarding time allocation. Meanwhile, many learning materials are placed in e-learning, so they do not get many demands from the industrial world. Therefore, three examples of material will be designed from the interview results above English technical terms, object descriptions, and occupational health and safety (K3).

2 METHOD

Based on the previously described problems, the research type used is correlational research. This study aims to find out how much the contribution of English learning materials in civil engineering majors is to student learning outcomes in the university environment. This research was conducted in the civil engineering department at several universities in Padang. The sample in this study was 25 civil students. The data collection technique that the researcher used was documentation. Meanwhile, in the data analysis technique, the researcher used two

ways: the first analysis using primary data with analysis techniques in the form of interviews and questionnaires.

3 DISCUSSIONS

Learning English in countries that use English as a second language or as a foreign language, such as Indonesia, categorizes teaching English for adult levels into two different groups, namely English for General Purposes (EGP) and English for Specific Purposes (ESP), Liu et al. al (2011) provides the same perception as what is explained by Hutchinson and Waters (1987) that the most crucial goal of EGP learning is to encourage students to feel interested and accustomed to learning English in order to improve general language competence and to improve students' language skills. Accurately and correctly related to daily communication activities. Whereas Lee (2016) said that "ESP learning is not much different from EGP learning except in terms of learning content, ESP can also be used in learning all types of English" (Lee, 2016, p.97). The most fundamental difference is between the learner and the learning itself (Rahman, 2015). Furthermore, Rahman said ESP learners are generally adult learners with experience learning English (EGP). However, they want to go further to learn English to be able to communicate their professional skills and also to be able to carry out various activities. They are related to their profession. In this regard, they need language skills for more specific purposes, for example, English for students, financial managers, nurses, lawyers, hotel receptionists, doctors, engineers, etc. The ESP learning approach can answer this need because of one of the characteristics of ESP, as described in detail by Dudley-Evan and Johns and cited by Rahman (2015), that, firstly, ESP consists of English language instruction designed to meet the specific needs of learners. Both ESP uses methodologies and learning activities that must follow the learner's discipline/profession. Third, ESP is centered on language (grammar, vocabulary, and register), skills, specific genres, and following activities in the learning discipline or profession.

Robinson (1991) agreed from the start to include criteria for the needs of learner participants in defining ESP. He defines that the essence of teaching ESP is based on analyzing the learner's needs, "which aims to determine as clearly as possible what the learner has to do through the medium of English" (Robinson, 1991). Many ESP definitions have been given, each dealing with many aspects of language

learning. However, most of the definitions are always related to the needs of learners in learning a language. Because according to Hutchinson et al., "ESP is a language teaching approach in which all decisions regarding content and methods are based on students' reasons for learning" (Hutchinson and Waters 1987). In line with that, ESP-based learning must be developed based on an analysis of learner needs, such as an example of learning English for civil engineering, namely learning English aimed at civil engineering students where the content and learning methods are based on an analysis of the English language needs of civil engineering students with the aim that later be able to communicate using English related to their field of study and work in the field of civil engineering correctly and correctly.

The results of the identification obtained with a survey conducted on graduates and users (users) of The Civil Engineering major is material related to the use of communication in the world of work, among others that: Material, Safety rules, Safety equipment, Identifying tools, and instruments, Identifying materials and containers, Numbers and Math symbols, Shapes and properties of materials, Structure, and composition of objects, Functions, and abilities, Actions in sequence, and job search skills.

From the material obtained from the results survey and the highest requirement is job material search skills, namely material that discuss the inner stages of looking for work, including: Analyzing Job Vacancies Advertisement (analyzing job advertisements), Writing a letter of application (writing a cover letter) and Job Interview Preparation (preparation for a job interview) in language English.

The second level requirement is Function and ability material. This material discusses how to describe the functions of tools or instruments commonly used in civil engineering, such as Hammers, files, spades, hacksaws, and instruments commonly used in laboratories or workshops, such as CBR machines, cutting machines, and so on, by using passive forms in sentences that are made.

The third level of language needs is Identifying materials and containers and the Structure and composition of objects. These two materials have the same percentage of needs. The material discussed on the topic of Identifying materials and containers is how to describe materials and various forms of containers that are commonly found in the field of civil engineering. Meanwhile, the material on the Structure and composition of objects discusses how to describe the structure and composition of buildings, usually using sentence forms with active verbs.

The fourth rank of language needs is Safety rules, Safety equipment, and Shapes and properties of

materials. On the topic of Safety rules and Safety equipment, it is discussed how to get to know the tools and rules used for safety in the field or at work. On the topic of Shapes and properties of materials, it is discussed how to describe the forms and properties of building materials used in buildings, highways, and bridges.

In this case, the language skills are English that graduates from the highest Civil Engineering department need to be mastered: skills in reading work instructions and work drawings/schedules. The second skill is Skills in understanding presentations and Skills in oral communication. It is crucial. It is needed because graduates who have held senior supervisor or project manager positions/positions must be able to make presentations in English due to projects in their companies working with IDB or project funders from foreign countries.

The following skills needed in the third rank are reading cost estimates, reading the text of work contracts, and understanding work instructions orally. Furthermore, the skills required at rank 4 (four) are Skills in making cost estimates in English. Skills in making cost estimates in English so far have not been given because this course has only been acquired by the Department of Civil Engineering students, even though English courses are in semesters two and three.

As for the skills to write work instructions and the skills to make drawings/work schedules are ranked fifth. These skills are not drawing but making terms used in working drawings in English while making work instructions, in this case, instructions on products made by the construction company. The skill with the lowest demand is writing memos in English. The following is a tabulation of skills required by graduates.

From the ranking of the needs, the four language skills that graduates prioritize are: speaking, listening, reading, and the last is writing.

It follows the purpose of giving English courses at the Semarang State Polytechnic Department of Civil Engineering, namely so that students get the provision of communication skills in English so they can compete and compete with graduates from other tertiary institutions or Polytechnics and are ready to go to International Polytechnics.

4 CONCLUSIONS

From the results of the exposure previously described, it can be concluded that, nowadays, ESP is significant in the world of specific learning at the lecture level. One of them is addressed to the Department of Engineering. ESP has a kind of

approach needed in development to prepare students for abilities that will be needed in the world of work later. For example, in the field of reading, where students must understand English texts or readings that are appropriate to their field, then in the field of speaking and listening, where students must be able to speak in public in English according to their field, so, they understand what is being said. They are instructed in an English procedural text.

In addition, the material for learning English should be adapted to the demands of the industrial world. Examples of the material urgently needed by the industrial world terms in engineering English learning, Occupational Health and Safety (K3), and object descriptions. These three materials are needed by the industrial world today, which the authors will develop from existing materials.

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Conceptualization of Islamic Science Songs for Raudatul Athfal (RA) Schools

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Abstract: This research focuses on the position of science subjects and producing an effective concept of Islamic singing as a science learning medium. The study was conducted in two locations: RA NurulHidayah, Jambi City, and TKIT TabkiMarhamah, South Solok. The method used in this research is qualitative with a grounded approach. The data was obtained from interviews, observations, and documentation involving the teachers of both schools. The results of the research reveal that there are characteristics of Islamic science songs that can be used as a reference for the formulation of composing songs for children at school.


1 INTRODUCTION


The coronavirus disease in 2019 which is also known as Covid-19 has changed many things in human life, including in educational institutions around the world. The learning system has turned into something new compared to the usual conventional system before (Hartono & Akhyar, 2021; Rosidi & Rosidi, 2020; Steed & Leech, 2021). Science learning at many levels gives the impression that it is quite difficult, instead of calling it scary. Students commonly feel this, and of course, this must be a concern by teachers or educators to apply science learning concepts or strategies that are easier and more fun. Awang (2015) explains that several factors influence students' difficulty absorbing Natural Science (IPA) subjects. The first is internal factors such as lack of interest, motivation, poor self-confidence, rebellious learning attitudes, and students' expectations of less interesting


subjects. The second is external factors, namely the many foreign terms used in science or science learning and memorization methods that are not appropriate and fun, especially for children.


Seeing the above obstacles, especially in the part of memorizing foreign terms that are considered quite burdensome for children, a kind of learning strategy with media is needed that can make it easier for students to remember science terms that are generally regarded as difficult, one of which is through the medium of songs or singing activities. The learning method by singing from a psychological aspect is one of the learning methods that is considered quite fun and effective so that students do not feel heavy to memorize and understand the learning material (Febriyona et al., 2019).


As is commonly known, the learning burden faced when learning things related to science, such as math and science, is memorization. Because exact

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science is a science of memorization and logic, these two domains are psychologically not pleasant for some students, especially those who are new to terms that are rarely heard (Awang, 2015). A song or chant is a unit that consists of several elements, such as tone/intonation, voice, words, and gestures.

A form of verbal and non-verbal communication that is packaged by touching the psychological and physical side is done in a fun way (Miranti et al., 2015). It is even considered a more effective means than story-telling to remember learning (Sihombing, 2015; Crowther, 2012; Governor et al., 2013). The capacity of music, songs, or chants considerably impacts many levels as a learning method.

There are at least 5 benefits of music as a learning tool, including improving the ability to remember-enhancement recall; reducing learning stress-reduction of stress; touching many aspects of the delivery method-multi-modality delivery; increasing the sense of joy-increased enjoyment; and more specific content study-in-depth exploration of content (Crowther, 2012).

Music or singing seems to be a good suggestion to deliver science subject content that is generally considered difficult to remember or understand. In their article, Governor et al. (2013) mentioned that the song approach that touches the sociocultural realm helps develop potential because there is a sense of comfort when learning, especially in student relationships.

This is certainly due to the formation of comfortable, conducive, and pleasant emotional relationships between all individuals, both for teachers and students or relationships between students and one another. There are 2 focuses of study in this research.

First, what is the position of science subjects in RaudatulAthfal (RA) NurulHidayah Jambi City and TKIT TabkiMarhamah, South Solok? And how is Islamic singing appropriate for science learning in RaudatulAthfal (RA) NurulHidayah Jambi City and TKIT TabkiMarhamah, South Solok?

2 METHODOLOGY

Following the research theme, researchers will conduct qualitative research with a grounded approach. Following the character of the approach, grounded focuses on the study of processes, actions, and interactions.

This approach is the development of a phenomenological approach in which the researcher will understand how the object of research

experiences and understands something. This approach aims to find and develop a new concept or theory from observations or trials to the object of research based on the results of processes, actions, or interactions that occur according to existing reality (Creswell, 2007). Therefore this research will certainly attempt to reveal how the introduction and learning of science are taught through the media of singing or songs with Islamic nuances.

The initial procedure carried out in this study is to determine the location of RA schools and Madrasahs that will be used as places or objects of research, namely two schools in two different areas.

The first is a school in YayasanNurulHidayah Jambi City, Jambi Province, and TKIT TabkiMarhamah, located in MuaraLabuh, South Solok Regency, West Sumatra Province. The next step is to recognize the proposition of appropriate science material and follow the needs of RA and Madrasah students.

The last stage is to create a concept of science and nuanced Islamic songs tailored to the needs. Because according to Corbin and Strauss in Edmonds & Thomas (2017), a well-grounded theory is: (a) follows the phenomena seen; (b) provides understanding; (c) can be generalized into several contexts; (d) as a research control. As open coding, the research will focus on categorizing the selected research objects, starting from determining the theme of science learning, learning class, age of students, and teaching ability.

Furthermore, words/tone language/songs are formulated to be used in the selected categories. At the axial coding stage, namely determining and adjusting these categories included in the main category, in this case, the diction and tone selection activities are adapted to the needs of students who receive lessons. Furthermore, the last stage of selective coding is making and applying songs in the classroom.

At this level, the songs or science songs that are made should be used and involved in the school in teaching and learning activities. Outside the classroom, at this stage, the researcher can technically see how far the application of Islamic songs/songs is carried out in the school and formulate a hypothesis or a concept proposition for the acceptance of Islamic songs/songs by students as the object of research.

3 RESEARCH RESULTS AND DISCUSSION

3.1 Theme Implementation Through Art Class

The learning process carried out at RA Nurul Hidayah, Jambi City, and TKIT Tabki Marhamah, South Solok implements one primary curriculum as the basis for guiding the implementation of learning in schools at the early childhood learning level, which is generally referred to as Early Childhood Education (PAUD) or Kindergarten (TK) (Ilise et al., 2022). When referring to the applicable rules or guidelines for organizing early childhood education, both educational institutions, both RA and TKIT, have learning schemes that tend to be relatively the same, such as the age range and learning period, the division of the 0 (zero) Big and 0 (zero) Small Kindergarten learning age groups which are now better known as TK A and TK B, to the application of the 2013 Curriculum which is designed thematically (Kemendikbud, 2015). The actualization of the thematic concept of Curriculum 2013 is manifested in a learning class format called the Center Class. The educational institutions in this study, both RA Nurul Hidayah, Jambi City, and TKIT Tabki Marhamah, designed the center class according to the needs in their respective places without changing or disturbing the substance of the content of the thematic concept in the curriculum itself, the concept of the center class was also directly adopted as part of the learning implementation mechanism by the Ministry of National Education of the Republic of Indonesia since 2004 (Erdiyanti et al., 2019).



Figure 1: RA NH Theme and Sub Theme.

Regarding the concept of classroom management with a centered approach, between RA Nurul Hidayah, Jambi City, and TKIT Tabki Mar-Hamah, South Solok, each has a slight difference in the

management of the division of center classes. RA Nurul Hidayah, Jambi City, whose nomenclature is under the Ministry of Religious Affairs (Kemenag) (2019) of the Republic of Indonesia, has 6 center classes with divisions: Class B.1 is called the Nature Center; Class B.2 is called the Block Center; Class B.3 is called the Preparation Center; Class B.4 is called the Art Center; Class B.5 is called the Role Center, and Class B.6 is called the Imtaq Center. While TKIT Tabki Marhamah, South Solok only has 5 class centers, including Preparation Center; Design and Build Center; Imtaq Center; Natural Materials Center; and Art Center.

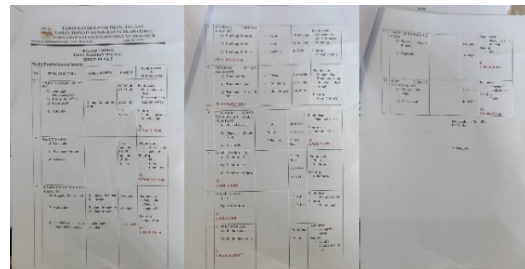


Figure 2: TKIT TM Theme and Subtheme.

The configuration of the center class implemented by RA Nurul Hidayah, Jambi City, is felt to be more systematic and clear because the center class in this school has been determined in its respective position without any plans for periodic changes. Slightly different from the configuration of the center class at TKIT Tab-ki Marhamah, South Solok. In this school, the position of the center class will be updated periodically or every year. Indeed, the division of the center class itself can be adjusted to the specific needs and existing school policies, including the number of students, facilities, and school accommodations in each region (Yusuf et al., 2018; Erdiyanti et al., 2019). However, the center approach was considered the most effective learning model to be implemented for both schools based on the need and popularity of use.



Figure 3: RA NH Center Classroom Atmosphere.

Educational institutions in this kind of PAUD unit have several learning approach models and classroom management choices, such as a corner, area, center, and group model. Each model has its characteristics (Yusuf et al., 2018). Through the center class approach with their respective styles, both educational institutions are still guided by the emphasis on learning to play while learning because the concept of the center model provides opportunities for play activities that are quite dominant. RA NurulHidayah, Jambi City, and TKIT TabkiMarhamah, South Solok automatically adjust to the technical instructions for managing the center class contained in the Early Childhood Education Classroom Management Guidelines document published by the Ministry of Education and Culture (Yusuf et al., 2018). Following the guidelines, overall, the center classes that can be organized include Sentra Balok; Small Role Play Center; Big Role Play Center; Imtaq Center; Art Center; Preparation Center; Natural Materials Center; and Cooking Center. Based on the perspective of this center model, children's creativity is raised with the support of learning aids provided by the school or brought by the teachers themselves. Every teacher in both institutions is also generally equipped with an understanding of all center materials inclusively. If the moving system is implemented, teachers are ready to be assistants or teachers of whatever center class is appointed.



Figure 4: TKIT TM Centre Classroom Atmosphere.

The integration of learning in these two institutions also runs very well. TKIT Tabki Marhamah, South Solok, concerning the integration of science and religious learning, adopts the JSIT curriculum as a guideline for implementing learning with Islamic content because schools under the auspices of the Ministry of Education and Culture have a limited curriculum to cover Islamic material. The JSIT curriculum itself is still based on the curriculum guidelines formulated by the Ministry of Education and Culture as stated in Permendikbud

Number 146 of 2014 concerning 2013 Kindergarten Curriculum Competencies, but in this curriculum, various developments were made by strengthening aspects of Islamic values as the basis of education (JSIT, 2019; Raafi, 2018). TKIT TabkiMarhamah, South Solok, complements the lack of Islamic learning aspects through the curriculum developed by JSIT to strengthen the nuances of integrated religious and general/science learning more comprehensively.

3.2 Thematic Science Learning Process

Following the implementation based on the 2013 Curriculum guidelines related to the thematic learning model, learning that has the least dominant and most comprehensive science content is in the Nature Center Class or Class B.1 at RA NurulHidayah, Jambi City and the Natural Materials Center Class if at TKIT TabkiMarhamah, South Solok. However, each teacher must master each theme, and each educational institution determines a sub-theme. Providing learning areas to each teacher aims to make teaching and learning more efficient. With this kind of strategy, it is hoped that students will not only get from one source of knowledge but also get learning experiences from other teachers' perspectives.

Before the Covid-19 pandemic broke out around the world, especially in Indonesia, RA NurulHidayah, Jambi City, carried out the learning process in the center class dynamically, wherein each teacher or class teacher consisting of two people for each center class changed or moved classes regularly every week. However, during the Covid-19 pandemic, RA NurulHidayah, Jambi City, adjusted its learning process to comply with government instructions that impose restrictions and reduce social mobility by no longer moving teachers and students in the learning process of the center class itself.

The design of the 2013 PAUD Curriculum provides space for each institution to formulate its theme and sub-theme material given to students following the principles of theme selection that have been outlined in the guidelines for developing learning themes at the PAUD level, including proximity, simplicity; attractiveness; carrying capacity; and incidental, while also considering environmental conditions, as well as the availability of facilities and infrastructure at each institution itself (Mustofa et al., 2018; Kemenag, 2019). Following learning procedures with the concept of playing while learning, both institutions provide students with a comprehensive understanding of science through experience and information

obtained by the five senses (Nijs & Bremmer, 2019), (Steed & Leech, 2021) including the sense of seeing, the purpose of feeling, the importance of smell, the sense of hearing, and the sense of speaking. Related to this, the themes and subthemes designed by the two schools generally have the same material content but with different emphases.

RA Nurul Hidayah, Jambi City, formulates 5 themes that have science-nuanced material content, ranging from themes about oneself; animals; plants; water, air, and fire; and nature semester with the description of the subthemes as follows:

1. Self

- Self Identity: Name, Gender, Age, Name of Father and Mother, Address;
- Body Members: Head, Hands, Feet;
- Body Features: Skin Color, Hair Type, Body Shape;
- Favorites: Food, Colors, Games, Activities;
- Functions of Sensory Organs;
- Types of Taste;
- Types of Touch: Rough, Smooth, Sharp, Hot, Cold;
- Varieties of Smell: Fragrant, Fishy, Powdery;
- Varieties of Sound: Loud, Soft, Loud, Shrill;
- Kinds of Sight: Clear, Blurry, Near and Far, Dark Glare, Bright.

2. Animals

- Types of Animals: Pet Animals, Farm Animals, Wild Animals, Insects, Birds, Fish;
- Animal Food;
- Where Animals Live: In water, in the air, on the ground, in a cage;
- Animal Breeding;
- The danger of Animals;
- Characteristics of Animals;
- Uses of Animals.

3. Plants

- Types of Plants;
- Functions of Plants;
- How to Plant Plants;
- How to maintain plants;
- Plant Parts.

4. Water, Air, and Fire

- Uses/Benefits of Water;
- Dangers of Water
- Origin of Water;
- Properties of Water: Clear, Turbid, Colorless, Odorless;
- Uses of Water;
- Wind;
- Sources of Fire: Sun, Coal, Wood, Matches, Electricity;
- Colors of Fire;
- Properties of Fire;

- Hazards;
- Charcoal.

5. The Universe

- Uses of the Sun, Moon, Stars, Sky, Earth;
- Who Created the Sun, Moon, Stars, Sky, and Earth;
- When they can be seen;
- Types of Natural Symptoms: Day, Night, Rain, Floods, Mountains, Earthquakes, Landslides, Whirlwinds, Lightning, Waves, Rainbows;
- Causes of Natural Symptoms;
- Maintenance of the Environment to Avoid Adverse Natural Symptoms.

TKIT Tabki Marhamah, South Solok, designs themes and sub-themes similar to RA Nurul Hidayah, Jambi City. However, in the thematic learning design owned by TKIT Tabki Marhamah, South Solok, there is a difference in emphasis on themes related to humans created by God or knowing oneself because this theme is not spelled out aspects of science-laden material in it. The following is a description of the themes and subthemes designed by TKIT Tabki Marhamah, South Solok:

1. Animals Created by Allah SWT

- Animals on Land;
- Animals in the Water;
- Animals in the Air.

2. Plants Created by Allah SWT

- Fruit Plants;
- Vegetable Plants.
- Ornamental & Medicinal Plants;

3. Water, Fire, Air

- Water;
- Fire & Air.

4. The Universe of God's Creation

- Heavenly Bodies;
- Natural Symptoms.

The difference in the design of these two schools is not too significant because when viewed in terms of the implementation of science learning, these two institutions tend to be balanced. This thematic learning system has an important role as a guide for learning in the classroom. Without being guided by a clear governance reference and technical guidelines, this institution will lose its direction, especially in achieving students' competency standards.

3.3 Concept of Islamic Singing RA NurulHidayah, Jambi City & TKIT TabkiMarhamah, South Solok

What needs to be understood about the concept of learning at the PAUD and TK levels is the concept of

playing while learning, an important emphasis of the teaching and learning system at this level. Learning methods with songs provide a comfortable atmosphere, and learners get a fun experience when acquiring, processing, analyzing, and concluding learning information (Aulia et al., 2022; Priyanto, 2013). Especially for learning science nuances that tend to be difficult to understand at any level (Rosyada et al., 2021). This science learning method has been formulated into a children's learning method outlined in various curricula and PAUD technical guidelines that apply.

Singing is an art that is utilized as a learning medium, making it easier for both institutions to provide material according to the age of the students. RA NurulHidayah, Jambi City, and TKIT TabkiMarhamah make the singing method a form of reinforcement, enrichment, and relaxation of daily learning. Regarding the application of Islamic science songs carried out in each of these institutions, there are several different emphases in terms of the material or lyrics in the songs. In this case, RA Nurul Hidayah, Jambi City, does not have specific songs that substantially discuss science, but the approach is more to the nuances of Islamic material. On the other hand, TKIT TabkiMarhamah has a clearer collection of Islamic science songs in terms of material or lyrics. However, the application of songs in both institutions can be carried out effectively and efficiently every day.

Based on the results of the analysis conducted on the documentation of song lyrics in both institutions, it can be understood that several patterns or characteristics of songs are often applied in these two institutions. These patterns or factors include Thematic-Based Chants; Popularity-Based Chants; Proximity-Based Chants; Joyful Tone-Based Chants; Concise Lyric Chants; and Evocation-Based Chants.

a. Thematic-Based Chant

The concept of thematic singing is a form of song or chant designed according to its theme, role, or function. It is a song or chant designed according to the target or object of the chant, what and who it is for. The term of theme refers to the idea that contains the main content or content of a song lyric. The song's strength will depend on how the words and sentences have meaning following the target or object of the song itself (Hooper, 2022; McDoneI, 2015). The construction or concept of a song made with a thematic approach will certainly make it easier for the teacher as a songwriter to determine the main content in a song, especially lyrical material as the strength of the learning material contained in the song being

made. Singing that is conceptualized and applied in accordance with the right material content ultimately creates a fast, effective, and efficient experience for achieving learning targets for students (Wadiyo et al., 2021). This is because the framework of Islamic singing is added with scientific content, if it is not conceptualized with a clear framework it will tend to make the lyrics or song material too broad. Therefore, thematic guidelines are needed as the main framework so that in the end the content presentation in a song is more on target.

b. Popularity-Based Chant

Populist refers to the adjective form of the word popular or famous or known by many people. Children's songs generally have a popular tone or, in a simple sense, have a style and lyrics that are easy to remember or easy listening, in case. Because if a children's song cannot reach the musical hook, it is too segmented to be digested by students as a learning method (Burns, 1987; Steinbrecher, 2021), especially science material. Children's songs generally adopt songs that have been popular before, although there are some children's songs that are created with their tones. The design or conception of a song that tends to be familiar or often heard by children, of course, becomes something that the students themselves tend to like (Soley, 2019). Through a popular singing concept design approach, it is easier for the teacher to re-design a song that contains a pre-existing song framework. Of course, adjusting to the nuances of the song which relates to combining Islamic and science learning materials.

c. Proximity-Based Chant

The design or main idea of a children's song must also have a meaning close to the students' surroundings so that the students themselves can easily understand the importance of the lyrics. Suppose a song has material content that has no proximity to the surrounding environment or is more likely to lead children to imagine (Niland, 2019). In that case, songs with scientific nuances will be difficult for children to understand directly and easily. Moreover, science is one of the authentic materials that should be now felt through all the functions of the students' five senses. The surrounding environment directly has a major influence on the development of children's understanding and comprehension abilities regarding the learning material provided (Barnett et al., 2022). Especially in this context, the technique of combining science learning material with Islamic nuances which are poured into a singing concept must

have physical closeness (proximity) to the environment around the students.

d. Joyful Tone-Based Chant

The tone is an inseparable part of a song arrangement (Gutama, 2020; McDonel, 2015). In simple terms, tone means a composition of sound frequency and tempo that is arranged regularly (Gutama, 2020). In general, children's songs or songs have happy tones, regular beats with a cheerful voice help students more easily understand the science material in a song lyric, cheerful tones tend to be easy to remember for students, especially at the early childhood education level, which of course requires special attention (Arasomwan & Mashiy, 2021). The singing method with a happy tone approach makes it easier for students to remember well the content of Islamic science learning material that is presented through a song. Presenting a pleasant tone certainly makes the learning atmosphere lighter, without students having to be consciously burdened with targeted learning outcomes.

e. Concise Lyric-Based Chant

A song addressed to children should have a simple and short lyrical composition. This is because the content of lyrics or short words makes it easier for students to quickly remember the material in the song (Dean, 2019; Gutama, 2020; Wadiyo et al., 2021). Singing with concise material and lyrics like this actually makes it easy for teachers and students, teachers will find it easier to compose song lyrics while students will tend to accept and understand them more easily (Ilari & Cho, 2019). A short song can mean a series of songs that can be composed with a series of tones or lyrics in a short duration. This is because the composition of the song must prioritize the emphasis on elements of science material that are accompanied by the needs of students or learning achievement targets.

f. Evocative-Based Chant

Children's songs tend to be arranged in repetition, repetition needs to be done with the aim that children are more enthusiastic about singing a song (Arasomwan & Mashiy, 2021; Gutama, 2020; Roberts, 2019). This is intended so that the strengthening of science material with Islamic nuances can be easily remembered (evocative) by students as well as the contents of the song lyrics which are arranged in repetition, making the impression of learning lighter and more enjoyable, especially if the tones in the song are pleasant to hear (Bergeson & Trehub, 2002; Peterson et al., 2016;

Roberts, 2019). Learning activities at the children's level generally apply repetition activities, this activity certainly makes students able to digest the meaning or meaning of a song more effectively and efficiently.

4 CONCLUSION

Based on the findings in the field and the discussion, RA NurulHidayah School, Jambi City, and TKIT Tabki Mar-hamah, Solok Selatan, apply the division of class groups in the format of the Center Class concept, each center class is held by two teachers who are certainly qualified to teach the designated center class. The center class concept itself can be arranged freely according to the policies, needs, and facilities in the institutional unit itself. This center class facilitates the allocation of learning themes and subthemes that are carried out for two semesters. Articles and subthemes can also adjust to the needs and policies of the institution. The position of science learning at RA NurulHidaya School, Jambi City, and TKIT TabkiMarhamah has the same intensity. It's just that the allocation of science-based materials can vary in each institution. Based on the 2013 Curriculum released by the Ministry of Education and Culture through Permendikbud Number 146 of 2014, which regulates the 2013 Kindergarten Curriculum Competencies which are thematic, several themes have science content in them, including Self Theme; Animal Theme; Plant Theme; Water, Air, and Fire Theme; and Universe Theme. The characteristics of the concept of singing that are customary or commonly applied in RA NurulHidayah School, Jambi City, and TKIT TabkiMarhamah, South Solok, in this study include seven conceptual characteristics, including Thematic-Based Chants; Popularity-Based Chants; Proximity-Based Chants; Joyful Tone-Based Chants; Concise Lyric Chants; and Evocation-Based Chants. Within this seven-concept framework, songs with Islamic science content should be used as one of the guidelines for creating an appropriate song concept for children, especially in RA or early childhood education both in Indonesia and in more general.

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Design of Android-Based e-Module Using Lectora Inspired by Newton Law

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Keywords: Android-Based e-Module, Lectora Inspire, Newton Law, Valid and Practical.

Abstract: This study shows that the design of an Android-based e-module using Lectora Inspire is valid and practical for learning Newton's law. The research method used is Research and Development. Its design in this study is the ADDIE development model consisting of five stages: analysis, design, development, implementation, and evaluation. The subjects of this research are experts, peers, and students. The testing procedure is carried out through validity and practicality tests. Data was collected using interview instruments and questionnaires. All data were analysed qualitatively (for interview data as well as suggestions and comments from experts, peers, and students) and quantitatively (for assessment data from experts, peers, and students using a Likert scale). The results show that the learning media in the form of an android-based e-module designed using the Lectora Inspire application on Newton's Law material is valid and practical. The conclusions related to the design of Android-based e-modules that must be considered are complete and explicit material to help students learn independently, a precise selection of type, size, and colour of letters, and the use of effective sentences so that students understand.


1 INTRODUCTION


Technology and information that are developing more rapidly will affect various aspects, one of which is the aspect of education. Teachers, as one the actors in the realm of education, must have the ability to utilize technology and information, by using digital technology, communication facilities, and/or appropriate networks to access, manage, evaluate, and create information that will function in the learning process (Solihudin, 2018). Those requirements are under one of the learning principles that became the basis for the development of process standards for primary and secondary education, summarized in Permendikbud Number 22 of 2016 about the use of information and communication technology to increase the efficiency and effectiveness of learning.


Physics is a part of science that studies phenomena or natural phenomena and their interactions with observable objects/matter to microscopic objects/matter. Some students find it

challenging to study physics, as research has shown that out of 120 students in 3 schools, 51% of students think physics is difficult to understand (Azizah et al., 2015). This difficulty can be caused by the many formulas and concepts that must be mastered, including Newton's law material. As the results of a preliminary study on Public High School 5 Tasikmalaya students, where 48% of students said it was challenging to apply Newton's laws in everyday life and 54% of students had difficulty describing force vectors (force directions) and determining the types of forces acting on an object.

The learning media that is used in learning Physics is a module. The module assists in determining student competency achievement in the material studied (Simamora et al., 2017). A learning module is a unit of learning activity planned and designed to assist students so that learning objectives are achieved (Fauzan, 2021). As technology continues to develop, many shifts have shifted from print-based to digital-based media. Likewise, learning modules that have transformed into

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electronic form are known as electronic modules (e-modules).

Learning modules designed in printed form tend to be more varied and attractive to students (Sidiq&Najuah, 2020). The printed learning module in question is a module that has yet to be based on digital technology. Even though digital technology is currently developing rapidly, teachers are required to utilize technology in the learning process. As for some of the existing electronic modules, they only transfer hard copies of textbooks to soft documents in doc, pdf formats, and so on (Kiruna et al., 2020).

Meanwhile, the module does not include various products such as video, audio, animation, and images that should be available in a digital technology-based module to help students understand the subject matter. Following research that learning media in the learning process has several benefits, namely (1) computer simulations in the form of animated images can strengthen and develop students' understanding of concepts, (2) mastery of the material is at a high level, (3) interactive multimedia-based learning media has been assessed theoretically feasible (Shalikhah, 2017).

One application used in developing electronic modules and inserting products in video, audio, animation, and images is the Lectora Inspire application. It is an application that provides programs for creating effective learning media. This application is also software designed for electronic learning. Lectora Inspire is considered easy to use by even teachers who are not proficient with computers because this application is specifically designed for beginners and does not require an understanding of programming languages (Irsyad, 2016).

Besides the Lectora Inspire application, Android is also an operating system that can assist in learning. Android is a popular and populist operating system because it is used in various circles (Sugiyono, 2017). Android is a complete, open, and accessible platform. A comprehensive platform means it allows programmers to develop an application with available tools, an open source tells it is free to create applications, and an accessible platform makes it easy for everyone to freely make applications without thinking about royalties that must be paid (Sidiq&Najuah, 2020).

Based on the background and development carried out by previous research, the authors are interested in developing an Android-based electronic module with the help of the Lectora Inspire application on Newton's law material. The study will also focus on producing valid and practical e-module design products established by analysing problems

and needs.

2 METHODOLOGY

The research method used is Research & Development (R & D), which is used to produce specific products and test the effectiveness of these products. The Research & Development method is a step that aims to develop a new product or even refine an existing product to be more effective and efficient. The Research & Development method is a unit where one stage with another stage has linkages and continuity (Sugiyono, 2017).

2.1 Research Stages

In this study, researchers used the ADDIE development model, which consists of five stages: analysis, design, development, implementation, and evaluation. The stages of the ADDIE development model in the implementation of research and development (Cahyadi, 2019) and (Kurnia et al., 2019) are as follows:

- a. Analysis, at this stage, the researcher identifies the problems or gaps that occur in learning
- b. Design, at this stage, the stage of planning learning modules that are developed by compiling electronic module frameworks in the form of storyboards and flowcharts, gathering material, and inserting/making illustrative images and videos.
- c. Development, at this stage, is where electronic modules are being developed by what was planned in the previous step. Physics concept expert validators, digital media expert validators, and language expert validators then validate the electronic modules that have been developed.
- d. Implementation, at this stage, the developed products are applied to determine the practicality of the questionnaires given to students and teachers after product trials have been carried out.
- e. Evaluation is the final stage for obtaining feedback from input and suggestions from students and teachers. This evaluation stage can also be in the form of an improvement (revision) made by researchers after receiving information and recommendations from students, teachers, and validators.

2.2 Population and Sample

Population in the entire research subject. In this study, the population was all students of SMAN 5 Tasikmalaya class X MIPA consisting of seven classes and a total of 251 students. This population was selected due to the suitability of the target material on Newton's law for class X MIPA, and they use smartphones with the Android operating system. The sample is defined as part of the number and characteristics of the population. The sample was selected using the cluster random sampling technique, which determines samples randomly from various groups in the population (Sugiyono, 2019). The population consisted of seven groups, and one was randomly selected, so class X MIPA 7 was obtained as the research sample.

2.3 Data Collecting

The data collection techniques used in this study were interviews, validation tests, and questionnaires to test the practicality of the e-modules. The questionnaire follows a Likert scale which consists of four categories, as shown in Table 1.

Table 1: Categorization using a Likert scale.

Score	Explanation
4	Strongly agree/ very decent/ very good
3	Agree/ decent/ good
2	Disagree / inappropriate / not good
1	Strongly disagree/very inappropriate

Table 2: Interpreted of product validity or practicalty.

Achievement Level(%)	Category
81 – 100	Highly valid/practical
61 – 80	Valid/practical
41 – 60	Quite valid/practical
21 – 40	Less valid/practical
0 – 20	Invalid/practical

The validation score obtained from the expert will then be calculated as a percentage. After getting the percentage results, then the results are interpreted based on the product validity criteria presented in Table 2.

3 RESEARCH RESULTS AND DISCUSSION

3.1 Analysis

The curriculum used in SMA Negeri 5 Tasikmalaya

is the 2013 Curriculum. This Newton's Law material refers to Core Competencies, and Basic Competencies refers to Permendikbud Number 37 of 2018. Then several indicators were compiled, including: (1) explaining Newton's Laws of motion; (2) determining the physical quantities in Newton's Laws; (3) conducting simple experiments on Newton's Laws; (4) knowing the various types of forces; (5) drawing and deciphering vectors of different types of forces acting on an object; (6) applying various types of forces acting on an object; (7) using Newton's Laws of motion in solving problems of motion of objects; and (8) applying the concepts of the Laws Newton's laws of motion in everyday life. Some material points presented in the e-module are Newton's Laws of motion, types of forces, and application of Newton's Laws.

The interviews and questionnaires show us that the teaching materials used in school are learning videos from YouTube, textbooks, and PowerPoint. The teaching material has helped students in the physics learning process, but 77% still need help learning physics. In learning Newton's Law, 54% of students still have difficulty determining the type of force and force direction acting on an object, and 48% of students have trouble applying Newton's three Laws in everyday life.

The teacher also explained that students' enthusiasm for learning was not optimal during online classes, so exciting learning media was needed. The results of the student questionnaire showed that 96% of students required teaching materials in the form of exciting learning modules in physics learning, and 92% of students needed Android-based learning modules that assisted in understanding.

Based on this analysis, an exciting and Android-based learning module is needed that helps in the learning process. Making these learning modules can be assisted by using the Lectora Inspire software, which combines various multimedia products such as images, video, audio, and text. In addition, the output of Lectora Inspire can be in the form of an HTML file converted into an Android application.

Another advantage of the Lectora Inspire software is the ease of use because Lectora Inspire does not need to use programming and provides a media library to help users. So Lectora Inspire can be used by teachers who need to be more proficient with computers. In addition, the Lectora Inspire software already provides a varied theme that can be used and provides several easy questions to apply with scores.

With the various advantages of Lectora Inspire, there is also the problem of students' difficulties and needs for learning media. The android-based

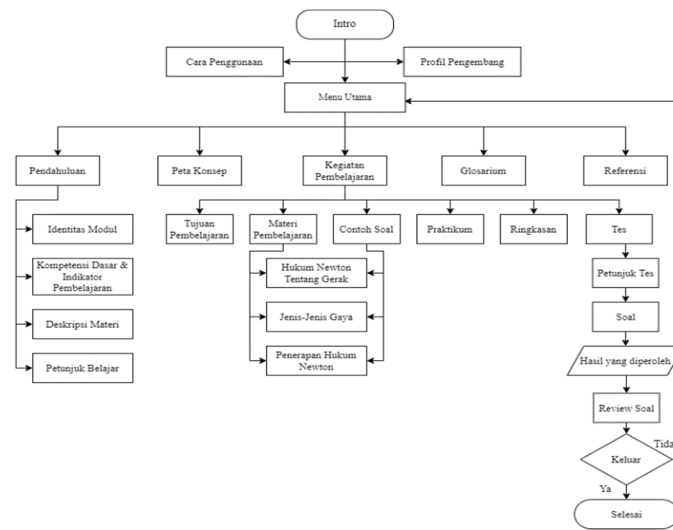


Figure 1: Flowchart of designed e-module.

e-module assisted by Lectora Inspire on Newton's Law material can be applied to students who are expected to help solve difficulties experienced and increase student enthusiasm in studying physics.

3.2 Design

The product design is in the form of a flowchart presented in Figure 1. The flowchart describes the workflow or process of the Newton's Law e-module that users or students can use. They start with the introduction of the e-module application as the first page of the main menu, which presents the introduction, concept maps, learning activities, a glossary, and references.

The material presented in the e-module is Newton's law material. Based on the essential competencies, Newton's Law consists of several sub-materials, including Newton's Laws of motion, types of forces, and the application of Newton's Laws. The material presented comes from a physics textbook written by Douglas C. Giancoli entitled "Physics" fifth edition volume 1, published in 2001, Paul A. Tipler entitled "Physics for Science and Engineering" third edition volume 1, published in 1998, "Physics book for SMA/MA Class X" written by Pujianto in 2016, learning module entitled "Physics: Newton's Laws of Motion" written by HerrySetiawan in 2020.

The background and several illustration images are sourced from *freepik*, which provides various photos and graphic designs for free or paid on the

internet. The sound effects embedded in the electronic module developed originate from *pixabay* (an internet site that provides hundreds of thousands of photos, music, and videos that can be freely used for free or for a fee). The researchers inserted illustrative images in the developed electronic module according to the needs. There are animated images that describe Newton's Law and become compelling characters in the e-module. The video from YouTube was inserted into the e-module, and the researchers made some videos. The buttons in the e-module are available in the Lectora Inspire software.

After collecting these materials, products are compiled and created using the Lectora Inspire software. Lectora Inspire is a software that can be used to create learning media. Lectora Inspire can combine other multimedia products such as videos, images, animations, and audio.

3.3 Development

This development stage includes activities for doing electronic modules with the help of Lectora Inspire and the results of expert validation. Figure 2, as shown, is a product image that was made before carrying out the validation test by an expert validator.



Figure 2: e-Module display, consist of (a) intro page (b) main menu(c) introduction/study guide (d) material chart (e) learning objectives (f) learning materials (g) sample questions (h) summary (i) glossary/references (j) instructions for use.

The intro page is the first or opening page for the e-module application. There is a text display on this page containing the application's name, "Newton's Law e-Module." There is a "start" button to go to the

main menu, which will work if you click that. This main menu consists of several menus, including the introduction/study guide, material chart, learning materials, glossary, and references. Through the

learning activity page, students/users can choose their activities starting from the objective learning page, learning materials, practicum learning videos, sample questions, summaries, and evaluations.

E-modules that have been designed, then carried out on validation tests by expert validators in the form of suggestions for e-modules. The validators consisted of three experts, namely material experts, media and digital experts, and linguists. With the suggestions given by the validator, improvements were made to the product being developed.

3.3.1 Physics Content Validator

Physics content expert validation was carried out to assess the learning material. The validator suggests using operational active verbs for practical purposes, from knowing to showing, based on verbs on cognitive and psychomotor assessment. These improvements can be seen in Figure 3.

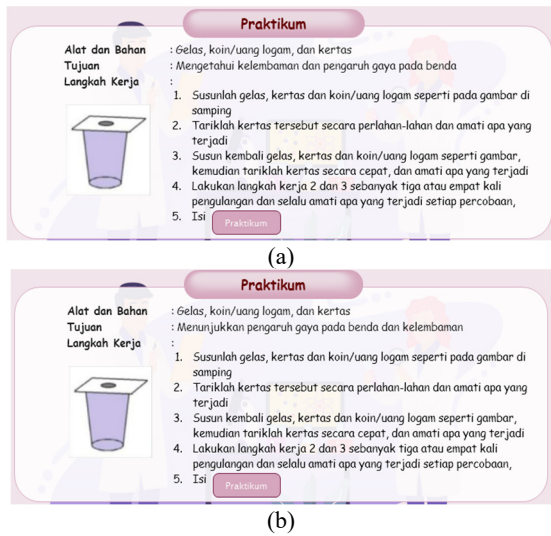


Figure 3: Experiment page before (a) and after (b) correction.

Providing a formula with its units is one of the essential things in Newton's equations, so the expert suggests completing this. The correction is presented in Figure 4.

Modules are designed to be used independently by students, so they must be designed as completely as possible and provide precise information so that there are no misconceptions for students. Based on this, the expert suggests completing the illustration of Newton's law with the direction of acceleration and a description of the use of positive and negative signs in the equation for the observed object, presented in Figure 5.

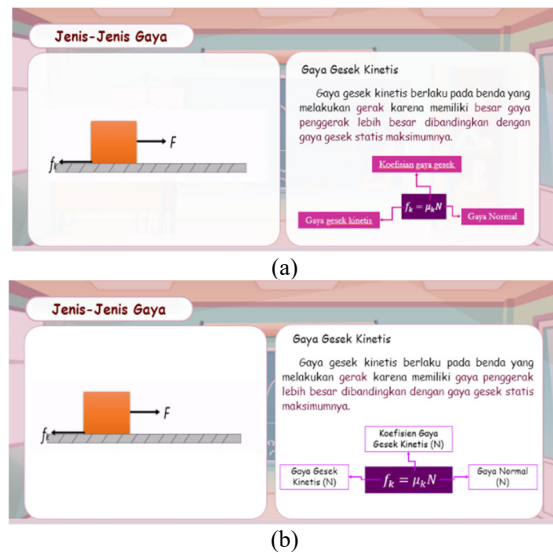


Figure 4: Types of force pages before (a) and after (b) correction.

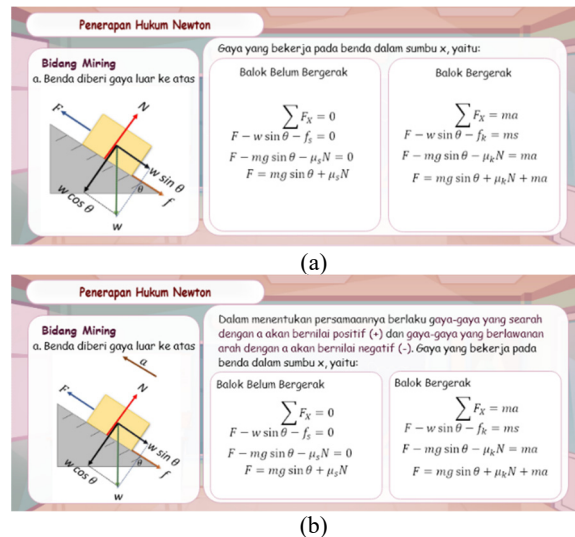


Figure 5: Illustration of Newton's lawpages before (a) and after (b) correction.

The score given by the expert on the physics content is 54 out of 60, so a percentage of 89% is obtained. These results are interpreted based on the product criteria in table 2 so that it can be said that the e-module developed is "Highly Valid."The resulting score from the physics content expert can be seen in Table 3.

Table 3: physics content validation results.

Validator	Score	Maximum Score	Percentage
Expert 1	54	60	89%
Expert 2	54		
Expert 3	53		
Total Score	161		
Average	54		

3.3.2 Digital Media Validator

Digital media expert validation was carried out to assess the media and digital function of developed e-modules. The expert suggests adding an image or animation on the cover that depicts the material contained in the e-module. Therefore, an animation of two people doing tug of war is added as an example of a force in rope tension. The correction is presented in Figure 6.



Figure 6: Coverpage before (a) and after (b) correction.

Other suggestions are font type and size in formula descriptions and colour selection on the gravity page. The font type and size in the e-module must be designed very well because it can interfere with students' comfort in using the e-module.

The score given by the expert on the digital media is 41 out of 44, so a percentage of 92% is obtained. These results are interpreted based on the product criteria in table 2 so that it can be said that the e-module developed is "Highly Valid."The resulting score from the physics content expert can be seen in Table 4.

Table 4: digital media validation results.

Validator	Score	Maximum Score	Percentage
Expert 1	39	44	92%
Expert 2	41		
Expert 3	42		
Total Score	122		
Average	41		

3.3.3 Indonesian Language Validator

Linguist validation is carried out to assess the language used in the module according to the sound and correct Indonesian provisions. The first suggestion is the repetition of sentences even though they have the same meaning in the description of the material. These corrections are presented in Figure 7.

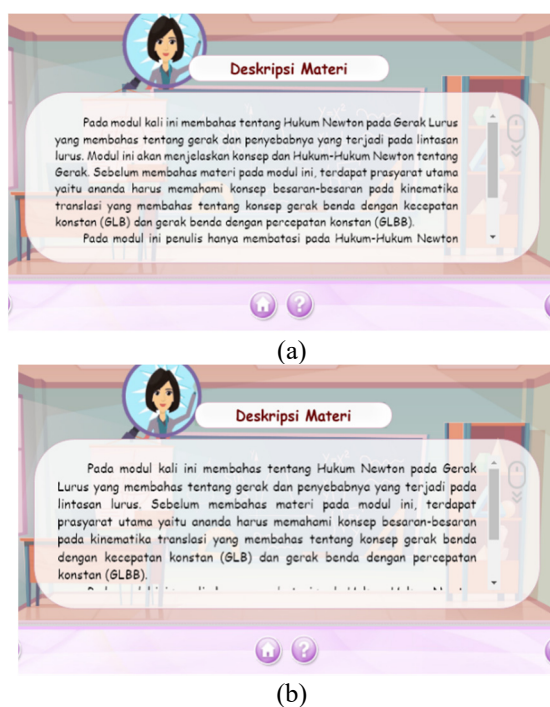
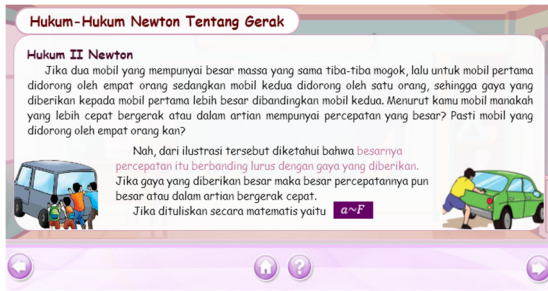
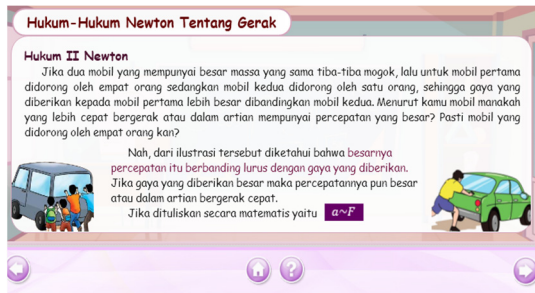


Figure 7: Content Descriptionpage before (a) and after (b) correction.

The use of less effective sentences is one of the suggestions that must be corrected. The error is on Newton's Second Law page, which can be seen in Figure 8.



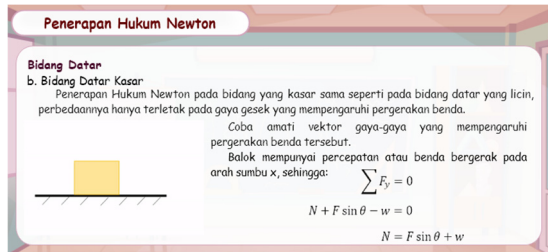
(a)



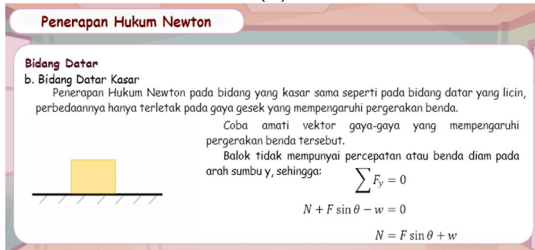
(b)

Figure 8: Newton's Second Law page before (a) and after (b) correction.

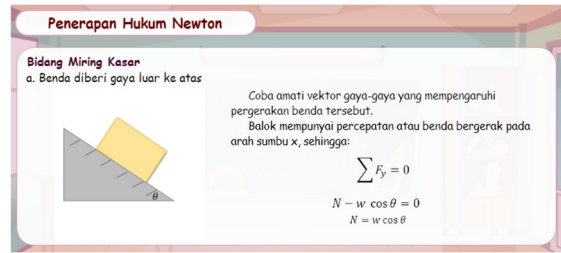
The narration that needs to be corrected on the flat and inclined plane material pages is to mention the axis and how it moves. The correction is presented in Figure 9.



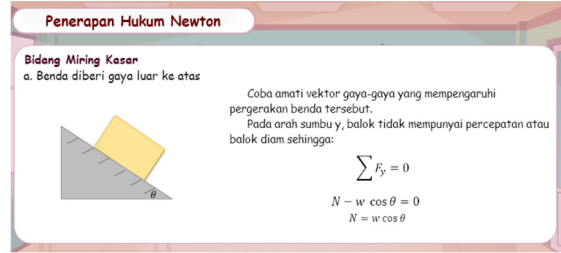
(a)



(b)



(c)



(d)

Figure 9: Application of Newton's Law in planepage before (a) and after (b) correction, and incline plane page before (c) and after (d) correction.

The percentage result from the linguist validation is 86%. These results are interpreted in table 2, concluding that the language used in the e-module is "Very Valid" to be used as a learning module in schools. These results were obtained from three validators with an average score of 21 out of a maximum score of 24, as shown in Table 5.

Table 5: Linguist validation results.

Validator	Score	Maximum Score	Percentage
Expert 1	21	24	86%
Expert 2	21		
Expert 3	20		
Total Score	62		
Average	21		

3.4 Implementation

The student practicality test was carried out on students of class X MIPA 7, consisting of 34 people. Students tried to use the e-module application and were asked to fill out an assessment questionnaire. The student practicality questionnaire is presented in the attachment. The results of the practicality test by students can be seen in Table 6.

Table 6: Practicality test results by students.

Average Score	Maximum Score	Percentage
23	28	82%

From the results of the practicality test, an average score of 23 was obtained from a maximum score of 28. So, a percentage result was obtained of 82%. Furthermore, these results are interpreted according to table 2, so it can be concluded that the android-based e-module assisted by Lectora Inspire is "Very Practical" used in the learning process.

The teacher practicality test was also conducted on physics teachers. The results of the practicality assessment by the teacher are presented in Table 7.

Table 7: Practicality test results by teachers.

Validator	Score	Maximum Score
Teacher 1	28	28
Teacher 2	21	28
Total	49	56
Average	25	28
Percentage	88%	

From the practicality test, a percentage of 88% was obtained with an average result of 25 from a maximum score of 28. The results of this percentage are interpreted in Table 2, which concludes that the e-module is "very practical" to use in the learning process.

3.5 Evaluation

The results of the input analysis given by the teacher and students show several advantages and disadvantages of this e-module. The advantages of e-module, according to comments given by teachers and students, include:

- a. e-modules are inserted by various multimedia products so that they are attractive to users
- b. e-module is easy to use
- c. can be used anytime and anywhere. Then the user can repeat the material so the student can get a better understanding of the concept
- d. separation of material that helps students understand the material in the learning process
- e. the e-module uses a national assessment model

The developed e-module has drawbacks, including:

- a. e-module has a large storage size
- b. there is no audio on/off facility

4 DISCUSSIONS

The features of this Newton's Law e-module include presenting various forms of multimedia that support the learning of Physics on Newton's Law. E-modules

are facilitated with learning videos that aim to help students understand the material and as an effort to make the developed e-modules attractive to students. Research also concludes that the understanding of students who use video media is superior to the understanding of students who do not use video media (Istiqomah et al., 2017).

Images are also inserted in the e-module, which will assist students in visualizing material, thereby helping students understand Newton's Law. The images presented in the e-module are moving images and static images. Student learning outcomes increase due to moving image-assisted learning and static images, of which the two have a higher increase, such as moving image-assisted learning (Ribawati, 2015).

Apart from videos and pictures, the e-module is also equipped with audio. The audio used as the background for the e-module is a soothing piano strain. It aims to reduce student anxiety in the learning process. Soothing sounds will affect brain performance to prevent learning difficulties caused by anxiety in the learning process (Angraini & Suyatna, 2017). The android-based Newton's Law e-module assisted by Lectora Inspire is also facilitated with practice questions to measure students' understanding of Newton's Law material. The questions presented in the e-module have various forms. It aims to conform to the national assessment model discussed in Permendikbud Number 17 of 2021 (Roffiq et al., 2017).

Discussion of material in the e-module is given a highlight to mark essential parts of the material. Marking important parts with a specific color can make it easier for students to remember and not easily forget. The use of color positively affects students' memory compared to when a material is written in black ink (Sujarwo&Oktaviana, 2017).

5 CONCLUSION

Based on the research and development results regarding android-based e-modules assisted by Lectora Inspire on Newton's Law, the development of android-based e-modules is in a very valid category. Product validity is based on the results of validation tests by physics content experts, digital media experts, and linguists. The expert validation gets a score in the percentage of 89%, 92%, and 86%, respectively, which is included in the highly valid category. The developed android-based e-module is in the highly practical category. It is based on practical tests conducted on students and teachers that obtained 82% and 88% scores.

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Development of Mathematics Learning Media Based on Android Applications Using Construct2 on Number Pattern Materials

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Keywords: Learning Media, Mathematics Learning, Android Applications, Construct.

Abstract: This research aims to produce mathematics learning media based on Android applications using constructs2. The material chosen is 'Number Pattern' for Junior High School students at SMP Negeri 3 Sungai Pua. This research and development (R&D) use the Plomp model which consists of a preliminary research phase, a development or prototyping phase, and an assessment phase. The research subjects were students in class VIII 1, which consisted of 5 students, and class VIII 2, which consisted of 25 students. This study produced an android application-based mathematics learning media using construct 2 on 'Number Pattern' that met the following criteria: (1) valid with a final validity score of 78.52%, (2) practical with an average score of 83.86%, and (3) very effective with an average score of 90.4. The number of students who achieve minimum grade standard is 24 students out of 25 with a 96% average completed score. Based on the results of the development carried out, the final product is produced, namely, Mathematics learning media based on Android applications using constructs2 on Number Pattern that is valid, practical, and very effective..

1 INTRODUCTION

The fourth industrial revolution (or "4.0 revolution") is the age of widespread use of cutting-edge technologies, including fiber optics and integrated network systems. Science and technology are developing very rapidly, these developments have an impact on the development of learning media. Technology-based learning media can be run with the help of a smartphone. A smartphone is a communication device that has various functions. Smartphones can display representations of study books in a display that is more attractive, practical, interactive, and not limited by time or place so that students can use smartphones as learning media that support learning activities (Huda in Putri Nandita Apsari et al, 2018: 162).

One of the instructional tools used by instructors to impart content and foster creativity is learning media. The term "media" refers to all tangible things that may be touched, observed, heard, read, or discussed, as well as the tools that are used to do these things. (Ruth Lautfer (in Talizaro Tafonao, 2018: 2).

Between teachers and students, learning media act as a physical and non-physical intermediate to improve the effectiveness and efficiency of learning. ((NEA (in Salahuddin 2016: 11 4),(Musfiqon (2012:28), Ruth Lautfer (in Talizaro Tafonao, 2018: 2)). Based on the definition, then it can be concluded that media is anything that can help students in the learning process so that students can understand the messages conveyed in learning.

Some research on the development of android-based mathematics learning media has been carried out by several researchers, one of which is research on the development of learning media on three-dimensional material for Senior High School students. Researchers reported that the media developed, the category was quite valid, learning completeness reached 80% in the effective category, and the results of the practicality of the media obtained an average score of 54.485 in the practical category (Dwiranata et al., (2019)). This is in line with the results of Habibur Rohman's research (2019) which states that students need a learning media that can be used at home or in class, and of them is

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learning media based on android applications using construct2. The goal is that students are helped and motivated in learning mathematics. Likewise, Atik Herawati (2018) states that discovery learning-based learning media with constructs is appropriate to use because these media can arouse student learning interest.

Lessons can be created and crafted by using the most recent technological advancements. Information and technology-assisted learning materials (ICT) can be utilized to make learning engaging and improve academic achievement through improving academic achievement in the form of learning outcomes and motivation for learning. (Chuang, 2014, p. 1969). The implementation of learning as required by PP No. 32 of 2013 article 19 paragraph (1), which states that learning activities in educational units are held interactively, inspiring, enjoyable, challenging, and motivate students' interest, can also be facilitated by the use of ICT-assisted learning media..

The use of learning media has a very important role in improving the quality of learning so that it becomes effective and efficient. Meanwhile, according to Suryani and Agung (in Liza Ainul Mila, 2019: 12), stating the objectives of using learning media are (1) increasing learning motivation, (2) facilitating the presentation of learning materials, (3) making it easier for teachers to make variations in learning methods, (4) increasing student activity during the mathematics learning process. One application of 21st century learning styles is the usage of Android-based learning resources.(Calimag et al., 2014, p. 90). The utilization of this kind of educational resources has the potential to enhance students' academic performance in terms of cognitive learning outcomes.(Chuang & Chen, 2007, p. 27; Jabbour, 2014, p. 2) and student learning motivation (Hess, 2014, p. 35; Calimag et al., 2014, p. 90).

Likewise Li et al. (2010, p.171) mentions the use of smartphones and tablets for learning can benefit the cognitive, metacognitive, emotional, and sociocultural components. Smartphones and tablets have the power to transform the learning experience. Likewise, Rohman (2018: 112) states that Android-based learning media is effective in improving student mathematics learning outcomes. In other words, Android or what is often called a smartphone can display representations of learning books in a more attractive, interactive, practical way and are not limited in time and place for study. With engaging applications, this form of learning medium enables students to learn without restrictions on time or location. (Squire, 2009, p.70; Meister, 2011, p. 28).

By 2018, there will be more than 100 million active smartphone users in Indonesia, according to digital marketing research firm Emarketer. This indicates that, behind China, India, and America,

Indonesia will have the fourth-highest percentage of active smartphone users globally. (Wahyudi, 2015). Similarly, the use of smartphones based on the type of work, namely 70.98% of users are students, while based on education level 79.56% of smartphone users are dominated by students (Kominfo, 2017).

The use of android media in the learning process is one of the efforts to create more meaningful and quality learning, can help students practice problem solving skills, especially math problems, and can concretize mathematical concepts that were initially abstract to become concrete with the visualization of mathematical concepts taught (Muhammad Takdir (2018:2) Setiawati & Qohar (2020) Argarini & Sulistyorini (2018).

Furthermore, based on the results of observations made at a Junior High School namely, SMPN 3 Sungai Pua, it was found that students felt bored learning if learning used media that was less interesting, and the method used was the lecture method. Based on these problems, the researcher developed an Android application-based learning media using construct2 because Android application-based learning media using construct2 was needed, so that effective, efficient and fun learning was achieved for students. While the goal of this research and development is to provide construct2-based mathematics instructional media that is reliable, usable, and efficient.

2 METHODS

This study belongs to the category of development research, or R&D. According to (Arliza R, Setiawan I 2019), R&D research is a process or set of activities used to create new products or enhance currently established ones.

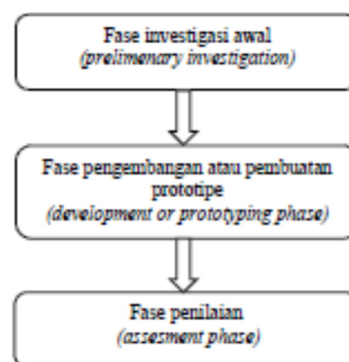


Figure 1: Plomp's research and development phase.

Plomp's research and development design is referred to throughout this research and development.

The Plomp model is thought to be more adaptable than the other versions and is therefore ideal for creating this product. Plomp's model is divided into three stages: the first stage is basic research; the second stage is development or prototyping; and the third stage is assessment. (Plomp and Nieven, 2013:30), as shown in the following figure 1.

The activity steps for each phase are as follows. Initial investigation phase (preliminary investigation). Planning work for the creation of construct2-based Android applications for mathematics learning media was done during the early inquiry phase. In this phase, researchers gather data or information in the field and, using analytical questionnaires, discover data collection-related issues.

In this phase, the researcher designed a product in the form of an android application using construct2 according to the characteristics of the students. The purpose of this phase is to prepare learning media based on Android applications using constructs2 that will be developed. At the prototyping stage, a formative evaluation is implemented. Formative evaluation is an analysis of a product's advantages and disadvantages to determine its applicability and validity.

After prototype 1 of the android application-based learning media using construct2 which was developed was declared valid and produced prototype 2, it then went through another trial to evaluate the product. The media evaluation consisted of small group evaluations. In this prototype, a small group test was carried out. Small group tests were carried out by asking 5 students to use learning media based on Android applications using construct2. Then a student practicality questionnaire was distributed to 5 students who took the test.

A limited trial (large group trial) was then undertaken in one class after the small group evaluation. At this point, the goal is to determine how well the Android application-based mathematics learning media usage construct2, which was developed in the implementation of learning, works practically and effectively.

The data from the trial results were then reviewed and the learning materials were once again updated in light of the findings of the one-class trial. It took numerous trials and data modifications before usable and efficient learning media prototypes could be produced. Figure 2 below shows the study's actions in detail.

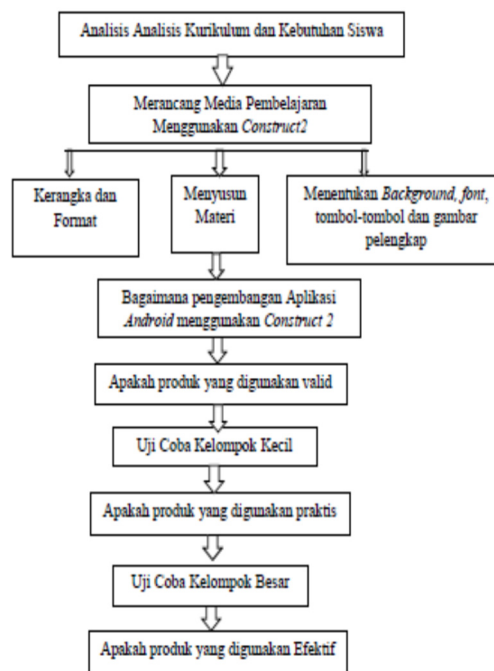


Figure 2: Research and development scheme process.

Students are used to test the product trial phase, which has been deemed valid by several validators. The feasibility of deploying learning media based on Android applications using construct2 will be evaluated after the trial period. Product trials are evaluating the viability of newly created learning mathematics products. The trials' purpose is to evaluate the viability of learning media built using construct2 for Android applications.

Class VIII 2 Junior High School students from SMPN 3 Sungai Pua, Agam District served as the study's test subjects for the 2022–2023 academic year. The experiment was carried out with class VIII to evaluate the practicality and efficacy of Android application-based learning media based on number pattern content.

In carrying out research and development (R&D), researchers used two types of data collected, namely quantitative data and qualitative data. Quantitative data were obtained from validator assessment questionnaire scores and student assessments. This qualitative data was in the form of validator suggestions for the product being developed and a description of the product trial implementation.

The instrument is a device used to make something easier to implement. The study's data collection tools included validity questionnaires, practicality questionnaires, and learning outcomes tests in activities to evaluate the efficacy of learning media based on Android applications using

construct2 on number patterns. The validation tests were conducted by media experts and material experts, and the practicality tests were conducted by teachers and students.

The Purpose of this Construct2's Technical Study of Data Regarding The Use of Learning Media Based on Android Applications Is To Characterize All The Validators' Opinions, Recommendations, And Responses As They Were Gleaned from The Description Column. an Open Assessment Questionnaire Was Used to Gather Information During the Trial Phase to Provide Feedback, Suggestions, Comments, And Improvements. The Outcomes of this Descriptive Study are Used To Assess the Degree of Validity, Applicability, And Efficacy of Products or Product Development Outcomes. A Likert Scale With Five Levels of Criteria Is Used To Collect Qualitative Data From The Questionnaire, Which Is then Examined By Computing the Percentage of the Average Item Score for Each Response to Each Questionnaire Question.

3 RESULT AND DISCUSSION

3.1 Results

Development of learning media based on Android applications using constructs on number pattern material. The material chosen in this study is material for the first semester of the 2022/2023 academic year. The initial investigation phase was carried out to plan development activities for Android application-based learning media using construct2. During this phase, the researcher collects data or information in the field and distributes student needs analysis questionnaires to students. It is obtained as follows. The recapitulation of the curriculum analysis for the Number Pattern' teaching materials is shown in Table 1 below.

Table 1: Summary of curriculum analysis results.

No	Basic competencies	Indicator
1.	3.1 Make generalizations of patterns on number sequences and object configuration sequences.	3.3.1 Determine the pattern of object configuration rows. 3.3.2 Determining patterns and syllables of number sequences. 3.3.2 Determine arithmetic sequences and series
2.	4.1 Solving problems related to patterns in number sequences.	4.4.1 Solve problems related to arithmetic sequences and series.

Source: Middle school curriculum (K-13).

The recapitulation of the student needs questionnaire analysis is presented in Table 2 below.

Table 2: Students need assessment recapitulation.

No.	Statement	Conclusion
1.	What do you think about math?	As many as 60.86% of students said that learning mathematics was very interesting and fun.
2.	What are the reasons students don't like math?	As many as 52.17% of students said that they did not like learning mathematics because there were too many formulas
3.	Are mathematics learning resources provided at school?	As many as 100% of students said that the school had provided resources.
4.	What learning resources are provided in the school?	As many as 82.60% of students said that the school had provided learning media, namely textbooks.
5.	Have you ever learned to use an Android application?	As many as 65.21% of students said that they had learned to use the Android application
6.	Do you agree to learn to use the Android Application?	As many as 78.26% of students said that they agreed if mathematics learning media were made
7.	Can you understand how to solve math problems in the learning media?	As many as 65.21% of students said that they could understand how to solve math problems in the learning media. As many as 52.17% of students showed curiosity in learning
8.	Do the teaching materials you use contain values such as: Honest; Creative; Independent; Hard work; Curiosity	As many as 52.17% of students develop curiosity in learning
9.	Can the teaching materials that you use increase your motivation in learning?	As many as 73.91% of students said that they were motivated in learning to use the Android application.
10.	How is the use of language in teaching materials that you often encounter?	As many as 65.21% of students said that the language used in previous teaching materials was easy to understand.
11.	What language is suitable in learning media?	As much as 95.65% of students agree that the language used in simple language learning media.
12.	Do you like learning media based on Android applications.	As many as 60.86% of students like to learn using mathematics learning media based on the Android application

No.	Statement	Conclusion
13.	What color do you like the most for presenting Android Application-based learning media?	As many as 34.78% of students liked the media presented in blue.

The phase of development or prototyping. Using construct2 software, the researcher creates a product at this stage that is tailored to the needs of the students and takes the form of an Android application. Basic competencies (KD), learning objectives, learning resources, and sample questions are all included in Android application-based mathematics learning media. The activities in this phase are, Material Assessment Based on the analysis stage, the material used to develop learning media based on the Android application is number pattern material for class VIII Junior High School students. Opening aims to make an Android application using construct2 software to impress the user with the appearance of the main menu. It also consists of the entrance to selection menu, the basic competency menu, and learning objectives with attractive color choices, and attractive font types to motivate and generate enthusiasm for students in learning. The opening page can be seen in Figure 3.



Figure 3: The opening menu display.

The main display of the android application uses the developed construct2 software, consisting of the basic competency main menu, the learning objectives menu, the instructions menu and the material menu in the android application. The first menu is the KD menu. In this section, if selected, it will display learning competencies KD that applies in schools, namely K13. The main menu display can be seen in Figure 4.

Figure 4 shows the main menu on the android application using this construct2 software, there is a KD menu, learning objectives menu, instructions menu and material menu in the android application using the construct2 software.



Figure 4: Display of the Android application main menu using construct2 software.

The first menu is the Basic Competency (KD) menu. In this section, if selected, it will display the KD The second menu is the hint menu. In this section, if selected, it will load an Android application-based media usage guide page. The third menu is the material menu, this page contains material and explanations of some solved problem. The appearance of the material used in this android application includes the presentation of material in a systematic manner with an initial discussion, namely the understanding of number patterns along with a discussion of sample questions. Discussion of questions that are packed as interesting as possible.

Before validating learning media based on Android applications using construct2, the validity of the research instrument was first carried out, then the validation of the instrument was analyzed according to what had been determined. Suggestions and improvements from the validator and the results of the Android Application validation are shown in Figure 5 below:



Figure 5: The display before and after validator suggestions.

Based on the criteria for assessing the validity of Android application-based learning media that had been previously determined that the product met the criteria $68 < V \leq 84$ with an average validation score of 77.24 %, it means that the android application-based learning media is feasible to use with a little revision. The results of the final assessment of learning media based on Android applications using construct2 can be seen in Table 3 below:

Table 3: Final assessment result recapitulation.

No	Validators	Score %	Description
Media Expert			
1.	01	74,28	Valid
Material Expert			
2.	01	72	Valid
Linguist			
3.	02	85,45	Very Valid
Average		77,24	Valid

Student Practicality Response Questionnaire Results. The results of the student practicality response questionnaire can be seen in Table 4 below.

Table 4: Student practicality response questionnaire results

No.	Statement	Total Score	Score Mak.	Perc enta ge	description
A. Interest to learn					
	1. Attractive Android Application cover design	110	125	88	Very Practical
	2. Instructions for using the Android Application in learning are clear and easy to understand	113	125	88	Very Practical
	3. Android application can help me in studying	100	125	80	Very Practical
	4. Android application makes me bored studying*	100	125	80	Very Practical
	5. The existence of pictures in the media makes me lazy to study*	106	125	84,5	Very Practical
	6. Android applications can generate	106	125	88,4	Very Practical

	curiosity and can increase my motivation in learning				
	7. The existence of pictures in the media makes me lazy to study *	105	125	84	Very Practical
	8. Android application can help me in studying smoothly	125	125	92	Very Practical
	9. Android applications can make learning easier for me	125	125	88,8	Very Practical
B. Material					
	1. The presentation of the material contained in the Android application is easy for me to understand	105	125	84	Very Practical
	2. The presentation of sample questions contained in the Android application is easy for me to understand	107	125	85,6	Very Practical
	3. Presentation of material using Android Application media is more interesting	109	125	87,2	Very Practical
	4. I can use Android Application Media well	113	125	90,4	Very Practical
C. Benefit					
	1. I can use the Android Application Media for independent study	102	125	81,6	Very Practical
	2. I can use Android Application Media well	103	125	82,4	Very Practical
	Average			85,4 %	Very Practical
	Category				Very Practical

Based on the criteria for assessing the practicality of learning media based on Android applications that

have been determined, the final product meet very practical criteria, namely $85 < P \leq 100$ with an average score (85.4%). So it can be concluded that mathematics learning media based on the Android application is very practical in learning.

From the results of the teacher's practicality response, it can be concluded that the presentation of number pattern material on the Android Application-based mathematics learning media using construct 2 is clear, the language and examples of questions contained in the learning media are easy to understand, the appearance of the Android application is attractive, and can make learning easier.

So, it can be concluded that Android application-based learning media is practical in terms of utilization and usage. The results of the practical response questionnaire from the teacher can be seen in Table 5 below.

Table 5: Teacher practicality response questionnaire results.

No.	Indicator	Scor (%)	Description
1.	The depth and breadth of the material achieves the learning objectives	80	Practical
2.	Suitability with students' cognitive development	80	Practical
3.	Student curiosity arises when learning to use the Android application	100	Practical
4.	Students are interested and motivated in learning to use the Android Application	80	Practical
5.	Media design with less attractive material*	80	Practical
6.	Appropriateness of the right mathematical concepts to the material	80	Practical
7.	uitability of the material with KD (K13)	80	Practical
8.	Order of presentation of systematic material	80	Practical
9.	There are no examples of questions in learning media (*)	100	Practical
10.	Availability of test questions at the end of learning	80	Practical
11.	The theme and color combinations used are attractive	80	Practical
12.	The selection of images on Android Application media is interesting	80	Practical
13.	The font used is very clear to students	80	Practical

No.	Indicator	Scor (%)	Description
14.	Ease of use of Android Application media by students	80	Practical
15.	The navigation buttons are attractive and can be used smoothly (next, back, home and sub menu buttons).	80	Practical
16.	The language used is easy for students to understand and is in accordance with (EYD)	80	Practical
17.	The language used is not in accordance with (EYD)*	80	Practical
	Average	82,35%	Practical

To see the effectiveness of the android application-based mathematics learning media using construct2 on number pattern material, a test was carried out on each student, to measure the level of student understanding of the material that had been learned and understood by using the media. The learning outcomes test can be seen in Table 6 below.

Table 6: Students test result recapitulation.

No	Information	Total students	complete%
1.	Complete >70	24	96 %
2.	No complete <70	1	4 %

The results of the assessment of the effectiveness of the android application-based mathematics learning media using construct2 on the number pattern material meet the very effective criteria, namely $80 < E \leq 100$ with an average percentage of student learning completeness of 96% or the number of students who completed as many as 24 students out of 25 students who took the test.

3.2 Discussion

The existence of the Covid-19 pandemic has motivated teachers to improve their skills in designing technology-based learning. There are many platforms available to support learning. Android applications using construct2 are a platform that provides creators to be creative in creating an application easily without coding, including teachers. Teachers can add material and quizzes in the form of text, audio, and video, attach files, and can even be integrated into websites and social media. Of course, the features that have been made can help the learning process, especially in number pattern material.

According to the research, teachers at SMP N 3 Sungai Pua were unfamiliar with the android application-based mathematics learning medium that used construct2. Construct2-based Android apps for learning maths that have been approved by professionals. Based on the results of the validation of the android application-based mathematics learning media using construct2 by 3 validators, a total score of 78.52% met the valid criteria, especially in aspects of learning, material, language, learning evaluation, and usability was considered valid. Practicality assessment can be seen from two sources, namely practical response questionnaires by teachers and practical response questionnaires by students. The results of the teacher's response questionnaire obtained an average score of 82.32% met the practical criteria. The results of the student response questionnaire obtained an average of 85.4% fulfilling very practical criteria, especially in learning interest, ease of understanding, and presentation of material and media presentation. Based on the total average score, it was obtained that mathematics learning media based on Android applications used constructs2 with practical criteria, namely 83.86%. While the assessment of effectiveness, seen from student learning outcomes tests showed that 24 students achieved the minimum completeness criteria ($KKM = 70$). Thus the percentage of student learning completeness is 96%, so effectiveness is obtained with very effective criteria. From student learning outcomes it is known that there is an effect of learning outcomes by using learning media based on Android applications using construct2.

This can happen because learning using learning media based on Android applications using construct2 can motivate students to learn the material provided quickly, and to be able to work together in completing their assignments. This is in line with the research results of Astuti & Bhakti (2018), learning media is a new strategy for learning in the classroom so that learning is meaningful, not boring, and non-abstract. The use of mobile learning has been shown to encourage student motivation and support in their learning activities (Sulisworo et al, 2016). The development of multimedia technology promises great potential in changing the way students learn.

Multimedia also provides educational opportunities for developing learning techniques (Taufiq et al, 2017). The existence of learning media made by the teacher can increase student learning motivation and students are interested in the lessons delivered by the teacher.

Likewise, according to Bhakti & Astuti (2018), the skill level or psychomotor ability of students will

increase if the learning provided by the teacher is changed (not monotonous) and uses interesting learning media. Because it is packed with games and allows students to learn at any time, anywhere, and with any device, learning with learning media based on Android applications using construct2 makes students happier in learning. Students' high levels of interest and motivation to learn considerably improve the learning results they achieve. Construct2-based learning applications for Android have several benefits, one of which is that the design of the media is appealing in terms of color, language, graphics, and animation. The buttons on this medium can function properly when used following the instructions, making it simple to use and understand by pupils. Students won't get tired of utilizing the material because it follows the SK/KD and is complemented by images and animations.

The findings of this study support the claims made by Matsuo et al. (2012, pp. 34–49), Sakat et al. (2012, p. 874), Anggraeni & Kustijono (2013, pp. 17–18), and Jabbour (2014, pp. 1-3), according to which technology-based learning media can improve learning outcomes by boosting motivation for learning, making it more interesting and fun, and increasing learning interest.

They are created under students' levels of thinking, learning media can enhance cognitive learning results (Sudjana & Rivai, 2011, p. 3). The stages of mental evolution, from concrete to abstract, from simple to sophisticated, are reflected in the degree of human thought. Because learning media allow for the concretization of abstract information and the simplification of complex information, they are strongly tied to the phases of thinking. For the mutual benefit and protection of Authors and Publishers, it is necessary that Authors provide formal written Consent to Publish and Transfer of Copyright before publication of the Book.

The signed Consent ensures that the publisher has the Author's authorization to publish the Contribution. The copyright form is located on the authors' reserved area. The form should be completed and signed by one author on behalf of all the other authors.

4 CONCLUSIONS

The conclusions from this study include, the android application-based mathematics learning media using construct2 on number pattern material has been successfully developed. The development process uses Plomp's development model through 3 phases,

namely: (1) the preliminary research phase, (2) the development or prototyping phase, and the assessment phase.

The results of evaluating the validity of the android application-based mathematics learning media using construct2 on number pattern material by the validator met the valid criteria with an average score obtained of 78.52%. So that the mathematics learning media based on the android application uses construct2 on number pattern material that is feasible to use with a slight revision according to the suggestions of the validator.

The results of the practicality assessment of the android application-based mathematics learning media using construct2 on number pattern material meet practical criteria with an average teacher response score of 82.32%, while student responses with an average of 86.25% for class VIII 1, 85.4% for class VIII 2.

The average score for practicality was 83.86%. So the Android application-based mathematics learning media uses construct -2 on number pattern material that is feasible to use. The results of the effectiveness of the Android application-based mathematics learning media using construct2 on number pattern material are very effective with an average score of 90.4. So that the average percentage of student learning completeness is 96% or the number of students who complete 24 students out of 25 students who take the learning achievement test.

Based on the results of the development carried out by going through the 3 phases above, the final product is a valid, practical, and very effective Android application-based math learning media.

Mathematical learning media products based on Android applications using construct2 on number pattern material are considered very effective for use in learning, so it is recommended that educators and students be able to use them as alternative media for learning mathematics on number pattern material. Similar media also need to be developed with other learning materials to support the implementation of learning in schools.

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Learning and Innovation Skills of Chemistry Education Students in Lesson Study Learning Community-Based Microteaching Course

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Keywords: Collaboration, Communication, Creativity, Critical Thinking and Problem Solving, Learning and Innovation, LSLC, 21st Century Skills.

Abstract: Competent prospective teachers have to be prepared in this disruptive era with the learning and innovation skills that make them ready to compete in the work field in the future. Lesson Study Learning Community (LSLC) based micro-teaching courses were conducted to develop their pedagogical content knowledge as well as 21st-century skills through three specific stages namely plan, do, and see. This study aims to describe the critical thinking and problem-solving, communication, collaboration, and creativity (4C skills) of students who take the LSLC-based micro-teaching course. A class of students were observed and the 4C skills were measured using a four scales observation sheet for a semester program. The study obtained that the student's learning and innovation skills are in good and very good categories which are the former for collaboration and creativity and the latest for communication, critical thinking, and problem-solving skills. Some detail abilities such as working together in groups and the ability to build ideas while doing plan, do and see activities need to be improved.

1 INTRODUCTION

Twenty-first-century skills, particularly learning and innovation skills in achieving a knowledge-based society (KBS) are one of the Indonesian government's objectives. A knowledge-based society will allow people to achieve knowledge, create and apply it effectively to enhance economic and social life. It will improve competitiveness globally, alter the paradigm from developing natural resources to human resources (Nugroho, 2005). Universities and schools have an important role in achieving KBS on an ongoing basis, linking science with cognitive, attitudes and skills in learning (Karpov, 2016).

Scientific learning can be implemented through learning models such as guided discovery learning (GDL), guided inquiry learning (GIL), and problem-based learning (PBL)(Ministry of education, 2013). These learning models are effective in improving student learning outcomes (Fajriati & Fitriza, 2020; Yerimadesi et al., 2019) and are able to bring up

critical thinking and problem-solving skills in chemistry subjects (Yerimadesi et al., 2019). These skills are highly expected by the government of the Indonesian generation and are obtained through learning in schools. Therefore, teachers must have knowledge and skills in applying the three learning model.

The micro-teaching course is a compulsory subject in the Chemistry Education Study Program which aims to train students' pedagogic competence. Microteaching involves teaching learning simulation in the classroom that is carried out to peers for 10 to 15 minutes (Iksan et al., 2014; Lowe, 2019). It is a simplification in terms of study time, number of students, breadth of material and teaching skills (Sukirman, 2012). Some of the teaching skills that must be possessed by teachers are a variation of stimulus, opening skills, closing skills, reinforcement skills questioning skills, and explaining skills. Through micro-teaching courses, students are trained in applying the basic skills of teachers such as

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implementing a scientific approach at school in teaching internship course and their future work as professional teachers. They have to follow the scientific approach to plan and conduct learning scenarios.

LSLC is a professional development process that emphasizes improving students' learning difficulties. LSLC is oriented to students' problems along teaching-learning process (Saito & Atencio, 2015). It consists of three continuing stages called a plan, do, and see (Herliani & Masitah, 2018; Saito & Atencio, 2015; Susetyarini & Miharja., 2017; Tonya Monique Nicki Collins, 2013). Through LSLC-based micro-teaching, students can plan to learn with their group or community at the "plan" stage, conduct a learning process based on planning that is called as "do", and reflect on the learning carried out in the "see" stage (Iksan et al., 2012; Saito & Atencio, 2015). LSLC which is conducted in groups makes students collaborate in planning learning so that student creativity is created in learning with the GDL, GIL, and PBL models (Fernández, 2005; Zhou & Li, 2017). Joint observation of the problems faced by students/peer students in micro-teaching course at the "do" stage helps students find out student problems, and at the reflection stage students provide problem-solving for improvement in the next "plan" stage.

Chemistry education student competency in planning, implementing, and evaluating the process of learning through learning models is useful during teaching internships by applying the LSLC system in future schools. The problems faced by students in achieving learning outcomes and 21st-century skills can be solved cooperatively by teaching internship students, mentor teachers, and school principle. Then, they can work together to plan the next meeting.

21st-century skills consist of critical thinking and problem-solving, collaboration, creativity, and communication skills. Critical thinking skills are mental processes, strategies, and human representation used to solve problems, make decisions and learn new concepts. Problem-solving skill is a thinking skill starting from looking for data to concluding. Creativity is the ability to provide a new answer to a problem or find a new relationship and provide a new mental structure in a row (Piedra et al., 2010). Collaboration skills are activities that initiate dialogue such as making proposals or expressing ideas to initiate discussion, respond to contributions from group members by providing feedback, and explore opinions on certain points of view (Gogoulou et al., 2005). While communication is the process of exchanging information from someone who provides information through verbal or

non-verbal methods to people who receive information (Sukaria, Muhammad Ikhwan, Nahadi, Sriyati, 2018)

2 MATERIALS AND METHODS

The research was conducted on a class of chemistry education students of Universitas Negeri Padang, Indonesia who take Micro Teaching course. The students were divided into 3 groups that designed, do, and see the learning activities using GDL, GIL, and PBL. They compiled lesson plans together then the model teacher did the teaching-learning practice while other members of the community observed peer students. The result of the observation contributed to the lesson plan for the next meeting. Plan and see activities were conducted online and recorded while the do activity was carried out by face-to-face meeting.

The recording was observed and noted in the observation instrument to assess learning and innovation skills which are critical thinking and problem solving, communication, collaboration, and innovation. The instrument consists of indicators of each skill and was completed by the level of skill. There are 5 indicators of communication skills, 4 indicators of collaboration, 8 indicators of critical thinking and problem solving, and 7 for creativity. There are 4 categories of ability, they are very good, good, fair, and poor.

The data found was analyzed using Miles and Huberman method consisting data reduction, data display and verification (Matthew & Huberman, 1994). We categorize the data for each student, each indicator, and for every skill.

3 RESULT

Critical thinking skills, problem-solving, communication, and collaboration of students when carrying out LSLC were measured using a 4-scale observation instrument containing indicators of critical thinking and problem-solving, collaboration, communication, and collaboration as shown in Figure 1.

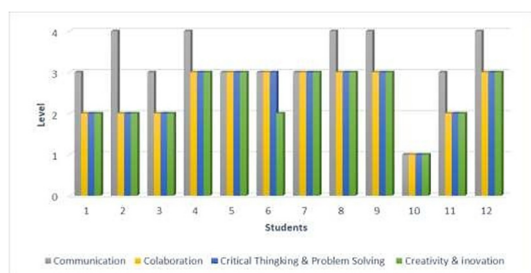


Figure 1: Learning and innovation skills of chemistry education students in the LSLC-based microteaching course.

In general, it appears that the best skills possessed by students who take microteaching lectures by planning and reflecting on learning of LSLC are communication skills while other skills are almost the same for every student. Communication skills are at a very good and good level except for 10th students 60% of students have excellent communication skills. Critical thinking skills and problem solving and collaboration are always at the same level for each student, while the level of student creation varies where 60% is good, 33% is fair and 7% is poor.

This level is the mode value of the skill level of all students in each indicator. Based on Table 1, it is known that students have critical thinking and problem-solving skills as well as good communication shown through these indicators, but collaboration and creative skills, especially the ability to work together in groups, express creative ideas conceptually and practically, and make problems as an improvement benchmark.

Table 1: Communication skill level of chemistry education students in LSLC-based micro-teaching course.

Indicators	Level
Using the ability to express ideas, both during discussions, inside and outside the classroom, as well as in writing	Very good
Using spoken language that is appropriate to the content and context of the conversation	Good
Have the attitude to be able to hear, and respect the opinions of others	Very good
Using a logical and structured flow of thinking	Good
Using multilingual communication	Good

Table 2: Collaboration skill level of chemistry education students in LSLC based micro teaching course.

Indicators	Level
Have the ability to work together ingroups	Poor
Able to adapt in various roles and responsibilities, work productively with others	Good
Have empathy and respect for different perspectives	Good

Able to compromise with other members in the group to achieve the expected goals	Good
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Table 3: Critical thinking and problem solving skill level of chemistry education students in LSLC based micro teaching course.

Indicators	Level
Using various types of thinking or reasoning, both inductive and deductive, appropriately and according to the situation	Good
Understanding the interconnection between one concept and another	Good
Assess and make decisions effectively in processing data and giving arguments	Good
Evaluating and developing connections between information and arguments	Good
Processing and interpreting the information obtained through the initial conclusions and testing it through the best analysis	Good
Give solutions to various problems in their own way	Good
Optimize their abilities to solve problems	Good
Compile, express, analyze, and solve a problem	Good

Table 4: Creativity level of chemistry education students in LSLC based micro teaching course.

Indicators	Level
Have the ability to develop, implement and convey new ideas orally and in writing	Good
Be open and responsive to new and different perspectives	Good
Able to express creative ideas conceptually and practically	Fair
Using concepts or knowledge in new and different situations	Good
Using failure as a learning milestone	Fair
Have the ability to create novelty based on initial knowledge	Good
Able to adapt in new situations and make a positive contribution to Surrounding	Good

4 DISCUSSIONS

Firstly, communication skills are general skills that must be possessed by prospective teachers. This communication consists of verbal (oral), written, and social communication, all three of which are needed in the education field. This verbal communication can be trained through presentation and discussion activities, both small and large groups (Iksan et al., 2014). In the plan-and-see activities, each student was trained to present their learning designs because each of them is assigned to be a model teacher. Another activity is a discussion to improve the learning design based on the problems obtained from the do activities.

Community members provide their opinions, criticisms and suggestions so that they are trained to compose the right sentences to be able to state their ideas according to the content, and context of the conversation, logically, structured and can respect the opinions of others (Direktorat Pembinaan SMA Ditjen Pendidikan Dasar dan Menengah, 2017). These skills must be supported by self-confidence, knowledge of content, context and attitudes (Wetchasit et al., 2020).

The next skill is a collaboration which is part of 21st-century skills. It can be formed through LSLC because students are divided into 3 groups, each of which composes and implements learning using GDL, GIL, and PBL. Thus, students are trained to work together and complete each other's tasks. These skills require adaptation to roles and attitudes within the group (Direktorat Pembinaan SMA Ditjen Pendidikan Dasar dan Menengah, 2017). However, one indicator of the low level of collaboration is due to the ability to work together in groups that are not good. This low collaboration skill occurs in the group that composes and implements learning using discovery learning and problem based learning models. This skill is said to be low because some group members did not contribute to the discussion in improving the model teacher's lesson plan. They attended a meeting which was conducted using a zoom meeting, but there was very little interaction between group members, presenting more on lesson plans than discussing their contents. Moreover, there is no division of tasks in which someone acts as chairman and note-taker. Likewise, with the time of reflection, although group members convey the results of their observations, these results are not used as a basis for suggesting improvement in learning.

The third skill is critical thinking. It requires skills in analyzing and evaluating information that is important to solve problems with relevant considerations and reasons for solving a problem. Ennis stated that critical thinking focuses on how a person makes decisions (Ennis, 1993). The level of critical thinking skills is different for each individual, to assess a person's level of critical thinking skills, it can be seen using the leveling of critical thinking skills in solving a problem compiled by Paul and Elder (Paul & Elder, 2006). Problems that must be analyzed and evaluated in LSLC-based micro-teaching courses are how learning plans are prepared, and problems that occur in do activities that are observed and recorded and then reflected on see activities. In general, students have been able to examine and assess the planning, the situation in the field, and the results of observations. However, some

students need to improve these skills. The low skill level is due to the lack of student involvement in discussions so their critical thinking and problem-solving skills were difficult to identify.

Lastly, the level of critical thinking skills affects student creativity because to be able to come up with creative ideas, critical thinking, and appropriate problem-solving are needed. Based on Table 1, it can be seen that students' skills in generating ideas are lower than their creative thinking skills. Someone who thinks creatively is certainly preceded by critical thinking and problem-solving skills. However, students whose creative level is lower than critical thinking due to the ideas that are raised are something that is mainstream or has often been done by other people. To be able to think creatively, students need to brainstorm; create new ideas; describe, refine, analyze, and evaluate ideas (Piirto, 2011).

Limitations of the skills also occur in the ability to express creative ideas conceptually and practically. Students' ability in giving criticism and suggestions is good, but the ideas that are raised are something that is usually carried out in learning, not yet a novelty idea.

5 CONCLUSIONS

Through LSLC-based microteaching courses, students' learning and innovation skills are in very good and good categories, namely communication and creative thinking, and problem-solving, but collaboration and creation skills need to be improved, especially in the ability to work together in groups and the ability to build ideas on problems that faced in a plan, do and see activities. It is recommended that the implementation of LSLC-based microteaching lectures to improve 21st-century skills is to carry out face-to-face LSLCs to improve student interaction and communication.

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Validity of “Number Game” as Instructional Edutainment Media based-Android to Improve Conceptual Understanding and Interest

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Keywords: Validity, Edutainment, Instructional Media, Mathematics, Conceptual Understanding.


Abstract: Number Game is an instructional media-based learning mathematics on material numbers app for Android. The purpose of this research is to (a) illustrate the display of "Number Game" that will be used in Junior High School, and (b) describe the validity of Number Game. Number Game is a learning medium developed in collaboration with innovative learning models and current technological advancements to assist students in understanding mathematical concepts and pique their interest in learning. This study is part of a development research project that uses the ADDIE model, which stands for (1) Analysis, (2) Design, (3) Development, (4) Implementation, and (5) Evaluation. The instrument made use of a media quality validation sheet as well as the material from Number Game. Number Game has been approved by two experts. A material and media evaluation is used to validate the product. Number Game on material aspects received an average rating of 4.17 out of 5, indicating that it is in the Good or valid category. The evaluation of media aspects yielded an average score of 4.49, indicating that Number Game is excellent or very valid. Number Game was determined to be suitable for use as instructional media in junior high school.


1 INTRODUCTION


As technology advances, ethical concerns such as equal access to resources become more pressing. Technologists in education (Mayes et al., 2015). The use of media should be the part that should receive the attention of the teacher/facilitator in every learning activity (Sukardi et al., 2017). The utilization of technology, especially in the field of education, is increasingly being used in this digital era, but if you look at the applicative use of mobile-Android-based learning media, it has not been widely used in everyday life in the classroom. (Bahar & Soegiarto, 2020). The role of learning media is not only as a support or complement in the learning process, but can also be a source of learning information for students in learning, which affects learning outcomes


or achievement. (Saputro et al., 2020). This new paradigm of using technology is more than just machines and their interconnected software, but it can embody a constructive way of thinking that guides one's approach to learning about the world. Computers require ways of thinking that are primarily technical in today's educational environment. The more new technology molds the classroom into its own image, the more technical logic takes the place of critical, political, and ethical understanding (Okan, 2003), included in the process of learning mathematics.


Playing video games in learning mathematics and innovating learning technologies for learning mathematics have great potential to enhance student learning and motivation while demonstrating how different modes of user engagement can influence the

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instructional design of games.(Plass et al., 2013) and can help student in phase of abstracting and concretising in math (Heugl, 2004) .

One of the instructional media that can be developed in mathematics learning is video games (McLaren et al., 2017)(Saprudin et al., 2019). The use of video games among students has great potential. Nearly 60% of the world's population uses the internet and 80% of internet users in the productive age range say they actively play video games (Lete et al., 2022)(ESA, 2017). Integrating technology in the classroom is supported by the findings of Ardani, Salsabila, Handican, &Setyaningrum, where it was found that 65% of 134 teachers said that they did not use technology-based learning media in class and 72.65% of 223 students stated that the teacher taught Mathematics only relies on textbooks so that learning seems monotonous and conventional(Setyaningrum, 2016). Seeing this data, the need for learning media in the form of video games to be used in edutainment is very important (Rusliah et al., 2021).

According to Aksakalthat edutainment as a technology-based learning media can facilitate learning and teaching(Aksakal, 2015)and edutainment is a program that makes student-centered activities(Anikina & Yakimenko, 2015) and the empirical research presented in this paper demonstrates that a mathematics educational game can provide superior learning opportunities while also being more engaging (McLaren et al., 2017). Therefore, it is important to see how the quality of the learning media in the form of games is and accurately measuring media use in children and adolescents is therefore of great importance (Scherer et al., 2015), because the advancement of ICT in education has a positive impact and produces noticeable results(Yeni et al., 2019).

Concepts understanding is an important aspect to improve because it is the main goal and function in mathematics (Heugl, 2004). Several findings reveal the importance of students' mathematical understanding abilities. Novita Saristated that the ability to understand concepts in mathematics is important because mathematics studies concepts that are connected and mutually sustainable (Novitasari, 2016) and also stated that understanding mathematical concepts is an important basis for thinking in solving mathematical problems and everyday problems (Mawaddah & Maryanti, 2016).

Some empirical findings show that the use of instructional media can improve understanding of mathematical concepts (Novitasari, 2016), (Bahar & Soegiarto, 2020), (Gusmania & Wulandari, 2018), (Ariyanto et al., 2019), (Lestari et al., 2019), (Futri

Basya et al., 2019). To realize this goal in the Number Game video game, this research will discuss the validation of this instructional media in terms of the material carried and the overall quality of the media.

2 METHOD

This research is part of research development or Research and Development (R&D) where the purpose of this research is to assess the validity of the Android-based Number Game edutainment media which was developed to facilitate students' ability to understand concepts and interest in learning mathematics. The development mode used is the ADDIE (Analysis, Design, Development, Implementation, and Evaluation) model (Sweller, 2021) . Evaluation of the validity of Number Game instructional edutainment media was carried out in the third stage, namely "development". The instrument used in the validation is a validation instrument in the form of a validation questionnaire sheet, both material validation and media quality validation based on indicators compiled by researchers.

The validation sheet uses a Likert scale (1 to 5) in its assessment which then analyzes the results by converting to the table of instructional validity criteria for edutainment media as shown in the following table.

Table 1: Classification of Validity Assessment.

Score Interval	Criteria
$\bar{x} \geq 4,2$	Very Good
$3,4 \leq \bar{x} < 4,2$	Good
$2,3 \leq \bar{x} < 3,4$	Passable
$1,8 \leq \bar{x} < 2,3$	Deficient
$\bar{x} < 1,8$	Not Good

Contentquality, alignmentoflearning objectives, feedbackandadaptation, motivation, presentation design, interactionusability, accessibility, reusability, and standardscompliance are all assessed as part of the instructional media quality assessment.(Leacock & Nesbit, 2007). As for the assessment of the material using 2 indicators, namely the quality of the content and objectives as well as the quality of the instructional (Handican & Setyaningrum, 2021).

3 FINDING AND DISCUSSION

3.1 Display of Number Game

Number Game is a learning media that can be run on Android-based mobile phones, so it is included in mobile learning. Number Game, using scientific methods, can teach students to be active anywhere and at any time. This is in accordance with the opinion about the characteristics of good mobile learning where mobile learning devices are devices that make it easy for users to access, updated, interactive, contextually appropriate, flexible to use in learning, can be used anywhere and anytime, and ensure more students are involved because mobile learning is based on modern technology that students use every day (Qamariah et al., 2017).

Number Game has a 15.4 Mega Bite in size (MB). Except for the sections containing students' homework and uploading the results of student discussions, this application is designed to be used offline. Number Game is made with Construct2 software and built with the help of Android Studio as software to create apk. In addition, the Photoshop application is also used to design the appearance and attributes in this learning media, including such as background, character creation (players, enemies, and icons), button initiation, menu display, and so on. the results of making the Number Game display can be seen in Figure 1 which illustrates the Number Game display on a smartphone or mobile phone.



Figure 1: Number_Game in Mobile Learning (Smartphone).

The learning materials chosen for this application are Number for Junior High School. Number Game is intended to help students understand the concept of number material, which includes several topics such as integers, fractions, and number material. Furthermore, this media is designed to increase interest in learning mathematics based on data on student needs derived from the first phase of analysis.

Multimedia learning can increase learning motivation by using good composition in terms of color, sound, graphics, game music, character animation, and proper video explanation (Setyaningrum & Waryanto, 2018), the display of the initial menu (loading) and the main menu can be seen in Figures 2 and 3



Figure 2: Number-Game's Loading Bar.



Figure 3: Main Menu of Number_Game.

After the page has finished loading, the main menu for users will appear, with options such as about the developer, learning activities at home, KD formulation, how to use, information, and so on. If you don't want to open this menu, you can close it. Figure 3 depicts the Number Game instruction menu. There are several menus that can be accessed on the main menu including; 1) about the developer, 2) study at home 3) KD (Basic Competency), and 4) scientific approach, and 5) including: sound button, navigation, setting, bibliography, and exit button.

The learning process can begin after students selecting the let's play menu in the main menu which will then be directed to choose the game levels, each level must be completed systematically and sequentially and adapted to the learning material. The initial material that can be selected by the user is "knowing integers". The display can be seen in Figure 4 and Figure 5.



Figure 4: Menu for Selecting Learning Materials.



Figure 5: Choose a Discussion Topic.

The type of game used in this edutainment instructional media is the type of platform where it is in accordance with the results of the analysis of student needs regarding the type of game they like. The learning process as Figure 6 shows begins by providing a learning flow, apperception material, and then learning with a scientific approach, namely: observing, asking questions, reasoning, associating, and building networks.



Figure 6: Playing Page of Number_Game.



Figure 7: Scientific Approach on Number_Game.

Activities to develop the ability to understand concepts are carried out by developing learning according to a scientific approach, in Figure 9 students are directed to observe a problem about numbers which are then directed to ask questions (Figure 9), then solve the problem in Figure 10.



Figure 8: Presentation of Number Problem Material.

Number Game is designed so that users understand the material being taught before heading to the real mission. Each level has a mission to answer questions in order to advance to the next level. The mission is presented in the form of questions as in Figure 10 & 11.



Figure 9: Presentation of Number Problem Material.



Figure 10: Increasing Understanding of Concepts Through a Mission.

The material on Number Game can only be continued when the learning process can be completed by answering questions correctly. In addition to test questions for each level, test questions are also given for independent learning reflection on the home study menu as shown in Figure 10.



Figure 11: Display of Missions and Tasks on Number_Game.

Learning to understand students' mathematical concepts is also carried out at each level by providing a choice of examples and non-examples in the material presented which will train students' problem solving skills (Mawaddah & Maryanti, 2016), (Ariyanto et al., 2019; Gusmania & Wulandari, 2018; Lestari et al., 2019).

3.2 The Results of the Number Game Validation

The validation of Number Game consists of two parts: materials and media. Table 2 shows the validation results for the materials aspect.

Table 2: The Results of Number_Game Media Quality Aspect Validation.

Aspect	Expert 1	Expert 2	Average
Content Quality	4.16	3.83	4
Learning Goal Alignment	4	4.25	4.12
Feedback and adaptation	5	4.5	4.75
Motivation	4.5	5	4.75
Presentation design	4.56	4.68	4.62
Interaction usability	4.5	4.75	4.62
Accessibility	4.6	4.6	4.6
Reusability	4	4	4
Standards compliance	5	5	5
Average			4.49

Table 2 shows the validation score of the Number Game media quality aspect based on the LORI indicator. LORI indicators are used as indicators in assessing the quality of media used in learning that has met the validity and reliability aspects of the instrument. It means that the Instructional Media Edutainment, Number Game shows media quality according LORI Indicators (Leacock & Nesbit, 2007). Based on table 2 it can also be seen that 1) the quality of the content in Number_game meets the criteria of Good (4/5), 2) Learning goal alignment has the criteria of Good (4.12/5), 3) Feedback and adaptation has the criteria of Very Good (4.75/5), 4) Motivation meets the criteria of Very Good (4.75/5), 5) Presentation design has the criteria of Very Good (4.62/5), 6) Interaction usability has the criteria of Very Good (4.62/5), 7) Accessibility is Very Good (4.6/ 5), 8) Reusability is Good (4/5), and 9) Standards compliance meets the Very Good criteria (5/5).

As we can see from the results of the validation of the learning media experts above, the total average score is 4.49. So, the results of the assessment are included in the category, then the edutainment game Number_Game is included in the category "Very Good Validity".

Assessment of the material used in the media was carried out by 2 experts by analyzing the media based on the aspects determined and given in the form of a

material validation questionnaire. The following are the results of the material assessment by material experts in Table 3.

Table 3: The Results Number_Game Materials Aspect Validation.

Aspect	Expert 1	Expert 2	Average
Content Quality and Purpose	4.18	4.37	4.28
Instructional Quality	4	4.14	4.07
Overall Average			4.17
Criteria			Good

Based on Table 5, the results of the validation of learning material experts for the feasibility of learning materials in the edutainment game Number-Game obtained a total score of 4.17. so, the results of the assessment are included in the "valid" category in terms of the material used. The validity of product development shows that instructional media are developed on the basis of theories that are used as guidelines in formulating and compiling learning media. In this case the guideline used to see the validity of the media is the LORI (Learning Object Review Instrument) indicator (Leacock & Nesbit, 2007).

The main objective of LORI is to balance the validity of the assessment with the efficiency of the product evaluation process. Based on the data obtained from the media and material validation questionnaire, it can be concluded that the product developed is valid and feasible to use because it is in accordance with the indicators evaluating the validity of a media. This is in accordance with the research results of Ariyanto, et.al (Ariyanto et al., 2019), Lestari, et.al (Lestari et al., 2019), Futri, et.al (Futri Basya et al., 2019) where instructional media such as mobile games can be considered valid if the expert conducts an assessment with a valid category and it corresponds to the opinion expressed by Charsky where a product is said to be valid if the product developed is based on strong theoretical rationale and there is internal consistency between the components of the product being developed (Charsky, 2010). This matter according to the opinion of Djamas et al. (Djamas et al., 2018) and Nieveen(Nieveen, 1999) who say if material experts and media experts assess the product in minimal good category, then the product has validity quality.

Number Game has the potential to be used as a learning media in junior high schools, especially in Sungai Penuh City, Jambi. According to preliminary research results from distributing questionnaires in several schools, 92.31% of students have

smartphones, with 84.38% of these smartphones being Android. This large percentage makes the optimization of the use of this media very large. The data was taken from the high school category. 81.10% of students in the middle school category own smartphones, with Android accounting for 88.81% of all smartphones. According to data from low-income schools, 50.69% of students own smartphones, with 92.35% using Android. This means that Number Game can be used in junior high schools in Sungai Penuh City. This application is expected to actively involve students in learning mathematical concepts, thus allowing all students' abilities to be maximized(Qamariah et al., 2017). This is in accordance with the belief that good learning is learning that gives students freedom and choice in constructing their knowledge and can involve the role of students collaboratively in learning groups, able to solve problems individually that produce a project in meeting individual needs (Mehdipour&Zerehkafi, 2013).

4 CONCLUSIONS

Number Game is an android-based instructional edutainment media in learning Mathematics. Number Game is used in this study to aid in the understanding of mathematical concepts and interests. The validation of material and media aspects yielded very good and good results. It is concluded that Number Game is a "valid" instructional edutainment media that can be used in junior high schools.

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Analysis of the Implementation of the Independent Curriculum Program at the Middle School Level Through Mathematics Teaching Modules

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Keywords: Independent Curriculum, Teaching Module.

Abstract: Implementation of independent curriculum problems occur at each component structure and education unit. These circumstances become the focus of the problems that are necessary to find the solution. One of them is the implementation of an independent curriculum through the teacher as means of strengthening the profile of Pancasila students. This study aims to analyze the concept, the advantages of an independent curriculum, and the implementation of the independent curriculum through the teaching module as the meaning of strengthening the profile of Pancasila students. This study uses a qualitative approach. The informants of this study are chosen by using a *purposive sampling* technique. The data collection process is carried out with deep interviews, documentation studies, and field notes. The data analysis is carried out by referring to the Miles and Huberman model. To ensure the validity of the researcher's data, the researcher uses the triangulation technique and upgrades the researcher's persistence in analyzing the document found. The results of the research show that the concept and the advantages of an independent curriculum are that the material is simpler and deeper, more independent for students, educators, and education units, and more relevant and interactive in strengthening the profile of Pancasila students. The implementation of the teacher's teaching module in learning is to pay more attention to individual diversity so that the students' talents and interests are noticed.

1 INTRODUCTION

Independent curriculum according to the National Education Standards Board is a learning curriculum that refers to the talents and interests' approach. Independent curriculum was issued by Indonesian government through long episodes rolled out by the Ministry of Education. In the first episode, the independent curriculum discusses about the replacement of National exams, the termination of national-ranged school exams (USBN), the simplification of lesson plan and the acceptance of new student based on zoning. In the 5th episode, the government issued and riving teacher (Nailyl Maghfiroh, 2022);(Kemdikbud, 2022).

Many models and variations were implemented by each school that was begun with survey electronically done by the education authorities where the options of the implementation of the independent curriculum are independent sharing, self-changing, and

independent learning. Those third choices submitted to school previously through opinion polls or survey needs related with what to be the potentials as well as the readiness of every school in implementing the curriculum. At the highest level, the implementation of the independent curriculum is in the third option, which is the independent sharing. Every school that chooses independent sharing program will apply independent curriculum by developing the teaching device where this activity started a driving teacher in the school. Independent changing in independent curriculum means that where teacher in the school will develop or take existing teaching device developed and adapted with the school's needs. Meanwhile, the simplest choice for independent curriculum that is with the choice of independent sharing where some parts from independent curriculum principle can be applied permanently by using 2013 curriculum without replacing it completely. The various applications done by every school with the same educational level naturally will

raises difference later to the learning results that will be obtained by each student with the same educational level (Fajri, 2019).

In the implementation of independent curriculum, the central government delivers fully the implementation of management and assistance to the local government by pointing as well as facilitating with people who already designated at the center to become the main companion toward changes, which involved driving teacher. Driving teacher are teachers who have follow training for 9 months with activities arranged systematically so that later there will be capable teachers that can be a motivator as well as a catalyst to the change that want to be achieved in independent Curriculum. Survey shows that in West Sumatra, the numbers of driving teachers are not many. Every school of course applies the implementation of independent curriculum but on the option of independent sharing only a number of new schools that have a driving teacher so that the school can operate independent sharing as well. This finding raises the gap in between educator, student, and school. Based on that, it will impact to the student's study results later nationally (Safrizal, 2022).

The implementation of independent curriculum carried out in West Sumatra will give good impact if it is applied well. This thing can occur if every teacher follows training implementation and apply in learning pretty well. The problem aside also happens in schools that do not have a driving teacher. The spread and the equity of driving teacher training must become government's attention so that all teachers and schools are capable to implement independent curriculum pretty well, so students will obtain the appropriate education results with the expected independent curriculum. Based on that thing, the aim of this writing is for analyzing the implementation of independent curriculum through teacher's teaching module for strengthening the profile of Pancasila students.

2 METHOD

The method used in this study is qualitative approach with the type of the research is in the form of content analysis. This study is conducted by building and describing the concept studied naturally and facts found in the field, so that credible and accessible data can be accounted scientifically. The informants chosen in this study were chosen by using purposive sampling with criteria in accordance with data requirements. The technique used to choose the informants is the informants that are capable to serve

description related to the implementation of the independent curriculum through driving teachers and non-driving teachers for strengthening the profile of Pancasila students. The data collection was carried out based on interview that related to what the driving teacher and non-driving teacher as well as how every teacher develops module in accordance with the students' talent desired in the independent curriculum. Besides deep interview, the document that related to the implementation of independent curriculum was further analyzed and done by referring to the Miles and Huberman model so that it can ensure the data validation is carried out within deep understanding and accuracy related to the program document of the implementation of independent curriculum through driving teachers proclaimed by the Ministry of Education and Culture (Creswell, 2013); (Miles, 1994); (Sugiyono, 2018).

3 RESULTS AND DISCUSSION

The research findings obtained from various sources and information obtained from the informants, and it will be explained the analysis of the results related to the implementation program of independent curriculum, that is the concept and the advantages of independent curriculum, the implementation of independent curriculum through teacher's teaching module in learning.

3.1 Independent Curriculum Concepts and Advantages

The draft about the implementation of independent curriculum as the data analyzing results has been collected through key information nor key content scattered in various sources and obtained from internet through numbers of concepts about the implementation of independent curriculum.

According to the definition of independent curriculum based on National Education Standards Board, independent curriculum is a learning curriculum that the implementation refers to students' talents and interests' approach. Independent curriculum is the continuation of the direction of previous curriculum development such as 2006 curriculum, 2013 curriculum, emergency curriculum, prototype curriculum, and other previous curriculums. The red thread of this curriculum development are: the first were the holistic orientation where the curriculum designed for developing holistically take in intelligence and academic skill, non-academic spiritual, and social emotional

cognitive competence. The second one are the bases on development of the independent curriculum but the competence is not the content to refer the designed curriculum based on desired competence that want to be developed and not based on content or certain theories. The third is that the independent curriculum is more contextually and personalization in which the curriculum designed in accordance with the local culture context, the school's vision and mission, the local environment and the students' needs.

There are three superiorities of independent curriculum: the first is that the independent curriculum is simple and deeper where the focus is on the essential material and the competence development of the student at each phase and expected to be deeper, meaningful, no rush and fun. The second superiority of the independent curriculum is more independent. Independent here means that students can choose the subject in accordance with their interests and talents. Meanwhile, the teachers can teach in accordance with the achievement and development level of the students whatever the teachers designed. In learning, the teachers are independent by considering important how the students in learning can study well. Furthermore, the education unit can also be independent that means the education unit has authority for developing and managing curriculum as well as learning in accordance with characteristics of the education unit and the students. The third superiority of the independent curriculum is relevant and interactive where the independent curriculum gives opportunity for school to develop its superior program that will be conducted through project activities where through this project activities give more opportunities to students for exploring actively about the actual issues for example environment issues, health issues, culture issues and others where each issue is developed through the project can develop the character and the competence of the profile of Pancasila students.

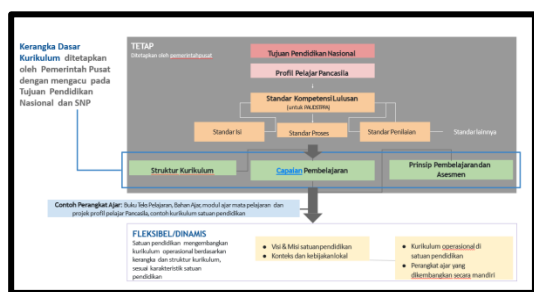


Figure 1: Basic Framework for the Independent Curriculum.

Viewed from the framework of the independent curriculum in figure 1 is known to be the national goals level and profile of Pancasila students were set by the government centrally. Meanwhile, the content standards, process standards and evaluation standards and other standards uniformly also determined by the government centrally. Then each education unit can design how the curriculum structure can be achieved in accordance with the learning achievements formulated in school's vision, mission principles learning as well as the assessment. The learning achievements are developed by each teacher with refers to vision and mission of the education unit. The context and local policy is also the main thing that must be noticed in developing the learning achievements.

The structure of the independent curriculum has peculiarity from curriculums that existed before. On the independent curriculum, the most prominent characteristics to surface especially at the junior high school level which is in the independent curriculum is conducted by the adjustment to the development of digital technology. Informatics subjects becomes the subject required where previously in the 2013 curriculum informatics subject was deleted and merged to other subjects with no time allocation specially for the informatics subject. Then, in the independent curriculum, there is project-based learning for strengthening the profile of Pancasila students that is conducted at least three times in a year or three times every school year.

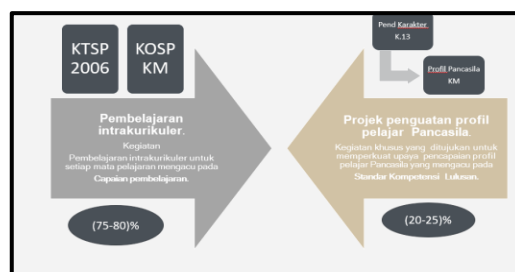


Figure 2: Analysis Results of Structure of Independent Curriculum.

The curriculum structure in the independent curriculum were at least having two big components to be main part of the independent curriculum. Based on Figure 1. it is known that in independent curriculum there are intracurricular learning and projects to strengthen the profile of Pancasila students. On the first point, there is intracurricular learning where every subject refers to learning achievements with the learning time weight is 75% to 80% of time or the total time provided for every learning subject. The material of the subjects of the

title of the learning at the junior high school level are not too many namely religion, Pancasila, Indonesian literature, Mathematics, Science, Social Studies, Physical education sports and health, Informatics, Art and English. In independent curriculum, intracurricular learning is arranged in operational curriculum of the education unit. The operational curriculum of education unit in the independent curriculum has similarity with the previous existing curriculum which is the level of the curriculum from education units that was issued and used in 2006 for the operating curriculum of education unit in independent curriculum developed by operationalizing the vision, the mission of education unit and the local culture context. On the education unit level curriculum that existed in 2006, the teaching tools were developed by each teacher in accordance with the education unit characteristics (Ansyar, 2015). Now the independent curriculum is also designed by each teacher in accordance with the talents and interests of each student in strengthening the profile of Pancasila students (Sayyidi, 2020).

The second component in the independent curriculum structure is the strengthening project of the profile of Pancasila students, it is a particular activity designated specifically for strengthening the effort to achieve the profile in learning Pancasila that the results finally later will refer to the competence standard of the graduates. In the independent curriculum there is local content that become the typical characteristic of the curriculum where the education unit can add the local content set by the local government in accordance with the local characteristics. The education unit can add the additional content in accordance with the characteristics of the education unit history flexible through three choices; first, the education unit can integrate to the subject. For example, in learning mathematics, we integrate the local content with the local cultures for example with traditional house, local craft named songket or Minangkabau carvings that is known with mathematics term that refers to ethno math. These conduct the integration to the theme of strengthening project for the Pancasila profile as an example for the program like "Baliak ka Surau". The third, the education unit can develop subject which stands alone, for example in Bukittinggi there is Minangkabau natural culture learning that becomes the school subject.

In the independent curriculum, we know with term learning achievements. Learning achievements is a target that must be filled by the students when learning intracurricular subject. Learning achievement is learning competence that must be achieved by the student at every phase started from

foundation on Early Childhood Education for basic and intermediate education. The learning achievements arranged for every learning. This thing refers to decision of Minister of Indonesia number 56/M/2022 concerning the curriculum application guidelines in order to recovery learning. The government only set the final goals and the phase time whereas the education unit have discretion to determine the strategies and methods or plot for reaching it in order to determine the required appropriate strategy.

There are 5 components of the learning achievements; the first is the subject rational, the second is the goals of lesson, and the third is the subject characteristics, the fourth is the subject achievements in every phase overall, and the fifth is the achievement of every phase according to the element.

Education unit operational Curriculum developed to show suitability with the characteristics and the needs of the students in the local and education unit. In the development and the management of operating curriculum, The Education Unit includes whole stakeholders' interest that consist of students, committee school and community. Principle development operations curriculum in the Education Unit with at least the first 5 points must be centered to participating in education that is learning the must Fulfill diversity potency needs development and stages study as well as interest participant educate. The profile of Pancasila students always becomes referred to each step in drafting operational school curriculum. Both must be contextual which means that it shows peculiarity and characteristics unit of the social context and work and industrial environment that shows characteristics from study participants in the area. Third principle is developing curriculum to load essential information or the main thing that is needed and used for Education unit. Language must be used straightforward to concise acknowledgement. which leads us to the fourth principle that develop independent curriculum that is accountable and mean that it could be held accountable by data-based and actual occurrence. While the fifth involves various stakeholders' interests.

3.2 Implementation of Independent Curriculum Through Teacher Teaching Modules in Learning

Teaching tools are various materials used by educators or inner teacher effort reach profile Pancasila students and achievements learning. Teaching modules include book text lessons, teaching modules, reinforcement projects profile Pancasila

students, examples curriculum operational Education units, learning videos as well as forms other.

According to Nana Sujana, module is a completed tool measurement where the learning module have roles and tasks in the independent manner because it could use for units and all other units .(Wijaya, 1988).Leaning module could interpreted as study planned through the planned activity at a time arranged in a systematic manner. Whereas teaching modules in the curriculum independent is number of Tools or facilities, media, methods, instructions and guidelines designed in a manner systematic and interesting. The teaching module is implementation from plot destination developed learning from achievements learning with profile learn Pancasila as the target.

The teaching module is a document that contains objectives, steps and learning media as well as the required assessment in one unit or topics based on plot destination learning. Destination development teaching module is to help educator in doing learning. Educators have independence for choose or modify teaching materials that already provided by the government through the independent platform.

There are some eligible criterion owned by the existing teaching modules :1. Essential, it means understanding draft from every eye lesson through study experience and cross discipline, 2. Interesting, meaningful and challenging where the results of the teaching modules must grow interest for learn and engage education participants with the active manner on learning process, 3. Relevant and contextual, it means to develop teaching modules that related with knowledge and experience possessed before with the time context and place at the fourth serial that must owned by learning for continuity which means plot activity in accordance with study participant education.



Figure 3: Components of the Independent Curriculum Teaching Module.

Kindly, general teaching module has three components: 1. Information, 2. Components and 3. Attachments. General information contains writer’s

identity from the module, profile of Pancasila students, targets and infrastructure, target for education participants and learning models used for reaching destination of the expected learning process. The core component of study consists of destination learning, assessment, experience meaning, question lighter, activity reflection participant study and reflected educator. Component from attachment teaching module includes from sheet work material, enrichment educators, students, glossary and bibliography. Broadly speaking, third component arranged in a manner systematic and owned by students and developed by the participants themselves to educate participants characteristics that they taught.

Teaching modules are arranged in accordance with phase or the steps of students’ development that considers what is learned with destination learning and based development period long. Independent educator can adapt teaching module from students’ characteristics or by arranging an appropriate standalone teaching module with students’ characteristics. existing LKPD in teaching module can created educator so that they will be capable to accommodate various student needs.

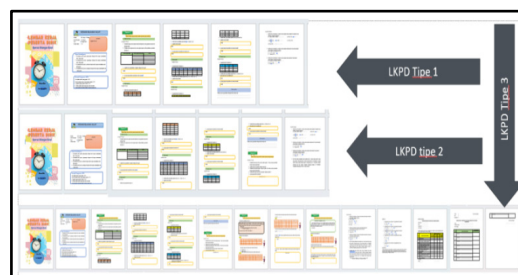


Figure 4: LKPD according to student needs.

Based on figure 4 above we can conclude that in developed teaching modules, the driving teachers were arranged by 3 kinds of LKPD used in learning. LKPD type 1 is given to students with ability that contains main question in the LKPD. LKPD type 2 is given to current capable students so that it will help with the task hook while LKPD type 3 is given to student with low capability. For students in this case, LKPD is compiled in a manner systematic so that the main tasks is described more detail and to become more sub item complex so that students with low capability can complete tasks on LKPD with a decent amount of level with students that has a good capability(Nari, 2017); (Putri Indah Sari, 2021).

4 DISCUSSION

Findings on the study result shows that implementation of independent curriculum to be something mandatory that conducted for resolving various weaknesses in the curriculum previously so that every student fulfilled rights and freedom in education, however directed with well by the teacher with appropriate utilization of the teaching module by students' characteristics. Various components and structures available in independent curriculum were capable to develop students competency through intracurricular learning and reinforcement profile of Pancasila students through the possibility of integrated activity project with eye lesson or stand up alone so that generated strong student in a manner academic and own character in accordance aspects expected by the profile Pancasila (Sayyidi, 2020)students ; (Ihsan, 2022).

In the previous text, it already outlined that independent curriculum draft already gave superiority because it is more simple and deep by the amount of the theory learning that seems more simple because physics, biology, history and geography on curriculum were previously merged into science learning in the independent curriculum, however payload theory had taught deeper and contextual so that it will capable to generate a project for strengthen profile of Pancasila students from students. In implementation of the independent curriculum, students must choose one certain major but given the freedom in accordance to their talents and interests. So is the teacher, in terms of their chose material to their teaching methods and process, each teacher is given freedom to design it alone the teaching module in accordance characteristics material and characteristics participant the students he teaches with especially formerly identify participant educate through question designed lighter at the beginning learning. Question lighter could form diagnostic test so with results test the teacher is able group student in accordance ability, method learning, talent as well as each other's interests. From the results the diagnostic test the teacher can design appropriate LKPD needs participant educate(Hattarina, 2022); (Putri Indah Sari, 2021); (Hadi, 2015).

In learning mathematics there is some steps you can conduct to students in solving problem, for one according with the polya description to understand problem, make plans, implement plan and check return correctness answer (Fariha Mpar August, 2021); (Netriwati, 2016); (Astutiania, 2019). For students with decent capability, LKPD is designed for direct main tasks with an example like what is the volume of the block with its known elements. For

students with low capability will be given additional question for more simple acknowledgment on student with the help of solving problem steps according to polya. Based on student characteristics difference just now, more independent teachers that designs worksheets on appropriate teaching modules for students. The next superiority in the independent curriculum are the developed materials and projects that are more relevant with students nor learning environment, and more interactive. From the clear exposure that independent curriculum implementation has is something that is mandatory held with priority main which were the students and driving teachers.

If implementation of the independent curriculum could be implemented pretty good, it might become a decent change towards students nor educator. Students could learned pretty well through capable driving teachers as they becomes good locomotor for capable move towards the student for study through designed teaching modules in accordance with needs and in the end will formed understanding meaning for students, shaping characters, strengthening the profile of Pancasila students and will give a good end cognitive results for students(Kahfi, 2022).

The limited research by understanding related implementation of independent curriculum in middle school; through teacher means as a solution for develop and prepare students quality and reinforcement of the profile of Pancasila students in face progress of time, so correlated with the resulting driving government through special training for capable and appropriate learning designs with Indonesia's education target and strengthening the profile of Pancasila student. The research weakness to this is that it's pretty much limited to execution conducted interviews through perceived online suboptimal, however with studies of the document that is done, it becomes a gap for held more study. Study about implementation of the independent curriculum through reinforcement programs for the profile of Pancasila students and its influence were to be formatting the character profile on Pancasila students which leads to the topics of study interest for described in the research so that it could enrich outlook knowledge and depth knowledge related with implementation of independence curriculum to begin with held in the beginning year of its implementation.

5 CONCLUSIONS

The implementation of Independent Curriculum as proclaimed by the Minister of Education and Culture


becomes means of improvement and development sustainable education unit especially the students and educators. This can be seen from the concept and the advantages of independent curriculum, the implementation of independent curriculum through teacher's teaching module as well implementation in learning.

Related to the implementation of the independent curriculum, the sustainable monitoring and coaching by the central and local government can be done in accordance concept that has been developed so that there is education equity, achievement of the goals of national education and reinforcement of the profile of Pancasila student.

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Data Literacy of Prospective Physics Teacher Students in Stem Learning

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Keywords: Data Literacy, Prospective Physics Teacher, STEM Learning.

Abstract: The solution to a problem, among others, requires identifying and collecting, processing, and interpreting data. This process involves data literacy skills. Data literacy is one of the hidden variables in the physics learning process, and only a few are analysed. This study aimed to assess the data literacy possessed by prospective physics teacher students. The research uses a case study research design. The scope of the research is on prospective physics teacher students taking electric-magnetic courses at the Physics Education Department, Siliwangi University, in the 2022/2023 academic year. Data analysis used descriptive statistical analysis. Data Literacy in this research consists of data introduction, data collection and recording, data analysis and interpretation, data communication, and data use. The context of this data literacy study is the search for a solution to the problem of contamination of combustion smoke in the chimney by applying the concept of physics. The findings are that students' data literacy is still at the primary and intermediate data literacy level. The remarkable thing that needs attention is data literacy in the aspects of data recognition, data interpretation, data collection, and data use. These results mean that students still need to be more to identify data according to the problem, categorize data according to its use to solve problems, make connections between the results of data analysis, and use data to provide arguments. The findings of this study can be the basis for developing a learning program that involves data literacy training.


1 INTRODUCTION

Data literacy is a hidden variable/hidden curriculum in physics learning. Science process skills may have become a general topic/study in Physics learning. Data literacy also intersects with Science Process Skills, especially regarding data collection, analysis, visualization, and interpretation. Data literacy requires meaning and the impact of using data on people's lives, both from natural and social knowledge. It is the meaning and use of data that differentiate Data Literacy and Science Process Skills. Data literacy must be identified as a hidden variable/hidden curriculum at the university student level.

Identification of data literacy at the university student level needs to be done because students are expected to be able to solve problems, think critically, and make decisions based on valid and reliable data. These abilities need to be possessed in an interdisciplinary context and able to be applied in the

context of social life. This data literacy is helpful as a basis for building a data-based society. Recognizing misinformation and disinformation becomes more complicated if the data literacy level of students is unknown, especially during a post-pandemic situation (Schreiter et al., 2022). In addition, data literacy can also be the basis for other literacy, i.e., scientific literacy. Students with data literacy skills will have more potential to understand data patterns presented in scientific studies and be able to predict and utilize scientific knowledge. Thus, it is necessary to do research related to student data literacy.

Data literacy research is more commonly carried out in studies of Computer Science and Informatics, Mass Media, Environmental Science, and Library Metadata (Wolff, Gooch, Montaner, Rashid, & Kortuem, 2016, Wolff, Wermelinger, & Petre, 2019, Pangrazio & Sefton-green, 2020, Deahl, 2014). Wolff researched data literacy to uncover learning principles that train data literacy. Wolff uses the context of the position of solar panels in each house

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in a residential area on energy consumption. The actual results from Wolff are the principles of data literacy learning, including learning that needs to involve complex data, interesting teaching materials, and STEM learning situations. Research by Mandinach & Gummer (2013) and Schildkamp, Lai, & Earl (2013) states that good data literacy helps educators plan and implement learning. Gasevic, Dawson, & Siemens (2015) added that if used effectively and ethically, data is an essential part of education, for example, in giving feedback. Pangrazio & Sefton-green (2020) and Bhargava et al. (2015) also emphasized that data literacy will impact technological innovation and positive societal changes.

Research on data literacy in physics is still less significant than in metadata and informatics. In addition to these gaps, data literacy in the context of STEM education, especially at the university student level, has yet to be explored too much. This research will enrich data literacy research in education, especially physics education in the STEM context. The STEM context in this study was that students were asked to provide alternative solutions with physics concepts for air pollution from combustion chimneys. Students are asked to provide a solution so that the solid particles in the smoke are not released freely with the smoke gas phase. After getting a potential solution, students are asked to expand the effect of using data on society.

This study aims to reveal the data literacy of prospective physics teacher students. This research will see to what extent physics education students utilize the concepts and laws of physics to solve problems in the context of air pollution from chimneys. Knowing the position of university students' data literacy can help design learning programs, media, teaching materials, or learning models that support data literacy.

2 METHOD

These case studies reveal the data literacy of physics teacher candidates at the Department of Physics Education, Siliwangi University, who are taking the Electromagnetics course for the 2022/2023 academic year. The case study method was chosen because it wanted in-depth data about data literacy for a certain period. This research can be called a one-shot case study because the timeframe is only two weeks and only one problem context. Case studies are also helpful when the group being studied has a different context from others' research. The context of this

research is the problem of air pollution originating from chimneys. Students are asked to provide a solution so that the solid particles in the smoke do not spread freely along with the smoke gas phase. The collection uses task assignments related to the problems given earlier. In addition, questions and answers were conducted regarding the problem-solving process. Data analysis used descriptive qualitative, which was carried out on the problem-solving process by students.

3 RESULT AND DISCUSSION

This case study has studied the data literacy of prospective physics teacher students at Siliwangi University. The prospective physics teacher students in this case study emphasized that the physics concepts learned can and must be used to solve problems. From the problems given to students, they initially worked in groups to brainstorm about separating the solid and gas phases in the smoke coming out of the chimney. Then the students do independent work to solve problems through task assignments.

Student data literacy is seen in Data Recognition, Data Collection and Recording, Data Analysis and Interpretation, Data Communication, and Data Use (Sujarwanto, Madlazim, & Ibrahim, 2022). The remarkable thing that needs attention in this case study is data literacy in the aspects of data recognition, data interpretation, and data use. Data literacy owned by students has varying levels for each component.

Data recognition is crucial before going further in problem-solving. Data recognition is also a starting point for data literacy. The introduction phase is essential in problem-solving (Sujarwanto, Hidayat, & Wartono, 2014; Fakcharoenphol, Morphew, & Mestre, 2015; Good, Marshman, Yerushalmi, & Singh, 2018; Good, Marshman, Yerushalmi, & Singh, 2020) and in data literacy (Wolff et al., 2019; Gibson & Mourad, 2018). Students, in this case, study have a Data Introduction level at the Intermediate level. It is characterized by being able to predict the variation of available data, being able to identify appropriate data for solving problems, but not being specific about the type of data, for example, related to specific pollutant sources of Ozone, SO₂, or CO. Data introduction by students is shown in Figure 1.

Tentukan data apa saja yang diperlukan untuk menjawab pertanyaan diatas:

Jawab:

- Data lingkungan dibareng pabrik tentang udara di daerah sekitar sudah tercemar atau belum.
- Penyakit pencemaran udara.
- Sumber pencemaran udara.

(a)

Masalah yang dapat timbul dari penggunaan cerobong asap serta asapnya : (PABRIK KARET)

Data yang diperlukan :

- Zat-zat kimia yang terkandung dalam karet.
- Jarak antara pabrik karet dengan rumah atau pemukiman.
- Dampak yang ditimbulkan akibat cerobong asap pabrik karet bagi lingkungan sekitar.
- Cara menanggulangi pencemaran dari cerobong asap pabrik karet.

(b)

"Masalah yang dapat timbul dari penggunaan Cerobong asap serta asapnya pada Pabrik Semen"

Data yang diperlukan :

- Jarak antara pabrik semen dengan rumah / pemukiman
- Dampak yang ditimbulkan akibat cerobong asap Pabrik semen bagi lingkungan sekitar
- Cara menanggulangi pencemaran dari cerobong asap pabrik semen.
- Zat-zat kimia yang terkandung dalam emisi udara semen
- Menentukan tingkat kebocoran asap

(c)

Figure 1: Data Recognition by Students.

Figure 1 shows students can predict and identify the data needed to solve problems. Students propose the data about environmental air quality data around settlements, sources of air pollution (Figure 1a), chemicals in smoke, and the distance of pollution sources from settlements (Figure 1b and Figure 1c).

Data collection is characterized by knowing how to use tools and technology to collect, store, integrate, manage, and check the correctness of data. From a series of these characteristics, aspects of data collection owned by students are at the primary level. It was indicated by mentioning the tools and their functions used to obtain data sources but did not specifically mention the working principles of the tools. Figure 2 shows the data collection aspect of the task assignment. Students have been able to name tools that support data collection to solve chimney air pollution problems, for example, opacity meters to measure smoke density (Figure 2a), utilizing sensors on smartphones and impingers (Figure 2b), and a spectrophotometer (Figure 2c).

Alat yang digunakan untuk memperoleh data :

- Alat ukur tingkat kepekatan asap (Opacity meter) terdiri dari filter skala ukur kepekatan asap, lensa, badan dan karet pelindung mata. Filter skala opasitas di buat dengan pewarnaan blok dengan gradasi kepekatan berjenjang 0-100%. Cara menggunakannya yaitu alat ukur kepekatan asap (Opacity meter) digenggam dengan salah satu tangan dan diarahkan dari depan mata menuju bagian pangkal asap yang terlihat diujung cerobong.

(a)

Alat yang digunakan untuk memperoleh data :

- Smartphone berbasis Windows Phone, merupakan aplikasi pengukuran tingkat kepekatan asap dan pencatatan data. Tingkat kepekatan asap diambil berdasarkan tingkatan pada Pimgelmann Smoke Chart yang memiliki verticle, distance terendah terhadap citra asap.
- Meteran, merupakan alat yang berfungsi untuk mengukur jarak pemukiman dari pabrik industri semen.
- Impinger, merupakan alat yang digunakan untuk melakukan pengambilan sampel udara baik udara lingkungan industri, pertekunan dan pemukiman.

(b)

Bagaimana memperoleh data tersebut? Alat apa yang digunakan untuk memperoleh data tersebut? Bagaimana prinsip kerja alat tersebut?

Jawab:

Pengukuran gas SO₂ dilakukan menggunakan menggunakan metode turbidimetri dengan alat spektrofotometer di laboratorium Balai Hipertek Surabaya.

(c)

Figure 2: Description of Data Collection by Students.

Data interpretation is a challenging aspect of data literacy (Glazer, 2011; Edwards et al., 2017). Incorrect interpretation of data can lead to errors in decision-making. Interpretation of data owned by students is still at the primary level. The characteristics shown at the basic level of interpretation are that the majority have not been able to interpret in-depth but only explain/re-describe the data obtained and cannot provide models or compare analysis results. The results of data interpretation are shown in Figure 3.

Interpretasi Data

- Industri semen merupakan salah satu penyumbang potensi udara terbesar didunia karena tingkat konsentrasi energi dan potensi emisi debu.

(a)

Dari data yang diperoleh, coba interpretasikan kumpulan data tersebut!

Jawab:

- Data lingkungan: mengunjungi sat beach agar bisa mengetahui kualitas udaranya tercemar atau belum dengan menggunakan alat Air Quality meter.
- Sumber pencemaran udara bisa berasal dari pabrik.
- Penyebab pencemaran udara kabut asap dari cerobong asap pabrik.
- Jenis pencemaran udara, partikel padat, nitrogen dioksida, sulfur dioksida.

(b)

Figure 3: Data Interpretation by Students.

The use of data is not only limited to scientific inquiry and giving arguments but also connecting data with scientific or social issues and knowing the impact of using data on society (Gibson & Mourad, 2018; Sujarwanto et al., 2022). In the aspect of data usage, students are at the intermediate level. It was marked by being able to describe data presentations (tables and graphs), providing/suggesting problem-solving using physics concepts, relating to science but not yet to social utilities, and the solutions put forward by the majority of students using a centrifugal and electrostatic deposition. The results of using data from students are shown in Figure 4.

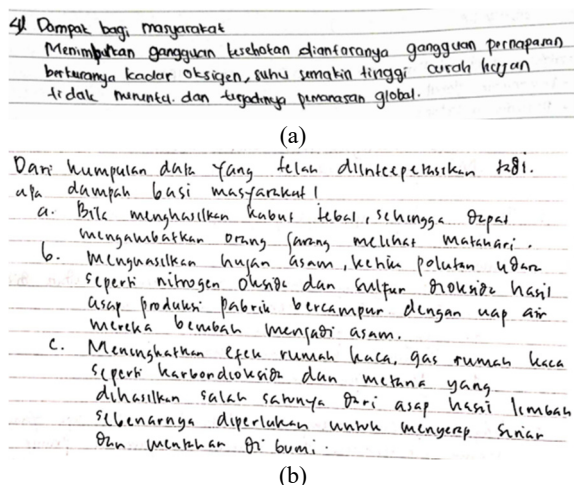


Figure 4: Description of Data Usage by Students.

Recognizing data and its sources is an essential aspect of data literacy. Students are still at the primary and intermediate levels when data literacy is associated with the chimney problem project because the problem is less contextual. This results because students' prior knowledge needs to be improved to carry out the process. Thus, if a learning process aims to increase data literacy, the data context must be close to students. It follows the suggestion by Wolff et al. (2019) and Sujarwanto et al. (2022). In sustainable development, data literacy results in pollution through chimneys are supported by the research of Ridwan, Kaniawati, Suhandi, Samsudin, & Rizal (2020). The research stated that students are aware of sustainable development but are less effective in practical skills related to sustainable development.

Interest affects the components of data usage. Because the student's background is physics and science, students associate the use of data and problem solutions with the science field, namely environmental pollution, the greenhouse effect, and

health problems. Nothing has yet been linked to economic and policy aspects. It is supported by cognitive theory for situational interest type motivation Moreno (2010) and the research results by Wolff et al. (2019).

4 CONCLUSIONS

The results and discussion show that students still need to be improved in identifying data according to the problem, categorizing data according to its use to solve problems, making connections between the results of data analysis, and using data to provide arguments. The findings of this research can be the basis for developing learning programs that involve data literacy training.

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The Role of Technological Pedagogical Content Knowledge in Analyzing the Adoption of Constructivist Thinking in Primary-Level Mathematics Education

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Keywords: TPACK, Constructivist Thinking, Mathematics Education, Primary School.

Abstract: This study aims to describe the utilization of Technological Pedagogical Content Knowledge (TPACK) as an appropriate strategy for examining the implementation of constructivist pedagogy in the context of mathematics education at the primary school level. The present study employs a qualitative research design, specifically a phenomenological approach. The study was carried out at SD Negeri 25 Lubuh Lintah. The data collection techniques employed in this study include observation, interviews, and documentation. The teacher must facilitate a pedagogical approach allowing students to discover and understand basic concepts independently. Learning is still dominated by the teacher, who primarily provides notes. Students only copy notes written on the whiteboard by the teacher. It affects the stimulation of their minds, which is less productive. The findings of the analysis on applying constructivist ideas in mathematics in primary education indicate that the learning activities being implemented do not follow the basic principles of constructivist pedagogy. Implementing technology pedagogical and content knowledge (TPACK) models for teachers or educators is the best way to overcome the learning challenges teachers and students confront.

1 INTRODUCTION

Education plays a crucial part in every aspect of human existence and directly affects how a person develops in every aspect of his personality. According to PAI Admin (2019), philosophy offers guidance and a systematic approach to educational practice, whereas educational practice offers subject matter for philosophical contemplation. One perspective that has influenced the field of education is the concept of constructivism. The philosophical school of constructivism significantly influences various concepts within science, learning theory, and the learning process. Constructivism, as the fundamental concept of the learning paradigm, points out the imperative of active engagement for students in learning, in which they construct their knowledge through real-life situations (Umbara, 2017).

The philosophy of Constructivism emphasizes the capacity for adaptation, as highlighted by Yusdita et al. (2022) in their research. They argue that constructivism requires individuals, including students, to utilize their abilities to effectively adjust to the evolving demands of educational progress

following current circumstances. In this scenario, students must show a higher engagement than the teacher. Students ought to be able to acquire knowledge independently rather than relying solely on transmitting information from the teacher. The author's research (Waston, 2014) highlights the significance of creativity and activeness as the primary mechanisms employed in the search for a fulfilling life. The constructivist educational approach places a significant emphasis on the active involvement of students in initiating their own learning experiences. The philosophy of constructivism is a scholarly discipline that explores the concept of knowledge as a process of self-construction. According to this perspective, individuals develop their understanding through active engagement with various entities such as objects, phenomena, experiences, and their surrounding environment. According to Nurhidayati (2017a), constructivism is a theoretical framework that involves the assimilation of knowledge derived from concrete experiences, facilitated by collaborative activities, and improved through processes of reflection and interpretation. Hence, it

can be observed that students have varying conceptions of knowledge, which are dependent on their individual experiences and the particular interpretive frameworks they employ.

The basic principle of constructivism is that all knowledge is constructed not for direct perception by the five senses but rather for interpretation by the human brain. Knowledge itself is nothing more than an accumulation of prior experience. This claim was confirmed by the author's research (Nurhidayati, 2017a), from which it can be inferred that the basic principle of the constructivist education of thought is that all knowledge is created rather than directly perceived by the senses (smell, touch, hearing, touch, and so on), contrary to what realists generally believe. (Haryanto, 2012) claims that thought is subjective in his work. As a result, according to the constructivist school of thought, knowledge is created via understanding and experience. The constructivism philosophy is influenced and more readily identified by the name "The Paradigm of Clutter" since the nature and outcomes of subjective thinking are unknown and depend on each individual.

The constructivism theory must collaborate with other concepts, such as the relationship between social interaction and biologically active learning, to be effective in practice. This statement is supported by research (Nurhidayati, 2017b), from which the author can draw the following conclusion: "There is no single theory of constructivism, but there are at least two main ideas that are the same; first, active learners are, biologically speaking, engaged in creating their knowledge; and second, social interaction is a crucial component in the creation of knowledge. Consequently, these two components lead to a person's behavior.

It is consistent with mathematics, which studies many abstract structures and their connections. For students to fully understand the abstract structure of mathematics, practical principles must be used during the learning process. The idea that arithmetic instruction should be relevant may be applied to learning, particularly in primary schools. It aligns with the constructivism education theory, which holds that there are two learning processes: teaching and learning.

According to constructivism, learning primarily focuses on helping students give meaning to what they are taught using their prior knowledge and understanding. By supporting the teacher's creativity as a learning mediator, more focus is placed on creating meaningful connections between prior knowledge and new knowledge in this process. According to the constructivist model of learning,

students prior information and ideas are modified to create new knowledge (Sani, 2013).

According to a constructivist perspective on learning, numerous key factors affect a learning activity's success, including (von Glaserfeld in Pannen et al., 2001: 3): a) The teacher's function as a mediator and facilitator in a variety of tasks: (1) offering educational opportunities that allow students to take charge of their designs, research, and procedures; (2) offering resources that encourage students to think critically; (3) inspiring students and exposing them to conflict; (1) Students are accountable for their learning results. The teacher assists students in evaluating their hypotheses and conclusions. They incorporate ancient knowledge into new learning contexts. (2) Students must have experience formulating and testing hypotheses, manipulating objects, finding solutions to problems, describing, researching, dialogue, holding reflections, expressing questions, and expressing ideas to form new constructions. (3) They must be able to judge what they learn by looking for meaning and comparing it to what they already know (Umbara, 2017).

Constructivism defines teaching as assisting a student in creating his knowledge. Teaching is not about passing knowledge from those who already know it (teachers) to those who do not (students), but rather about assisting someone in building their knowledge through activities related to the phenomena and objects they are interested in learning about. According to the constructivist viewpoint, several tasks need to be completed, and some ideas that the teacher has to be conscious of when instructing, such as: a) the instructor needs to engage with students frequently to understand what they already know and believe more fully. b) To involve students, goals and what will be made in class should be discussed. c) Teachers must comprehend which learning opportunities best meet the demands of their students. Participating as a student among other students is one way to accomplish this. d) Assistance with kids who are having difficulty learning is necessary. e) Teachers must be flexible in their thinking to comprehend and value students' ideas since sometimes students form opinions based on premises that the teacher does not share. According to constructivism, there are three main components of teaching: a) adaptation, which is accomplished through assimilation and accommodation; b) concepts in the environment; and c) the creation of meaning.

According to Piaget's theory of intellectual development, children in elementary school (6 - 12

years old) are in the concrete operational phase, characterized by high curiosities and special sensitivity in developing knowledge, skills, awareness, and attitudes (Marina, 2020). This line of constructivism is consistent with this theory. It is believed that integrating constructivism's principles with the characteristics of primary students can boost students' engagement and innovative thinking during the learning process. However, during its implementation at SD Negeri 25 Lubuk Lintah in grades 4, 5, and 6, the teacher's position was not yet recognized as a mediator and facilitator in the learning process.

The teacher has not provided the students with a learning opportunity that allows them to be in charge of studying the topics on their own. By merely providing notes, the teacher still controls the learning process. Only notes written by the teacher on the board are copied by the students. It undoubtedly affects how productively their brains are stimulated. According to constructivism, learning activities must allow students to gain experience by creating, testing, and manipulating hypotheses, solving problems, seeking solutions, describing, researching, holding dialogue, asking questions, and expressing ideas to create new constructions. By developing their pedagogical skills, teachers should be able to overcome the obstacles to applying this learning. Teachers can create learning activities customized to their students' needs or skills by mastering pedagogical competencies, and they can assess how well they are implemented (Nurhamida, 2018).

Learning demands in society 5.0 cannot be separated from the role of technology, communication, and information to confront the times, in addition to the need for teacher abilities in teaching or high pedagogical competency. The TPACK (Technological, Pedagogical, and Content Knowledge) paradigm may combine pedagogical and technological competencies to satisfy the expectations of 5.0. Due to its overview of integrating learning material, knowledge, pedagogy, and technology in learning, TPACK as a learning model can help educators become more professional in their teaching (Susilawati & Khaira, 2021). The researcher proposes TPACK as a solution for examining the application of constructivist thinking in primary school mathematics instruction because of the benefits of the model and its consistency with the learning that takes place. This study aims to describe TPACK as a response to the analysis of constructivism thinking's application to learning mathematics in primary schools.

2 METHOD

This study is qualitative and employs a phenomenological methodology. This strategy was adopted because the researcher wished to assess the phenomena that significant informants experienced. The research analyzes phenomena, social behavior, and individual or group thought. The study was conducted in grades 4, 5, and 6 at SD Negeri 25 Lubuk Lintah.

Purposive sampling is the sampling method used. For the findings of this study to apply to math instruction in lower grades later on, considerations for grades 4, 5, and 6 were sampled. It was done to see the phenomena that lead to concept failure encountered by high-grade students. The measures taken to gather data are (a) extending the data collecting time; (b) making regular, serious observations; (c) utilizing triangulation; and (d) involving colleagues in the discussion.

The following are the procedures and methods for analyzing research data: a). researcher completely recounts all phenomena and experiences of research participants; b). researcher identifies the statements (interview findings), describes them, and elaborates on them without repeating them; and c). The researcher identifies the statements (interview findings). The researcher uses all of his creative possibilities to reflect on his ideas, d) the statement is concluded in key sections, and a thorough account of the experience is written; e) the researcher develops all justifications for the significance and the core of the explanation, and f) the researcher summarizes his findings in a written report based on the experiences of all informants.

This study examines the learning and teaching processes in grades 4, 5, and 6 of SD Negeri 25 Lubuk Lintah's use of constructivist thinking in learning primary school mathematics. Interviews and observation sheets were the tools utilized to collect research data.

3 RESULTS AND DISCUSSION

SD Negeri 25 Lubuk Lintah locates at Jalan Masjid Baiturrahman, in the village of Lubuk Lintah, within the Kuranji District of Padang City, located in the province of West Sumatra. The school is situated in the central area of Padang City. The school presents three distinct challenges concerning nature, animals, and humans. The school's location, situated beneath a hill without any surrounding fences, allows

unrestricted access to numerous animal species, contributing to its natural environment. SD Negeri 25 Lubuk Lintah is under the leadership of a single school principal, Etifirza, S.Pd. The school is staffed by eight teachers, three education staff members, and one school operator. SD Negeri 25 Lubuk Lintah has obtained accreditation level C.

Constructivism is a general theoretical framework employed in educational and learning methodologies during its evolution. Constructivism is an epistemological perspective that centers on the active engagement of students in the processes of knowledge creation, interpretation, and reorganization, thereby emphasizing the individualized nature of these cognitive activities.

The constructivist approach is the foundation for numerous educational principles and movements, including emphasizing active student engagement in the learning process and cultivating independent learning skills among students. There is a growing recognition of the importance for students to possess the capacity to cultivate their knowledge independently. Additionally, there is a corresponding recognition of the role that teachers should play as facilitators, mediators, and managers of the learning process. Constructivism is a philosophical framework within the knowledge field that posits that knowledge is a product of individuals engaged in learning. According to Umbara (2017), knowledge is not simply a compilation of factual information but a cognitive construction that individuals develop based on their interactions with objects, experiences, and their surrounding environment.

Knowledge is not "something already there" that we can absorb but rather a dynamic construction of individuals who rearrange themselves to learn new things each time. According to constructivism, people create knowledge due to their interactions with events, objects, and surroundings. Constructivism begins with knowledge creation, and the reconstruction of knowledge refers to the alteration of information held by someone who has already been created or built. This alteration results from interaction with their environment (Nurhidayati, 2017b).

According to research done at SD Negeri 25 Lubuk Lintah, the teacher's position in the learning process has not yet been recognized as a mediator and facilitator. The teacher has not created a learning environment where students are free to explore the concepts they learn independently. By merely providing notes, the teacher still controls the learning process. Only notes written by the teacher on the board are copied by the students. It appears from

teaching activities that the teacher has not interacted with students very much, and the learning environment offered does not meet the needs of the students. It is shown by the activities of students who engage in learning; nonetheless, student engagement or activity in learning is still relatively low. Activities that have not been included in activities that make reasoning based on students' roles. It undoubtedly affects how productively their brains are stimulated. According to constructivism, learning activities must allow students to gain experience by formulating, testing, and manipulating hypotheses, solving problems, seeking solutions, describing, researching, holding dialogue, asking questions, and expressing ideas to create new constructions. It allows them to create their own experiences, which helps the concepts become deeply embedded (Jabir et al., 2016).

The learning environment that the teacher has created for the students might be characterized as substandard in terms of constructivism and failing to prepare them for the integration of technical requirements required in 5.0. To achieve the required learning competencies and follow the times' demands, the teacher must maximize learning with the TPACK model (Fitria, 2021). From a constructivist point of view, this integration requires teacher competency to balance each element of technology expertise, pedagogy, and content to achieve balanced, successful learning.

Three categories of activities—adaptation of technical help, instructional design, and administrative aid—are used by TPACK to address these restrictions. The program's description, outcomes, and thorough documentation are provided below.

3.1 Technology Adaptation Assistance

3.1.1 Create Interactive Lessons

A teaching strategy that actively incorporates students in the learning process is known as interactive learning. Interactive learning utilizing technology is one of many interactive learning activities. Positive responses to the development of this technology are possible, one of which is for teaching strategies. Suggestions for educational films, motivational e-books, and other resources, for instance. Here, we offer educational opportunities like using an inappropriate laptop to take ANBK tests at school and learn while playing the web. The scores were as high as 85%, and we observed significant student growth in using computers to complete

ANBK exams, as well as their active and passionate participation in learning while playing the web. Some of the children's achievements in this program included the following:

- a. Students in grade 5 at SDN 25 Lubuk Lintah took the ANBK test.
- b. The utilization of a Web link to implement playing while learning.
- c. The students are more enthusiastic about learning.



Figure 1: Interactive Learning with Students.

3.2 Create Interactive Lessons

3.2.1 Introducing the AKM Kelas Application and Practicing the Use of the AKM Kelas Application to Students

The Ministry of Education and Culture (Kemendikbud) created the AKM class (Minimum Competency Assessment) as an educational program. The AKM activities in this lesson aim to assess how well the students have understood their subject matter. The literacy and numeracy categories emphasize this class's AKM exercises, which measure students' progress in these areas. The results were as high as 90%, and we observed significant student growth in using laptops to complete the AKM class tests. Additionally, they demonstrated activity and enthusiasm when completing the pretest and posttest for the AKM class, as seen in the following examples:

- a. The class AKM pretest and posttest were successfully implemented
- b. Students can already utilize laptops and computers during exams
- c. Students who are enthusiastic when taking tests on laptops

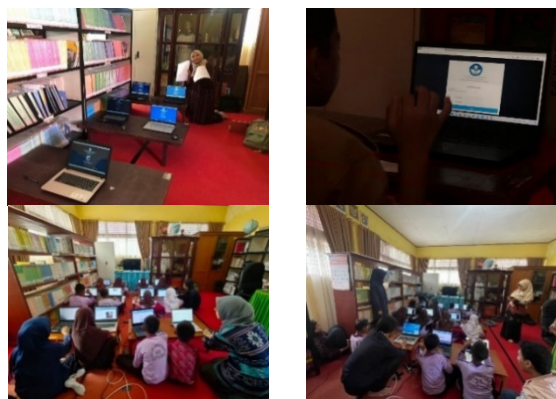


Figure 2: Introducing the AKM Kelas application and practicing the use of the AKM Kelas application to students

3.3 Teach

3.3.1 Teaching Literacy and Numeracy to Students

Through mathematics and non-mathematics learning activities, numeracy literacy development strategies can be used at the classroom level. Then, at the school level, literacy activities can also be established through the infrastructure with numeracy nuances, providing interventions for high-risk students, and holding parent-involved numeracy activities. The development of numeracy and literacy must occur at the classroom, school, and regional levels by providing training for teachers, administrators, and supervisors.

The results we got from adopting this program, as evidenced by children who could not read before or could only spell, can now read and be as high as 80%. Compared to the prior Numeration exercises, when only a small number of students memorized multiplication from 1 to 10, the changes are much better now, with 8 out of 10 students memorizing it smoothly.



Figure 3: Teaching Literacy and Numeracy Activities to Students.

3.3.2 Provide Additional Lessons to Students that Still Lacking in Literacy and Numeracy

This program is available during school hours. This exercise wants to teach students who struggle with literacy and numeracy. The ability to think critically and absorb information is related to literacy. So, it goes beyond only spelling and reading comprehension. The supplementary learning offered at this school helps students' numeracy as well. The outcome of success rate used in this program is 70%. The introduction of this program is crucial because it addresses the literacy and numeracy gaps among students at SD Negeri 25 Lubuk Lintah. Students' accomplishments include:

- a. Increasing literacy levels through additional learning activities
- b. Students have started fluently in reading and arithmetic.



Figure 4: Provide additional lessons to students that still lack literacy and numeracy.

3.4 Administration

3.4.1 Creating a Literacy Corner

Schools use the literacy Corner program to stimulate students' interest in reading. It is not easy to grow a literacy movement. Building a literacy culture requires time, energy, and resources. It is believed that the literacy corner used in every area of the classroom is sufficient to encourage students to read frequently during breaks or while they wait for the change in class hours. Also, each class has text-rich environmental assistance, such as the displayed student work, picket schedules, and lesson plans. This literacy corner takes the shape of a reading corner in the back of the classroom. It has bookshelves, mats for the children to sit on, reading materials, and

educational resources. The teacher gives lesson assignments by using sources from the available reading material in the classroom literacy corner, writing motivational words and poetry, affixing it to the class wall magazines, and participating in the school literacy corner program. 95% of this program's implementation attempts were successful. The following outcomes were attained as a result of the reading corner's implementation:

- a. Increasing students' interest in reading at SDN 25 Lubuk Lintah
- b. Making the classroom cozy and lovely when the teaching and learning process is taking place
- c. Inviting children to read more and think critically
- d. Bringing books closer to the students can increase their enthusiasm for reading



Figure 5: Create a literacy corner in each class.

3.4.2 6th Grade Entrepreneurship Activities

The entrepreneurship program aims to provide students with the resources they need to understand entrepreneurship, have entrepreneurial character, seize chances, and obtain practical experience in the field. Students are asked to prepare various inexpensive snacks that can be sold for affordable prices for schoolchildren, starting at Rp. 1,000. Examples of these snacks include corn dogs, balls of noodles, crispy mushrooms, and various drinks. 95% of the program has been successfully implemented. The outcomes attained by students are:

- a. Students can comprehend how to practice entrepreneurship correctly.
- b. Exercise risk-taking, inventiveness, and originality.
- c. Encourage students to feel confident.



Figure 6: Entrepreneurial Activities in Grade 6.

Activities created after analyzing the educational environment and actual student learning can go smoothly and get a decent grade. Implementing TPACK in classrooms as teachers and students in the campus program work together effectively instruct. Students share their technological expertise, and teachers share their views on the subject matter and their pedagogical skills with the class. Good cooperation will help to determine whether the planned actions are successful.

4 CONCLUSIONS

According to an analysis of the use of constructivist thinking in primary school mathematics learning, the learning activities are inconsistent with constructivist understanding. The best way to get around teachers' and students' learning challenges is to use the technology pedagogical and content knowledge (TPACK) model for educators.

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Pancasilaism through Education in Indonesia

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Abstract: Pancasila is the basis for the way of life of the Indonesian people which contains five foundations which in its content form the identity of the Indonesian nation. Educational philosophy is a deep thought about education based on philosophy. If we relate the function of Pancasila to the education system in terms of educational philosophy, then Pancasila is the nation's view of life which animates in everyday life. Indonesian educational philosophy is rooted in the cultural values contained in Pancasila. These Pancasila values must be instilled in students through the implementation of national education at all levels and types of education. Education is carried out by humans through learning activities. The ideals and initiatives of the Indonesian nation are institutionalized in a national education system that is based on and inspired by a certain belief, view of life and philosophy, this is the rationale why the philosophy of Pancasila education is a national demand and philosophy system is a sub-system of the Pancasila state system.


1 INTRODUCTION


Pancasila is the basis for the way of life of the Indonesian people which contains five foundations which in its content form the identity of the Indonesian nation. The precepts in Pancasila describe the guidelines for living as a nation and state for Indonesian people wholly and completely. The inclusion of Pancasila as an ideology and philosophy of the Indonesian nation cannot be separated from the role of Bung Karno. Pancasila is the result of thoughts that are believed to be true, just and wise norms. The Pancasila precepts describe the guidelines for living as a nation and state for Indonesian people.


Philosophy that is developed must be based on the philosophy adopted by a nation, while education is a way or mechanism in instilling and passing down these philosophical values. Education as an institution that functions to instill and pass on a system of behavioral norms based on philosophical foundations upheld by educational institutions and educators in a society.


As a philosophy and an ideology for the Indonesian people, Pancasila is the basis for the implementation of all aspects of life for the Indonesian people. One of them is in the field of education. In Law No. 12 of 2012 Article 1 concerning Higher Education it is stated that "Education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, morals noble character, as well as the skills needed by himself, the community, the nation and the state. From the law above, it can be interpreted that education in Indonesia is a learning process that strives for the purpose of developing self-potential and character for students. Here the Pancasila precepts reflect how.

By paying attention to the function of education in developing the nation's potential, especially in preserving the nation's culture and personality which ultimately determines the existence and dignity of the nation, the national education system and the educational philosophy of Pancasila should be

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optimally developed so as to ensure the upholding of national dignity and personality. The Pancasila educational philosophy is a spiritual aspect of the national education system, there is no national education system without an educational philosophy.

2 METHOD

The method used to compile this article is a literature study. Library study, namely examining sources, be it books, articles, references related to Pancasila philosophy in education in Indonesia.

3 DISCUSSION

3.1 Pancasila Thought

The basic thoughts contained in Pancasila, namely thoughts about humans relating to God, with oneself, with others, the nation's community whose values are shared by the Indonesian people.

According to Notonagoro (1967:32) Pancasila is a unified whole. The unity of the Pancasila precepts is described as follows:

1. In essence, the existence of God exists because of himself, God as the *prima causa*. Therefore everything that exists is a result of the existence of God (first precept). As for humans as the subject of human creation, the main supporters of the state, because the state is a symbol of humanity, the state is a community of living together whose members are humans (second precept). Thus, the state is as a result of the existence of united humans (third precept). Furthermore, a living association was formed which was called the people. The people are the totality of individuals in a unified state (fourth precept). As for justice, which is essentially a common goal or social justice (the fifth precept), in essence, it is the goal of an institution of living together called the state.
2. The relationship between the unity of the Pancasila precepts which complement and qualify the Pancasila precepts as a unit can also be formulated in terms of complementarity or qualification within the framework of a pyramidal hierarchical relationship. Furthermore, according to Abdulgani (Ruyadi, 2003: 16), Pancasila is a state philosophy that was born as a collective ideology (shared ideals) of the entire Indonesian nation. Pancasila is the result of deep soul

contemplation, which is then poured into an appropriate "system". Meanwhile Notonagoro (Ruyadi, 2003:16) states, Pancasila philosophy provides scientific knowledge and understanding, namely about the essence of Pancasila. Pancasila as a philosophical system has its own ontological basis, epistemological basis and axiological basis, which distinguishes it from other philosophical systems. There are two views which, according to (Jumali, et al, 2004:54), need to be considered in determining the philosophical basis of Indonesian national education. First, the view of Indonesian people. The philosophy of national education views Indonesian people as:

- Creatures of God Almighty with all his nature
- Individual beings with all things and obligations
- Social beings with all responsibilities live in a pluralistic society both in terms of the socio-cultural environment, the environment and in terms of progress of the Unitary State of the Republic of Indonesia in the midst of a global society that is constantly developing with all its challenges.

Second, the view on national education itself. In a philosophical view, national education is seen as a social institution that always interacts with other social institutions in society.

3.2 Pancasilaism Thinking Towards Education in Indonesia

Indonesian educational philosophy is rooted in the cultural values contained in Pancasila. These Pancasila values must be instilled in students through the implementation of national education at all levels and types of education. Education is carried out by humans through learning activities. In universal educational practices, there are many diverse communities of people who give various meanings to education. In Indonesia, education is emphasized on mastery of the foundation for the formation of a meritorious society, meaning that it provides extensive study hours in the mastery of certain subjects.

According to John Dewey, educational philosophy is a formation of fundamental basic abilities, both concerning the power of thought (intellectual) and the power of feeling (emotional) towards human nature, so philosophy is also interpreted as a general theory of education. Brubachen argues that philosophy of education is like putting a cart before a horse and philosophy is seen as a flower, not as the single root of education. The

philosophy of education stands freely with the advantage of having a connection with general philosophy, even though this connection is not important, what happens is an integration between the views of philosophy and the philosophy of education, because philosophy is often interpreted as a theory of education in general (Arifin, 1993).

The education of a nation will automatically follow the ideology of the nation it adheres to. Pancasila is the basis and ideology of the Indonesian nation which has a function in the life and life of the Indonesian nation and state. Philosophy is thinking deeply and earnestly to seek the truth, educational philosophy is a deep thought about education based on philosophy, if we relate the function of Pancasila to the education system in terms of educational philosophy, that Pancasila is the nation's view of life that animates in everyday life. Therefore, it is only natural that the Indonesian national education system is imbued with, based on and reflects the identity of Pancasila. The aspirations and initiatives of the Indonesian people are institutionalized in a national education system that is based on and imbued with a certain belief, view of life and philosophy, this is the rationale why the Pancasila educational philosophy is a national demand and the Pancasila educational philosophy system is a sub-system of the Pancasila state system.

Pancasila with the education system in terms of educational philosophy, that Pancasila is the nation's view of life that animates in everyday life. Therefore, it is only natural that the Indonesian national education system is imbued with, based on, and reflects the identity of Pancasila. The ideals and initiatives of the Indonesian people are institutionalized in a national education system that is based on and inspired by a certain belief, view of life and philosophy. This is the rationale why the Pancasila educational philosophy is a national demand and the Pancasila educational philosophy system is a sub-system of the Pancasila State system. By paying attention to the function of education in developing the potential of the nation, especially in preserving the culture and personality of the nation which ultimately determines the existence and dignity of the nation, the national education system and Pancasila educational philosophy should be optimally developed so as to ensure the upholding of national dignity and personality. The Pancasila educational philosophy is a spiritual or spiritual aspect of the national education system, there is no national education system without educational philosophy.

The Pancasila education system is an education that is based on and inspired by a Pancasila belief,

view of life and philosophy. This thinking underlies the importance of the philosophy of Pancasila education which is a national demand. Because the philosophy of Pancasila is a unified whole, or organic unity based on Pancasila

Expressing this thought in the form of a curriculum, through the curriculum, the teaching system can be directed, besides being able to make it easier for educators to arrange teaching that will be given to students (Yassa, 2018). Apart from going through the formal curriculum, the casting of Pancasila values can be achieved with a hidden curriculum. The hidden curriculum refers to everything that can influence the ongoing process of teaching and education which might increase efforts to achieve educational goals (Yahya, 2013). The hidden curriculum has a strategic role in the process of internalizing positive values for students. The ability of educators to manage the learning process can also influence learning success related to affective aspects (Maryani & Dewi, 2018). For this reason, the science of education must always be developed on the basis of the spirit of Pancasila values. As stated by Sikun Pribadi (in Suresman, 2012) that the science of education is a science that contains theories which by themselves will be related to practical human activities..

4 CONCLUSIONS





Pancasila is the result of ideas that are believed to be true, just and wise norms. The precepts in Pancasila describe the guidelines for living as a nation and state for Indonesian people wholly and completely. Pancasila is also a philosophy because it is a cognitive-intellectual reference for the nation's way of thinking, which in scientific endeavors can be built into a credible philosophical system.

Philosophy is thinking deeply and earnestly to seek the truth. Educational philosophy is a deep thought about education based on philosophy. If we relate the function of Pancasila to the education system in terms of educational philosophy, then Pancasila is the nation's view of life which animates in everyday life. Therefore, it is only natural that the Indonesian national education system is imbued with, based on and reflects the identity of Pancasila.

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Analysis of P5 Activities as an Application of Differentiated Learning in the Digital Era of Independent Curriculum at SMA Negeri 3 Sungai Penuh

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Abstract: This study aims to analyse P5 activities based on several indicators as an application of differentiated learning in digital era of Merdeka Curriculum at SMA Negeri 3 Sungai Penuh. This research uses a qualitative approach with descriptive research. The research subjects were 6 resource persons consisting of the vice principal for curriculum, the facilitator teacher of P5 activities and four students as actors of P5 activities who were taken using purposive sampling technique. The research data comes from observations and interviews which are then analysed using the Miles and Huberman model, this data is called primary data. The objectives of this study are 1) To analyse P5 activities that have been implemented at SMA Negeri 3 Sungai Penuh 2) To analyse the application of differentiated learning in SMA Negeri 3 Sungai Penuh 3) To analyse the impact of P5 activities as a form of differentiated learning on the digital era of Merdeka Curriculum that conducted as a form of differentiated learning on the Merdeka curriculum has a positive impact on the development of students.


1 INTRODUCTION


The implementation of the independent curriculum is expected to be able to achieve the objectives of competence and be able to deliver students to overcome the challenges of the times in the current digital era. As technology, is part of science that always experiences unlimited development and affect all fields. This can be seen in all areas of human needs, such as clothing, food, and even administration which of course can be fulfilled or conducted by technology. So with the development of technology that brings new innovations, this is a form of the result that society has entered the digital era. The digital era is an era where technological developments in the form of digital systems have facilitated all aspects of human life (Ma'rufah, 2022). The form of the aspect of life that is bound from digitalization is education. This can be seen in the


application of learning systems in the digital era that all use technology, such as administration, curriculum, methods, and learning media (Ma'rufah, 2022).

In order for the education system to achieve quality in today's digital era, there are changes in the curriculum from time to time to equalize with the demands of the times, as we know that the curriculum in Indonesia has changed many times. Changes in this curriculum are inevitable. Recently, Indonesia is undergoing a curriculum change called the independent curriculum, although it has not changed from all levels in the education unit. This curriculum change is also motivated by the COVID-19 pandemic, as we know when the pandemic is threatening, learning is also conducted online, so the government prioritizes the recovery of the education situation in various ways, so that learning is still implemented. The form of effort made by the government is to create a new learning paradigm.

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The transformation of education through this new paradigm is expected to transform the quality of education in Indonesia to achieve better educational goals. Minister of Education and Culture Nadiem Makarim said that changes in education reform policies in Indonesia cannot occur without changes from schools. One of these important changes is the emergence of independent curriculum. Adhering to the concept of independent learning, the independent curriculum encourages learning according to the interests, learning styles, and abilities of students, and provides wider space for the development of students' character and basic skills (Saputra et al., 2022).

The independent curriculum, which has begun to be introduced to education units with gradual implementation, also emphasizes the development of the Pancasila learning profile known as P5 and is based on competencies that are not limited to content (Kholidah et al., 2022). The distinctive feature of Merdeka curriculum is designing a project to strengthen the character of students, so that they are able to achieve the highest happiness in getting learning.

According to the guidelines for the development of the Pancasila Student Profile Strengthening Project prepared by the Education Standards, Curriculum and Assessment Agency (2022), the Pancasila Student Profile aims to answer the big question for students, namely what kind of profile (competence) the Indonesian education system wants to produce. In connection with that, the Pancasila Student Profile has a competency design that complements the focus on cultivating character in accordance with the values of Pancasila to achieve the competency standards of graduates at all levels of the Education unit. At SMA N 3 Sungai Penuh school has implemented independent curriculum in class X, class XI and XII still apply the 2013 national curriculum, class X in independent curriculum is called phase E.

P5 activities are a form of opportunity given to students to gain knowledge as a process of character building, learning opportunities from the environment and creating responsible learners. In this P5 activity, learners have the opportunity to explore important issues or topics such as climate change, counter radicalism, mental health, culture, entrepreneurship, technology and democratic life so that learners can take concrete actions to answer these issues according to their level and learning needs. P5 is expected to inspire learners to contribute to the surrounding environment (Education

Standards, Curriculum and Assessment Agency, 2022).

In P5 activities, students are given freedom so that they can determine the interests and talents that already exist in the students themselves, through the projects they develop, this is also a form of developing their potential by the students themselves, as for the form of teacher involvement, namely as a facilitator, the teacher only guides students and does not demand students.

P5 activities can be called the application of differentiated learning because in these P5 activities learners can develop their skills to increase learners' interest. P5 activities also improve learners' performance when they discuss outstanding projects with their peers. The purpose of P5 is to develop learners' skills to create projects that are related to the Pancasila Student Profile (Saraswati et al., 2022).

Differentiated learning is learning that accommodates students' learning needs. Teachers facilitate students according to their needs, because each student has different characteristics, so they cannot be given the same treatment. This can be seen from the learning styles possessed by students, as educators or teachers should not ignore the characteristics of students in the classroom, then collaborate and coordinate each of these differences by using the right strategy (Sutaga, 2022). The theme applied by SMA N 3 Sungai Penuh is a sustainable lifestyle "carbon footprint, our footprint on earth". As here students are given freedom in making projects with the theme of carbon footprints, students are given freedom in expressing or creativity that they do.

The freedom given to students in making projects with predetermined themes is a form of implementing differentiated learning in Merdeka curriculum, namely the implementation of P5 conducted by schools because P5 activities can provide more meaningful experiences and learning processes to students and differentiated learning is learning that gives freedom to students to increase their potential according to their willingness, interests and learning profiles. Differentiated learning does not only focus on the product, but also on the process and content of learning so that it is in line with P5 activities that allow learners to be able to explore their knowledge independently. Through the implementation of differentiated learning, teachers can also conduct learning in accordance with the needs of the curriculum and are considered as teachers who can develop their abilities to fulfill their duties professionally. (Sutaga, 2022).

Based on this description, the purpose of this research is to find out how P5 activities have been implemented by schools as a form of differentiated learning in Merdeka curriculum of the current digital era and how it impacts students at SMA N 3 Sungai Penuh.

2 METHODS

This research uses a qualitative approach with a qualitative descriptive research type. The description of the analysis of P5 activities as an application of differentiated learning in the independent curriculum of the digital era is explained based on the results of data collection in the field, precisely at SMA Negeri 3 Sungai Penuh using interview and observation techniques. The subjects of this research consisted of the vice principal for curriculum, the P5 activity facilitator teacher and students who conduct P5 activities. The research subjects were taken using Purposive Sampling technique by considering the relationship between the research objectives and the research subjects. The data sources used in this study are the results of interviews with research subjects and supporting data sources in the form of articles and journals. The data analysis technique used is the Milles and Huberman model in (Rijali, 2018) which describes the analysis process starting from data collection, data reduction, data presentation, and conclusion drawing or verification.

3 RESULTS AND DISCUSSION

SMA Negeri 3 Sungai Penuh is located in Sri Menati Village, Koto Baru District, Sungai Penuh City, is a school that has implemented a Merdeka curriculum in class X, and at SMA N 3 there are currently 6 teachers who are taking part in the Education of activist teachers. The independent curriculum is a form of change made to the curriculum that gives students freedom in learning to develop the potential they have. This research is conducted on the analysis of the Pancasila Student Profile Strengthening Project or P5 activities starting from the preparation of the school ecosystem to implement activities, design and manage the implementation of activities, as well as process assessments, project reports, evaluations and follow-up plans for P5 activities at SMA Negeri 3 Sungai Penuh. In addition, this research is also related to the application of differentiated learning in Merdeka curriculum of the digital era by facilitator

teachers to students who conduct P5 activities. This activity starts from the teacher's understanding of student's development, identifying ways of learning and student interests and the right strategy for grouping students according to the student profile, as well as the impact of P5 activities as an application of differentiated learning in the digital era of independent curriculum.

The interviewees in this study were: Head of school, deputy curricular, and 6 teachers who teach in class X and 3 class X students.

3.1 Project Activities Strengthening the Profile of Pancasila Students (P5)

Based on the results of interviews that the researchers have conducted with the deputy principal for curriculum, activity facilitator teachers and students, it is found that the readiness of the school ecosystem in conducting P5 activities is quite ready because SMA Negeri 3 Sungai Penuh has implemented learning using the Merdeka Curriculum and SMA Negeri 3 Sungai Penuh is included in the category of Independent Changing IKM schools which in terms of digitalization have utilized the independent teaching platform provided by the ministry. The beginning of the implementation of Merdeka Curriculum at SMA Negeri 3 Sungai Penuh was due to the policy of the Jambi Provincial Government through the Education Office which suggested the implementation of Merdeka curriculum in schools assisted by the Education Office on the grounds that if in 2024 the Merdeka curriculum was required to be implemented as a whole, then SMA Negeri 3 Sungai Penuh would have no difficulty implementing it.

P5 activities in its implementation require proper planning, systems, project design and management. SMA Negeri 3 Sungai Penuh is good enough in preparing the P5 activity plan so that activities can run smoothly. This cannot be separated from the existence of a system that supports the implementation of school-owned project-based learning for the implementation of independent curriculum for the digital era through the P5 project. The support system consists of the school curriculum team, project coordinator team and facilitator team who work together to realize Merdeka Learning at SMA Negeri 3 Sungai Penuh. Based on the results of the interview, the planning stage of the P5 project at SMA Negeri 3 Sungai Penuh starts from the workshop first, namely in the form of a teacher council meeting with the academic field, especially the curriculum section. At the meeting, the independent curriculum and P5 activities were

introduced to teachers at SMA Negeri 3 Sungai Penuh starting from what P5 is in independent curriculum, what it looks like and how to implement it. After the introductory stage, then continued with the workshop for making the teaching module. Teaching modules for P5 at SMA Negeri 3 Sungai Penuh were made by several groups of teachers. The teaching modules are compiled by adapting from examples of modules belonging to the ministry that have been provided on the independent teaching platform. Thus, teachers are also required to keep up with the times which are currently all things digital by utilizing the teaching platform. After the workshop on the teaching module, a meeting was held again to determine what theme would be used in the first semester for P5 activities for class X in the 2022/2023 school year. SMA Negeri 3 Sungai Penuh has implemented two themes from a total of seven general themes provided by the Ministry of Education, Culture, Research and Technology. The two themes that have been implemented are the Sustainable Lifestyle theme and the Local Wisdom theme. These two themes are further divided into several sub-themes and later students will choose one sub-theme each that they are interested in to conduct their projects. Based on the results of the interview It can be concluded that for P5 activities, the implementation planning at SMA Negeri 3 Sungai Penuh is very good and conceptualized so that when the activity is implemented, it will run in accordance with the planning.

After planning, the next stage is the implementation and management of P5 activities. SMA Negeri 3 Sungai Penuh has implemented P5 activities for one semester. The implementation of P5 activities has gone very well as evidenced by the success of the exhibition event held by students to display the results of the projects they have made at the end of learning in the first semester. The implementation of P5 activities begins with determining the implementation pattern, the implementation pattern at SMA Negeri 3 Sungai Penuh uses a weekly block, to be precise, every Thursday and Saturday full schedule for P5 class X activities. Facilitator teachers will enter each class they teach and the first time they enter the class, students are presented with the main theme chosen by the school to conduct their project then students are asked to choose the sub-theme they are most interested in and they are free to choose what sub-theme to take for their project, after that the facilitator teacher will group those who choose the same sub-theme and make them one group for this P5 activity.

If in one class there is one sub-theme chosen by only one student, then the student will be combined with a friend in another class who also chooses the same theme. After determining the chosen sub-theme and group division, students are free to find more information related to the sub-theme they choose and then they plan what to do when this project is conducted. Learners can use any media to find information, it can be through books or using digitalization technology by utilizing the internet. In this process students will learn how the Pancasila Student Profile is implemented. In the process, students need to go to the field to learn directly the theory or description that they have learned in the classroom before, this is where the importance of partner involvement from outside the school. The involvement of partners for the development of the P5 project is also very helpful for the implementation of P5 activities because with partners from outside the school environment, students will gain more experience and learning from those who are competent in their fields. Students will also learn a lot about the sub-themes they choose themselves. For example, at SMA Negeri 3 Sungai Penuh on the theme of Local Wisdom, groups of learners who take the sub-theme of local crafts can choose what crafts they want to master and understand more deeply, for example woven pandanus which is a processed local product from Sungai Penuh. Then they will start looking for information about pandanus weaving and start planning the project they want to do. The group of students can ask the facilitator teacher for permission to take them to one of the partners in the form of a pandanus weaving craft center to see firsthand how it is made so that they can learn it. It can be concluded that the implementation of this P5 activity is based on the wishes and interests of the students who conduct, no interference from the school or the facilitator teacher because the school only facilitates and gives permission for its implementation so that the activities conducted also become fun for students.

Furthermore, students will be asked to report the results of the P5 activities that they have conducted for three months for one project theme. The P5 activity report can be in the form of a paper on what results they get while conducting the project or in the form of an exhibition held to display the work they made during the implementation of P5 activities. Based on the results of interviews and observations, projects made by students at SMA Negeri 3 Sungai Penuh are then displayed in the form of exhibitions for the second theme, namely local wisdom from each sub-theme chosen by students such as the arts,

students perform traditional dances, sing folk songs, madihin and so on. Then for local crafts, students display the results of the crafts they make or they get from P5 activities such as hats, bags, cloths, tissue holders and other crafts. For the traditional dance sub-theme, learners performed traditional dances such as mai bugae dance, rangguk dance and yo yo dance. Furthermore, there are regional specialties that make leman, chili suhin, geladi curry, jackfruit curry, and many regional specialties that they cook themselves and display at the exhibition. Then for those who took the sub-theme of tourist attractions, they introduced the tours in the Sungai Penuh area and reported what the obstacles were at the tourist attractions. The results of this exhibition were then given an assessment by the facilitating teacher and included in the project report card.

Furthermore, assessment and evaluation as well as follow-up plans for P5 activities. In the implementation of P5 activities at SMA Negeri 3 Sungai Penuh, there are several obstacles during the process, starting from the difficulty of organizing students so that they can remain active in running P5 activities, another obstacle is related to P5 activity funds which are still using students' personal funds when they want to visit project partners from the theme taken.

Furthermore, the main obstacle during the project implementation process is the habituation that must be conducted by educators and students because this P5 activity is new and needs habituation from the school to be implemented properly. Sometimes, during the activity, educators should supervise and guide all day on the project day but it does not go well because there is certainly a sense of boredom when all day must supervise students whose behavior and attitudes are difficult to understand as well as students, they will get bored if they have to work on the project for one day, therefore the school makes a strategy so that educators and students are not focused on the project being conducted alone. The school held scouting activities for students to increase the strengthening of the Pancasila Student Profile. The assessment or assessment conducted in this P5 activity is conducted

Assessment by the facilitator teacher in the form of a special assessment for each student who conducts P5 activities is not only an assessment of the work, but each individual child is assessed for their attitude and behavior. The assessment is conducted every time the facilitator teacher enters the class for the implementation of P5 activities. The facilitator teacher must remember each student because each child has its own assessment, such as

craftsmanship, participation in cooperation, discussion and expressing opinions, attitude and behavior, all of which are assessed and will later be included in the Merdeka curriculum report card. In addition, assessment and evaluation are also conducted from the results of the exhibition work that has been implemented by class X students at SMA Negeri 3 Sungai Penuh. Not only from teachers who assess students' work, but guests who come to see the exhibition can also provide an assessment of their work.

Based on the results of interviews with the Vice Principal for Academic Affairs and the Facilitator Teacher, the follow-up plan after the implementation of P5 activities at SMA Negeri 3 Sungai Penuh for one semester is criticism and input from teachers and guests who come during exhibition activities at SMA Negeri 3 Sungai Penuh will be followed up by the school so that the implementation of P5 activities will be even better in the future, especially in activities that will be held in the second semester with the theme of entrepreneurship. In addition, it is hoped that this activity can continue to run well and get better and the school tries to be even more prepared in the implementation of this P5 activity and the next plan is not only in the form of an exhibition of works that are held, the school must hold even bigger activities and invite more guests, be it partners outside the school or other guests.

So it can be concluded, the activities of the Pancasila Student Profile Strengthening Project at SMA Negeri 3 Sungai Penuh starting from activity planning, implementation and management of activities as well as assessment, evaluation and follow-up plans for further activities run very well and are structured.

3.2 Implementation of Differentiated Learning in the Digital Era Merdeka Curriculum

Based on the results of interviews that have been conducted by researchers with one of the facilitator teachers and students, the results found that differentiated learning is one of the learning that emphasizes action and real projects conducted by students who have different abilities and brain capacity but each student is able to do it.

Understanding the stage of learning development of students needs to be done by every educator because by understanding how their learning development is, the teacher can determine the next step for each student. If there is a student whose learning development stage is slow, then the teacher

as an educator must be able to find ways to make the student still able to follow the learning even though the development is slow.

Identifying learners' learning preferences and interests also needs to be done because knowing how students preferred learning will help teachers in making learning methods that are fun and it will also be easier for students to receive learning materials. Based on the results of interviews with several students at SMA Negeri 3 Sungai Penuh, they tend to prefer learning that uses problem-based learning and project-based learning methods because students understand learning better if given real examples through life problems that occur. In addition, with project-based learning, students are also more able to explore the learning themselves.

Grouping strategies based on student profiles also need to be understood by the teacher as an educator. This is because each student must have differences based on their profile, therefore grouping is necessary so that the learning activity program can be implemented properly by the educator. Based on the results of interviews with the facilitator teacher of P5 activities, it was found that the method used by educators to group students is by adjusting the interests and learning styles of students. For P5 activities themselves, students are free to choose what themes they are interested in and they like to do their projects. It can be concluded that differentiated learning has been well implemented at SMA Negeri 3 Sungai Penuh through the implementation of P5 activities and the use of learning methods that adjust the interests and learning development of students and the implementation of learning in favor of students.

3.3 The Impact of P5 Activities as a Form of Differentiated Learning in the Digital Era of Independent Curriculum

Based on the results of interviews with the deputy principal for academic affairs, facilitator teachers and students, it was found that the impact of P5 activities on student learning was first regarding the attitudes and behavior of students who became more aware of the cleanliness of their environment, although measuring attitudes cannot be done just from looking at one or two months, it is hoped that attitudes and behaviors like this can be sustainable. Compared to before the implementation of P5 activities with the theme of sustainable lifestyles, students were not so concerned with the surrounding environment. In addition, when implementing P5 activities with the

theme of local wisdom, the impact is that students are more familiar with the culture of their region. As a form of differentiated learning, the most felt impact is that students learn to be more independent and how far they can make their own decisions. In addition, from the perception of the students themselves, they felt that with this P5 activity, they became more confident, independent and creative in making a work that could be displayed at the exhibition at SMA Negeri 3 Sungai Penuh. It can be concluded that the P5 activities implemented at SMA Negeri 3 Sungai Penuh have a positive impact and get good results.

The findings of observations and interviews on the impact that occurred after the implementation of P5 activities as a form of differentiated learning were positive because students could follow each learning activity well and the implementation of P5 activities was welcomed by students. This is supported by (Wahyuningsari et al., 2022) that the application of differentiated learning has an impact on each learner who has a variety of unique characteristics feels welcomed and valued, teachers as educators teach for the development and success of students, students also feel their learning needs are met and facilitated, and differentiated learning through P5 activities can be said to be a real form of justice in the treatment of learning because students get the same learning opportunities without being differentiated, besides that there will be collaboration between students and educators.

4 CONCLUSIONS

Based on the results of the research and discussion, it can be concluded that the P5 activities that have been implemented are one of the applications of differentiated learning in independent curriculum. P5 activities aim to improve students' skills and knowledge by producing a project whose theme is related to the Pancasila Student Profile. P5 activities in this study starting from planning activities, implementing and managing activities as well as assessing, evaluating and follow-up plans for further activities run very well and are structured.

Differentiated learning is one way or strategy that educators can use to meet the needs of each learner. Differentiated learning is a learning process for students to learn material according to their abilities, students' interests, and their individual needs so that students during the learning process do not feel failed or frustrated. Differentiated learning can be

implemented with the support of current digital technology that makes it easier for teachers as educators to design and plan interesting learning for students. Based on the results of the research conducted, differentiated learning has been implemented well. Based on the data that has been obtained, it can be concluded that differentiated learning has a positive impact on the P5 activities implemented because the activities are welcomed by students with not many obstacles that occur. P5 activities also run very smoothly starting from the planning, implementation, assessment and evaluation stages as well as follow-up plans for the next P5 activities. Suggestions for schools to continue to innovate and continue to implement activities that are able to develop the potential of students according to their interests and talents and be able to implement them well so as to create students with the Pancasila Student Profile. In addition, it is hoped that the school will implement digitalized-based learning so that the implementation of learning becomes more effective for educators and students.

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Media e-Comic Mathematics Based on Contextual Teaching and Learning in the Perspective of Educational Philosophy

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Keywords: Media, CTL, Educational Philosophy.

Abstract: This research is motivated by learning media, a series of learning processes involving educators and students, and learning resources. Learning resources can be in the form of learning media that are more modern and follow students' characteristics to support learning and build a new atmosphere in student learning activities, such as developing media that uses the internet and digital technology as a means of operation. Thus, this underlies the researcher to study Contextual Teaching and Learning (CTL)-based mathematical e-comic media from the perspective of educational philosophy. Educational philosophy has a significant role in shaping the characteristics of mathematics learning media. In the philosophy of education, several aspects and dimensions form the basis for making mathematics learning media, namely aspects of ideas and facts, as well as abstract and concrete dimensions both theoretically and practically. Ontological, epistemological, and axiological educational philosophy approaches in developing mathematics learning media can form practical values that lead to abilities or learning outcomes. The type of research used is library research. Moreover, axiology in the development of mathematics learning media can form practical values that lead to abilities or learning outcomes. The type of research used is library research. Furthermore, axiology in the development of mathematics learning media can form practical values that lead to abilities or learning outcomes. The type of research used is library research.

1 INTRODUCTION

Education is a science. Science is the knowledge that is systematically arranged based on scientific principles. So, the science of education is a science that discusses the general problems of education as a whole and in the abstract. There are characteristics of knowledge that are said to be science, including The first feature, namely that science has its object of study, which can be divided into two kinds, namely material objects (for example, humans) and formal objects (for example science that discusses human behavior).

The second feature is that science has specific methods/procedures that can be used to study science itself. And the third feature is that science material must be presented systematically, meaning that the

knowledge is arranged coherently so that it is easy to learn (for example, background to the problem).

Regarding the grouping of knowledge, Sutari Imam Barnadib and Piet A. Sahertian argued that according to the system, knowledge (knowledge) is divided into two groups, namely: Education as pure science, which can be said to be independent of experience and stand-alone like mathematics; and Education as an applied science, which cannot leave experience for either its existence or its development (Imam Barnadib, 1994).

Applied science is applying knowledge from one or more fields: mathematics, physics or environmental science, chemistry, or biological sciences for solving practical problems that directly affect our daily lives. Philosophy is said to be a science because philosophy contains four scientific statements: how, why, where, and what.

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The answers obtained are descriptive in asking nature what can be captured or seen by the senses (Ginting & Situmorang, 2008). The question of why contains an object's cause (origin), with the answers, obtained being of quality. Where questions ask about what happened in the past, whether about a thing's nature or absolute value, the answer obtained is knowing things that are very general, universal, and abstract.

In the world of education, related to learning and learning philosophy of science is a series of approaches to ways of thinking that guide the direction of the development of the world of education. A series of learning processes involve educators, students, and learning resources, both those the school has provided and those that educators deliberately make. Learning resources in the form of learning media are made by educators to support learning and build a new atmosphere in student learning activities. One of the learning media that can be developed is e-comic.

Amelia Putri (2022) states that e-comics and comics are generally almost the same. The difference is in terms of usage. Comics are printed to look like books, while e-comics are electronic comics that use digital technology such as cell phones and computers.

The development of learning media certainly requires a learning model that will shape the media's characteristics following the expected practical goals. The learning model in educational philosophy is a significant factor in directing the orientation of making learning media, such as in learning mathematics which tends to use media to help illustrate abstract concepts so that they are easily understood.

2 METHOD

The method used in writing this article is the library research method. A literature study is a technique that is carried out by conducting studies by collecting references from books, articles, magazines, newspapers, and online media.

The references that have been collected are then sorted according to the topics to be discussed. In the literature study, a synthesis is also carried out, namely re-describing in their language the opinions or theories of experts contained in reference sources.

The preparation of this article uses references obtained through online media, such as website pages, blogs, articles, modules, and electronic books.

3 RESULTS AND DISCUSSION

3.1 Definition of Philosophy and Mathematics

Several figures expressed different opinions about the meaning of philosophy, and these figures were: (1) Plato, who stated that philosophy is the science of obtaining pure truth; (2) Aristotle stated that philosophy is a science of studying reality. Furthermore, (3) Rene Descartes stated that philosophy is a set with a base of investigation about God, nature, and humans. From the definition stated above, it can be concluded that philosophy is a science that seeks the truth value of the essence of a problem.

The word mathematics comes from the Latin word mathematic, initially taken from the Greek word mathematics, which means study (Rahma, 2013). This word originates from mathematics, which means knowledge or science (knowledge, science). Mathematics is also related to words almost the same, namely machine or mathenein, which means learning (thinking). So, based on the word's origin, mathematics means knowledge obtained by thinking (reasoning). Mathematics is a primary science benchmark for developing and progressing science, technology, and philosophy (Ulfa, 2019).

Philosophy and mathematics do not doubt that from the past until now, these two fields of knowledge are very closely related. Philosophy of mathematics is a branch of philosophy that examines mathematics's philosophical assumptions, foundations, and effects. The philosophy of mathematics aims to provide a record of the nature and methodology of mathematics and to understand the place of mathematics in human life. The field of knowledge called the philosophy of mathematics results from philosophical thought whose goal is mathematics.

Slamet (2008) explains the details of the field of philosophy of mathematics that can be put forward and are expected to be more systematic, including several sections, namely: (1) Mathematical epistemology, namely the theory of knowledge whose study target is mathematical knowledge; (2) Mathematical ontology, recently ontology is seen as a theory of what exists; (c) Mathematical axiology, consisting of ethics which discusses aspects of truth, responsibility and the role of mathematics in life, and aesthetics which discusses the beauty of mathematics and its implications for life which can affect other aspects, especially art, and culture in life.

3.2 Relationship Between Mathematics and Philosophy of Education

Mathematics and philosophy are two terms that cannot be separated. Philosophy and mathematics have a close relationship. Wahyudi (2011) argues that the relationship between mathematics and philosophy is the earliest intellectual attempt to understand the world around us, and both were born in Ancient Greece and underwent necessary transformations there. Mathematics is a crucial case study for philosophers. The contemporary philosophical agenda has very clear formulations focused on mathematics, which include epistemology and Ontology.

3.3 CTL-Based Mathematical e-Comic Media Development Foundation

Learning mathematics learning media is used to help smooth communication and interaction between teachers and students so that learning activities and achievements in mathematics are more optimal. Mathematics learning media can be created using written, audio, visual, or combination.

Philosophy of science and education has a significant role in shaping the characteristics of mathematics learning media (Komariah, 2019). The development of mathematics learning media requires a philosophy of science and education approach consisting of ontological, epistemological, and axiological approaches. Ontologically, the development of mathematics learning media is based on reality following the conditions or circumstances that occur in the classroom. In contrast to the ontological approach, the development of mathematics learning media which is carried out epistemologically, emphasizes the scientific method, which consists of (1) the existence of a systematic, logical, and consistent framework of thinking; (2) requires a hypothesis based on a framework; (3) requires verification of the hypothesis made. From an axiological point of view,

Based on ontological, epistemological, and axiological approaches, mathematics learning media has practical goals for learning mathematics.

One of the media that educators can develop is e-comic media. In general, e-comics and comics are almost the same, and usage is different. Comics are printed to look like books, while e-comics are electronic comics that use digital technology such as cell phones and computers.

Comics have advantages and disadvantages when applied as a medium of learning (Sutrisno, 2018). The

following are the advantages of comic media, including (1) comic media can increase students' motivation and interest in learning; (2) create fun learning; (3) students will never forget the experiences they experience and make a memorable impression on them; (4) the material explained in comics is more interesting because it contains story pictures and illustrations that make it easier for students to understand the subject matter. Meanwhile, the disadvantages of comic media are (1) not all students can learn in a visual style; (2) most students tend only to want to see and are curious about the attractiveness of the picture.

According to MS Gumelar, quoted by Nuriza S (2018: 33), there are several design elements in comics which include: (1) Space is space in comics such as paper, space on the canvas, space in digital media such as computers or laptops; (2) Image is an image, photo, illustration, logo, symbol, and icon that forms a comic; (3) Text is a symbol of sound in the comic; (4) Color is the color in comics (S., 2018).

According to Annisa Aura (2021), the completeness of comic elements consists of three parts, including (1) the front, which consists of a cover accompanied by a comic title and credits or a description of the comic's author; (2) the content section, consisting of panels, reading or word balloons, narration, gutter or separation between panels, and sound effects; (3) the end, contains a summary of the story or conclusion.

The e-comic media used should use a learning model that allows students to know theoretical knowledge and more on contextual knowledge so that students can more easily construct their own knowledge, such as the contextual teaching and learning (CTL) learning model. According to Nurdyansyah (2016), CTL is a learning concept that helps students relate the material being taught to real-world situations of students and makes connections between the knowledge they have and its application in everyday life, such as in the family, school, and community environment.

The Directorate General of Elementary and Basic Education in Kokom Komalasai (2013) explains the seven components of CTL, namely: (1) constructivism, which builds knowledge that is owned and then expanded; (2) inquiry, namely the knowledge and skills of students obtained from the results of self-discovery; (3) asking questions, namely obtaining the knowledge that students have starting from asking questions; (4) learning community, namely learning outcomes obtained from the cooperation between one student and another student; (5) modeling, namely presenting examples of

situations in learning; (6) reflection, namely thinking backward about what has been learned before; (7) the actual assessment, namely the assessment of the results of the learning process.

Ontological, epistemological, and axiological approaches to the philosophy of science and education in developing e-comic mathematics learning media, if summarized following their practical purposes, can form practical values that lead to abilities or learning outcomes. These practical values can be in the form of (1) abstract concepts that can be understood concretely; (2) complex object messages can be shown to be similar to their original conditions; (3) students can interact actively; (4) students' perceptions become uniform; (5) students' learning motivation increases; and (6) the consistency of delivering information is more effective and repeatable. These practical values will be achieved if the selection of mathematics learning media is carried out correctly, so it is necessary to consider the conditions of students, learning objectives, and the characteristics of the media used. It will be outstanding in helping the learning process be effective, efficient, and productive.

4 CONCLUSIONS

Education as a science is classified into 2: Education as a pure science and Education as an applied science. Philosophy of science is the basis for the development of mathematics learning media, especially for choosing media development according to the ontological, epistemological, and axiological approaches. This approach is oriented to the practical goals of media development, which is oriented to the practical values obtained after the mathematics learning media is applied.

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Pancasila Philosophy Thinking and Its Implementation in Education

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Keywords: Philosophy, Pancasila, Education.

Abstract: Philosophy is a thinking process that is conducted deeply with the aim of finding the real truth, while education philosophy is a philosophical rule in education that provides the description about the implementation of education in order to solve educational problems practically, because developing the education certainly requires thoughts that support the implementation of education process, this is the reason why humans need the philosophy of education. The form of education in a country originates from the ideology or philosophy that is adopted by the country itself, just like Pancasila as a philosophy that is believed by the Indonesian nation that contains the values of Pancasila with consist of five principles as a guideline for Indonesian nation in all aspects including education field. Through the philosophical of Pancasila values, the development of educational knowledge is expected to be able to make Pancasila values as a reference source in compiling the National education system as an effort to achieve National goals and objectives. Implementation of philosophy thought in education can be seen in three aspects, 1. Ontology, explains that Pancasila as a philosophy inspires the implementation of education system in Indonesia which cannot be separated from reality. 2. Epistemology, Pancasila is the values originating from the Indonesian nation which are taken from the noble cultural manifestations of the Indonesian nation. 3. Axiology, Pancasila as a life philosophy of Indonesian nation has values of divinity, humanity, unity, democracy and values of justice.

1 INTRODUCTION

Philosophy and humanity are two things that cannot be separated, because philosophy is made by humans as a way of life, very closely related to values about humans that are considered true by a society or a nation, therefore philosophy that is believed by a nation is related to the education system conducted by the nation. Philosophy is a process that is conducted in depth and earnestly to find a truth, while educational philosophy is a philosophical rule in the field of education that provides an overview of aspects of the implementation of philosophy that focuses on implementing principles and beliefs that form the basis of philosophy in order to solve educational problems practically. Jalaludin and Abdullah, 2007).

In developing the educational process, of course, it requires good and supportive thoughts, because humans have thoughts that function to solve problems

in the implementation of education, namely a process of educating humans from ignorance, starting from those who do not know, from underdeveloped traits and developing with increasingly directed and modern humans thinking, that is the reason humans need philosophy in education.

From various discussions on education, it shows that the style of education in a country originates from state philosophy or the ideology of the country itself (Pidarta, 1997), just as Pancasila as a philosophy believed by the Indonesian people contains Pancasila values which consist of five basic, the five values are the way of life of the Indonesian people as well as the identity of the nation. The precepts contained in Pancasila provide an overview of the guidelines for living as a nation and state for Indonesian people as a whole.

Pancasila a philosophy is of course also inseparable from Bung Karno's role, where at the BPUPKI meeting on June 1, 1945 Bung Karno

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proposed it as the basis of the state. And since then Pancasila has become the official philosophy of the Indonesian state. Pancasila is the philosophy of the Indonesian state which was officially ratified by PPKI on August 18, 1945 and was also contained in the 4th paragraph of the 1945 Constitution which is contained in the 4 main ideas of Pancasila, namely Belief in One Almighty God, just and civilized Humanity, Indonesian unity, and a strong democracy, led by wisdom in deliberations/representation, as well as by realizing one social justice for all Indonesian people. These Pancasila values are used as principles and guidelines that underlie all aspects of national and state life, including providing a foundation in the aspect of education.

Pancasila as the philosophical foundation of education in Indonesia, is emphasized in Article 2 of Law no. 2 of 1989 which stipulates that national education is organized based on Pancasila and the 1945 Constitution. In line with this, MPKR RI Decree No. 11/MPR/1978 concerning P4 stipulates that Pancasila is the soul of all Indonesian people, the personality of the Indonesian nation, the outlook on life of the Indonesian nation and the foundation of the Indonesian State. In line with that, Law No. 12 of 2012 Article 1 Concerning Higher Education explains that education is a conscious and planned effort to create an atmosphere learning and the learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, morals noble character, as well as the skills needed by himself, the community, the nation and the state.

Based on the law above, it means that the implementation of education in Indonesia must be conducted based on Pancasila and the 1945 Constitution, because Pancasila is the way of life for the Indonesian nation, therefore the learning process held in education in Indonesia has the aim of developing the potential and character of student, Pancasila values give influence and style to the educational process that is held, besides that Pancasila values will also reflect how education should be internalized and implemented.

Based on the description above, several problems will be studied in this paper, namely how to implement the Pancasila philosophy in education in Indonesia.

2 METHOD

The method used in compiling this article is literature study, literature study is studying various sources,

ranging from books, articles, various references related to the philosophy of Pancasilaism in education in Indonesia and its implementation in education, the same research study was also conducted so that the author gets valid and accurate conclusions.

2.1 The Basic Concept of Pancasila Philosophy

2.1.1 Definition of Philosophy

The word philosophy is etymologically derived from the Greek language, namely philosophies which comes from the verb philosophies which means to love wisdom, philosophy also comes from the verb philen which means to love, or the word philia which means love and the word sophia which means wisdom, from this word the term philosophy was born from English, namely philosophy which means love of wisdom (Asmoro, Ahmadi, 2010).

Meanwhile, when viewed from the terminology or meaning contained in philosophy, it has different meanings, in accordance with the philosophers who put it forward. Just as Plato argued that philosophy is knowledge that tries to reach knowledge of truth, meanwhile Aristotle said that philosophy is a science consisting of truth which includes the sciences of metaphysics, logic, rhetoric, economics, politics, and aesthetics, while Al-Farabi, an Arab philosopher, explained that philosophy is a science related to the nature of how the real world is advanced (Surajiyono, 2008).

Based on the terms put forward by the philosophers above, it can be concluded that philosophy is a knowledge that discusses everything thoroughly and deeply using reason and thought to its essence, philosophy discusses the nature of phenomena that occur, and when viewed from the philosophical concept of in relation to the scope of the language, it can be said that philosophy covers many subjects, such as humans, nature, knowledge, and others.

Philosophy can be grouped into two, namely: First, philosophy as a product or result of a thinking process, philosophy as a thinking process includes: 1. Knowledge, concepts, thoughts of philosophers in the past, often known as schools of thought or philosophical systems, 2. Philosophy as a problem faced by society as a result of philosophizing activities. This has the meaning that humans are in search of a truth that originates from problems that are rooted in the human mind, which is an activity or a process of deep thinking. Second, philosophy is a process, this means that philosophy is a philosophical

activity, and solving a problem can be done using methods that can be adapted to the object. Based on this philosophical grouping, it can be interpreted that philosophy is a system of knowledge that is dynamic in nature, meaning that philosophy is not limited to dogma but philosophy is an activity consisting of processes that use separate methods (Kaelan, MS, 2002).

2.1.2 Pancasila Philosophy

Bakry said that Pancasila is a philosophical system because Pancasila was born as the result of a process of reflection conducted in depth by Indonesian state educators, the results of the reflections carried out initially were conducted to formulate the basis of the Indonesian state. Apart from that, the result of the contemplation process that is conducted is said to be a philosophical system because it already fulfills the characteristics of a philosophical thought process. As for some of the characteristics of philosophical thinking are: 1. Coherent, meaning that thinking is conducted systematically which are interconnected with each other, this coherent thinking process does not contain statements that are contradictory to each other even though they are different, they must even complement each other, and each part functions and has each position. 2. Comprehensive, meaning the process of thinking as a whole, which includes all the things and symptoms that exist in human life, as the philosophy of the Indonesian nation, Pancasila is a pattern that provides a vessel for the whole life and development of Indonesian society. 3. Fundamental, meaning a thought process that is conducted with a deep contemplation process down to its roots so that it can find fundamental aspects, Pancasila as a philosophy was born and formulated based on the absolute core of Indonesian society's way of life, both in dealing with oneself, fellow human beings, and God in the life of the state. 4. Speculative, thinking through a contemplative process as an initial assumption as a fundamental pattern based on logical reasoning. As a philosophical system, Pancasila was originally the result of thinking conducted by the founding fathers of the state as an archetype which in the end could be proven true through long discussions and dialogues in BPUPKI sessions until Pancasila was ratified as the basis of the state by PPKI (Bakry, 1994).

Based on the opinion above, it can be concluded that Pancasila is a philosophical system because Pancasila was born from a deep contemplation process conducted by the founding fathers or the founders of the Indonesian state. besides that,

Pancasila was born to fulfill the elements of philosophical thinking, the second element is thinking as a whole, thinking fundamentally or its roots, and speculative thinking.

Pancasila as *Genetivus Subjectivus* means that Pancasila values are used to criticize various existing philosophical schools, both exploring things that are in accordance with Pancasila values and to see values that are not in accordance with Pancasila. Therefore Pancasila has a philosophical foundation that includes 3 dimensions: namely ontology, epistemology, and axiology.

1. The Ontology aspect, from the ontology aspect of Pancasila includes:

- a. The origin of the proof of the birth of Pancasila
- b. Pancasila's moral and juridical basis, Pancasila's ontological basis fulfills four reasons:
 - a) *Causa Material* (Origin of Materials), Pancasila is defined as the life of a nation whose values have existed since long ago, this has been implemented in customs and habits, culture and religions.
 - b) *Causa Formalis* (Origin of Forms), this has the meaning that the other origins of Pancasila originate from the thoughts of the figures formulated by the founding fathers of the Indonesian state, namely Ir. Soekarno, Moh. Yamin and together with other BPUPKI members formulated Pancasila consisting of 5 precepts as the basis of the Indonesian state.
 - c) *Causa Efficient* (Origin of Work), its meaning is the origin of the birth of Pancasila starting from being formulated by the founding figures of the Indonesian state after it was discussed at the first BPUPKI meeting and the second BPUPKI meeting until later Pancasila was ratified as the basis of the state on August 18, 1945.
 - d) *Causa Finalis* (Origin of Purpose), meaning that the origin of the birth of Pancasila as the basis of the state, was realized by the nine committees and until the formulation of the Jakarta Charter which was outlined in the Preamble of the 1945 Constitution which means that Pancasila was compiled for the basic goals of the Indonesian state (Alwi, 2015).

2. Epistemological Aspect

Epistemology is a branch of philosophy that investigates the origin, conditions, structure, methods, validity and nature of knowledge.

Epistemology examines the sources of knowledge, processes and conditions for the occurrence of knowledge, limits and validity of knowledge. Epistemology in Pancasila includes the legitimacy of sources from Pancasila as a science that can be accounted for. And it is said that Pancasila is a science if it has the same characteristics as science, some of the conditions for Pancasila as a science:

- a. Has a special object
- b. Owned by the community (communal), Pancasila belongs to the Indonesian people
- c. Skeptical, Pancasila is always questioned by people, related to the ability of Pancasila as the basis of the state and many people question the truth of Pancasila.
- d. The Pancasila precepts are systematically arranged and cannot be reversed
- e. Pancasila has the value of truth, because the value of Pancasila is proven to originate from the culture of the Indonesian people.
- f. The truth of Pancasila values is the result of an agreement with the founders of the Indonesian nation. (Alwi, 2015)

3. Axiological Aspect

Pancasila which consists of 5 precepts is the dream, ideals and hopes of the Indonesian people which will later be implemented in every aspect of national and state life. Pancasila starts from divine values as spiritual values and as the highest absolute values, then human values are derived from divine values because humans are creatures of God Almighty, divine values and human values are the highest values of unity, populist values in the precepts fourth, and the value of justice in the fifth precept. The populist precepts are a forum for implementing the realization of social justice while the precepts of social justice are the ultimate goal of the fourth precept. This is what causes Pancasila to be the dream of every Indonesian society which will later be implemented in the life of the nation.

This is in line with what was conveyed by (Notonagoro, 1980) that the unity of Pancasila values is described as a five-tiered pyramid, YME's divine precepts are at the top of the pyramid and the precepts of social justice for all Indonesian people are at the bottom of the pyramid, the Pancasila pyramidal hierarchy can be explained as follows :

- a. The precepts of Belief in the One and Only God animate and encompass the precepts of Humanity Just and Civilized, Indonesian

Unity, Democracy Led by Wisdom in Deliberation/Representation, and Social justice for all the people of Indonesia.

- b. Precepts of Just and Civilized Humanity are imbued and encompassed by precepts Belief in the One and Only God, animates and encompasses the precepts of Unity Indonesia, Democracy Led by Deep Wisdom Deliberation/Representation, and Social Justice for All People Indonesia.
- c. The precepts of Indonesian Unity are inspired and encompassed by the precepts of Belief in the Supreme God One, Just and Civilized Humanity, animates and encompasses precepts Democracy Led by Wisdom Deep wisdom Deliberation/Representation, and Social Justice for All People Indonesia.
- d. Populist Precepts Led by Deep Wisdom Deliberation/representation is imbued with and encompassed by the precepts of The One and Only God, Just and Civilized Humanity, Indonesian Unity, animating and encompassing, and Social Justice for All Indonesian People.
- e. The precepts of Social Justice for All Indonesian People are imbued and encompassed by precepts of Belief in One Almighty God, Just and Civilized Humanity, Indonesian Unity, Democracy Led by Wisdom in Deliberation/Representation (Kaelan, 2002)

2.2 Implementation of Pancasila Philosophical Thought in Education

2.2.1 Ontological Aspects of Pancasila Educational Philosophy

Ontology is a branch of philosophy that examines the nature of what exists, whose main problem is the question of reality or reality (Sutrisno, 1984). Likewise with Pancasila as a philosophy that has abstract and universal content. Pancasila as a philosophy inspires and animates the implementation of the education system in Indonesia which cannot be separated from the existing reality. This is ultimately contained in Indonesia's national education goals, namely to form a dignified national character and civilization in line with the state's goal of educating the nation's life. It also aims to develop the potential

of students to have faith and piety in YME loyalty, have noble character, be healthy, knowledgeable, capable, creative, and become democratic citizens.

Pancasila values can be seen from appreciation and experience in the life of the nation and state, especially in education, as follows:

- a. Precepts of YME God. In the national education system it is explained that national education is education that is rooted in the culture of the Indonesian nation which is based on Pancasila and the 1945 Constitution. Therefore in the educational environment (schools, families and communities) religious and Pancasila values are instilled. In practical education, subjects such as religion and Civics were developed. This subject must be able to reflect the attitude of students who have belief in God, respect between adherents religion.
- b. The Precepts of Just and Civilized Humanity. Humans basically have the same dignity and must be treated according to their nature and Pancasila values (Darmoharjo, 1988). Based on this opinion, it can be concluded that education does not differentiate between age, religion and social level and culture. And every individual has the same right to study and has the right to get the same treatment. Therefore schools must be able to form students who will be responsible, just and prosperous.
- c. Indonesian Union Precepts. Stated that Pancasila and the Constitution can foster a sense of love for the motherland and can eliminate narrow ethnic feelings and encourage equitable development, all of which can block thoughts that smell of separatism or racism. In this third precept, all groups have the same right to get education to the highest level as contained in Article 31 paragraph 1 of the 1945 Constitution.
- d. Populist precepts led by wisdom in deliberations and representation. This fourth precept describes the spirit of democracy that is developing in Indonesian society. If seen in the practice of education in Indonesia, the education process will encourage freedom in expressing opinions, including in formulating educational goals, opinions from the public are also needed for the progress and interests of education.
- e. The Precepts of Social Justice for All Indonesian People. In line with the state's goal in the opening of the 1945 Constitution that the state's goal is to realize social justice and

the welfare of the Indonesian people. And in the world of education what is said to be fair is in carrying out education that leads to devotion to God Almighty, science and technology abilities. Fair here also means that there is the same policy for all Indonesian people in an appropriate and non-discriminatory manner.

2.2.2 Epistemological Aspects of Pancasila Educational Philosophy

Epistemology is a philosophical study that examines the sources, conditions and process of knowledge, and examines the nature of science, with philosophy we can determine the goals to be achieved. (Kaelan, 2013) explains that the sources of Pancasila knowledge are values originating from the Indonesian nation which are excavated from the manifestations of the noble culture of the Indonesian nation. Pancasila values can be seen from appreciation and experience in the life of the nation and state, especially in education, as follows:

- a. The precepts of Belief in the One and Only God. In its implementation related to education in Indonesia, Pancasila is excavated from the Indonesian nation, the process of which is through the struggle of the people. So if it is connected with Pancasila, it can be seen whether knowledge is obtained through reason or comes from God
- b. Just and Civilized Humanity Precepts. (Jalaludin, 2007) the human person is a potential subject and has awareness of the world's self-existence. This means that humans have the potential to be developed. So in this second precept the process of forming knowledge through educational institutions is simpler in implementation, meaning that there should not be a monopoly on truth, in teacher education it is not the only source of learning.
- c. Indonesian Union Precepts. In this precept it is clear that education provides an example of how interaction between individuals is conducted as a natural human nature, in this case the formation of human knowledge is a process that occurs due to interaction and cooperation between humans and their environment.
- d. Populist Precepts Led by Wisdom of Wisdom in Deliberations and Representatives. In the education system, of course, it really requires awareness that educational institutions have a very large role, but institutions outside formal

education such as families and communities also need to be involved so that they can encourage each individual to have freedom in terms of expressing opinions conveyed through these educational institutions.

e. The Precepts of Social Justice for All Indonesian People. Basically the process of education conducted must aim to realize justice for all Indonesian people, fair in this case is the existence of a balance between general knowledge and religious knowledge.

2.2.3 Axiological Aspects of Pancasila Educational Philosophy

Axiology is a branch of philosophy that examines issues of value, the value in question is if it has use value, is true, moral, ethical and has religious value. This value does not arise by itself, but because there is a language used in daily interaction and communication, so that society becomes a place where values arise. Thus Pancasila as the philosophy of life for the Indonesian nation has the values of divinity, humanity, unity, democracy and values of justice (Jalaludin, 2007).

Pancasila values can be seen from appreciation and experience in the life of the nation and state, especially in education, as follows:

- a. Precepts of YME God. Belief is the most important thing in every religious teaching that can describe human religious attitudes, therefore in education it must be able to encourage humans to have a good level of religion. And of course this is regulated in the curriculum which must contain fields related to religion in learning, as is the case in the curriculum in Indonesia that from basic education to higher education contains religious education subjects as a subsystem of our national education.
- b. Just and Civilized Humanity Precepts. Education in this case must be able to encourage and foster a spirit of peace, harmony and a spirit of brotherhood in realizing human values, because this is the ideal of the Indonesian people. Education in this case does not discriminate based on descent or race etc.
- c. Indonesian Union Precepts. In this case, education must be directed at fostering harmony among people, because harmony is fundamental in realizing unity in the life of the state. This mess can be created with the

support of a spirit of self-sacrifice for the sake of the nation. In education itself, if you want to achieve educational results or goals, you must be accompanied by an attitude of willingness to sacrifice.

- d. The Fourth Precept, Democracy Led by Wisdom in Representative Deliberations. National education must be able to realize democratic life in social life, listen to each other and respect any differences of opinion that happen, it is this democratic value that animates the implementation of the Indonesian national education process, because democracy will create education that is able to free humans to understand themselves and how to understand others.

3 CONCLUSION

Philosophy is a thought process that is conducted in depth and earnestly to seek a truth, while educational philosophy is a philosophical principle in the field of education that provides color and description and forms the basis of how the implementation of education is conducted in order to solve educational problems practically. Basically, humans have thoughts that function to solve problems in the implementation of education, namely a process of educating humans from ignorance, starting from those who do not know, from underdeveloped traits and developing increasingly directed, that is the reason why humans need philosophy in education.

The style of education in a country originates from the philosophy of the state or the ideology of the state itself, such as Pancasila as a philosophy believed by the Indonesian people, in which it contains Pancasila values which consist of five foundations, these five values are the way of life of the Indonesian people as well as the national identity that determines direction in the implementation of education in Indonesia. This has the meaning that the implementation of education in Indonesia must be conducted based on Pancasila and the 1945 Constitution, because Pancasila is the way of life for the Indonesian nation, therefore the learning process held in education in Indonesia has the aim of developing the potential and character of students. It is Pancasila values that influence and style the educational process that is conducted, besides that Pancasila values will also reflect how education should be internalized and implemented.

And as a philosophy, of course Pancasila has a philosophical foundation which includes 3 dimensions: namely 1. Ontological: is an aspect that

examines the origins of Pancasila. 2. Epistemological: includes the legitimacy of the source of Pancasila as a science that can be accounted for. And Pancasila is said to be a science if it has the same characteristics as science. 3. Axiological: The values contained in Pancasila are the values of divinity, humanity, unity, democracy and values of justice.

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Implementation of the Independent Curriculum in Elementary Schools

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Abstract: The independent curriculum is a curriculum that provides sufficient time for students to explore concepts and strengthen competence. The government provides opportunities for educators and educational units according to their respective readiness. This study aims to describe the implementation of the independent elementary school curriculum in Padang City. The research method used is descriptive qualitative with a case study design. The research technique used is observation and interviews. The research was conducted in one of the elementary schools in the city of Padang with the target being teachers and principals. The results of the study illustrate that the implementation of the independent curriculum in research primary schools is still in the early stages of the 4 stages that have been categorized by the government, namely the initial stage, the developing stage, the ready stage and the proficient stage. still needed from various parties, especially educators, so that they want to learn more optimally to want to design teaching devices in accordance with the conditions specified in the development guidelines from the government for the sake of the realization of the profile of Pancasila students.

1 INTRODUCTION

Education is the right of every nation which is the main key in preparing competitive resources in every era (Winata et al. 2021) In Law no. 20 of 2003 it is clear that the purpose of education is to develop the potential that exists in students, so as to form a dignified nation. The curriculum is one of the instruments to realize these educational goals. According to Rahayu et al, curriculum is the heart of education, which is a set of lesson plans that are used as guidelines in implementing learning activities (Rahayu et al. 2022). In line with the opinion above, Martin et al also stated that the curriculum is a guide or guideline that contains objectives, content, materials and methods used for learning activities which become a benchmark for achieving educational goals (Martin and Simanjorang 2022).

The curriculum in Indonesia has undergone several changes and improvements, starting from the 1994 curriculum, the competency-based curriculum (2004), the education unit level curriculum (2006), the 2013 curriculum (2013) and now there is a learning recovery policy curriculum in order to

pursue *learning loss* (learning lag), namely the independent curriculum. The independent curriculum is a curriculum that provides enough time for students to explore concepts and strengthen competence. Learning in this curriculum is adjusted to the needs and interests of students which is the basis for educators in determining teaching tools (Kemendikbudristek 2022b). The three characteristics of the independent curriculum are project to strengthen the profile of Pancasila students, learning on essential materials and flexibility of curriculum structure (Jojor and Sihotang 2022).

Implementation of the independent curriculum, the government provides opportunities for educators and educational units according to their respective readiness. Because it takes time to study the independent curriculum in the hope that you will gradually become more proficient in using it. There are four stages in implementing the independent curriculum in education units, namely the initial stage, the developing stage, the ready stage and the proficient stage (Satria et al. 2022). In connection with the description above, the researcher is

motivated to identify and describe information related to the implementation of the independent curriculum in one of the elementary schools in the city of Padang.

2 METHODS

Qualitative descriptive was chosen as the method in conducting this research. According to Sugiyono the qualitative method is a research method related to data collected in the field and then interpreted by the researcher. Data collection in this method is carried out naturally with the aim of interpreting and analyzing phenomena without using other statistical or quantitative methods. Furthermore, the descriptive method according to Sugiyono is a method that is not used to draw broad conclusions, but analysis is carried out to explain findings in the field (Sugiyono 2012). So, qualitative descriptive method is a method that describes, describes, and analyzes objects from a particular situation. The research technique used is observation and interviews. The research was conducted in an elementary school in the city of Padang with the aim of being the principal and educators as the main source of information.

3 RESULTS AND DISCUSSION

The implementation of the independent curriculum in educational units has several stages according to the readiness of each educational unit. In the process of planning the first aspect is designing the Education Unit Operational Curriculum (KOSP). The operational curriculum is developed by educational units based on the characteristics and needs of students, educational units and regions. In addition, in its development, it is better to involve the school committee and the community. The principles for developing an operational curriculum for educational units are: (1) student-centered, meaning that it is able to fulfill a variety of potentials, developments, learning stages, and the interests of students (2) contextual, that is, unique and in accordance with the social culture and environment of the educational unit (3) essential, meaning that there are important elements, using language that is straightforward, concise and easy to understand (4) accountable, meaning that it can be accounted for, because the design process is based on actual data and (5) involves various stakeholders such as parents, organizations, education unit committees and other stakeholders (Kemendikbudristek 2022a).

The process of preparing an operational curriculum that is fixed and flexible must go through the preparation steps as shown in the following chart:

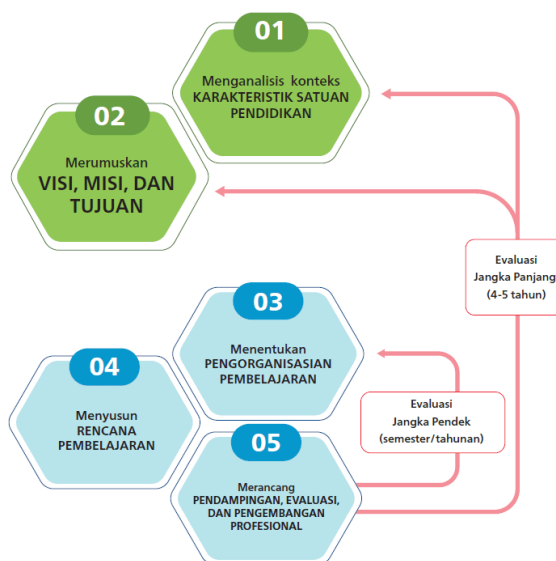


Figure 1: Steps for Preparing KOSP.

The results of research at one of the elementary schools in the city of Padang by conducting interviews and observations related to KOSP. This school has made small adjustments to KOSP provided by the government. The design is carried out by the Principal himself without involving educators, students, parents and others. The process of developing a KOSP like this based on its stages is at an early stage.

The second aspect is the design of the flow of learning objectives. The government has set Learning Outcomes (CP) as competency targets that will be mastered by students and used as the main reference in developing learning designs, especially for intra-curricular activities. However, in order for CP to be more concrete and operational, it needs to be translated into learning objectives. In compiling learning objectives, it must consider the uniqueness and characteristics of the Education Unit and according to the stages and needs of students. The stage of formulating learning objectives begins with understanding CP so that educators get ideas about what students need to learn in one phase. CP in one phase needs to be developed into several learning objectives by including competency components and scope of material in one learning objective. In research primary schools, there are 2 ways for educators to develop learning objectives, first to develop them on their own and second to develop them together in the Teacher Working Group (KKG)

forum. In preparing teacher lesson objectives, they adapt to the textbooks used by educators and students at school.

Furthermore, from the learning objectives that have been developed, the flow of learning objectives is designed. The flow of learning objectives is a new name for the syllabus in the previous curriculum, which was used for a period of one year which outlines the planning and arrangement of learning and assessment. The government also gives educators the choice of (1) designing their own, (2) developing and modifying based on examples provided and (3) using examples from the government. The flow of learning objectives that focus on CP must be logically structured, starting from the simple to the more complex, and influenced by the characteristics of the subjects and learning approaches. In the research school, educators wait for the flow of learning objectives from other schools and then change the name of the education unit according to the educator's educational unit. The following is the flow of learning objectives used by schools:

ALUR TUJUAN PEMBELAJARAN KURIKULUM MERDEKA BELAJAR						
Nama Penyusun : []						
Instansi : []						
Fase : B						
Kelas / Semester : IV (Empat) / I (Ganjil)						
Tahun Pelajaran : 2022/2023						
Mata Pelajaran : PPKa						
Elemen	Capaian Pembelajaran	Aktivitas Pembelajaran (ATP)	Tujuan Pembelajaran	Profil Pelajar Pancasila	Media Pembelajaran	Alat dan Waktu
Pancasila	Peserta didik dapat mengidentifikasi nilai-nilai Pancasila, dan menjelaskan makna nilai-nilai Pancasila, serta menunjukkan contoh penerapannya dalam kehidupan sehari-hari sesuai dengan perkembangan dan kondisi peserta didik. Peserta didik juga dapat menentukan tugas dan peran yang diberikan kelompok untuk melaksanakan kegiatan bersama-sama, mengasah ketahanan diri sendiri yang memerlukan suasana yang dalam proses belajarnya, dan membuat dan menerima hal yang dianggap berharga dan penting	<ul style="list-style-type: none"> Menghasilkan makna nilai-nilai Pancasila serta dapat memberikan contoh sikap dan perilaku yang sesuai dengan nilai-nilai Pancasila Mengaplikasikan nilai-nilai Pancasila secara individual di kelas sesuai dengan perkembangan peserta didik dan kondisi situasi (berperan contoh, membuat narasi, berdiskusi, membuat skema, dan lain-lain) Mengasah ketahanan diri sendiri yang memerlukan suasana yang dalam proses belajarnya, dan membuat dan menerima hal yang dianggap berharga dan penting 	<p>Kegiatan Belajar 1</p> <p>1. Peserta didik dapat menguraikan makna nilai-nilai Pancasila dan menguraikan makna setiap nilai Pancasila serta menunjukkan penerapannya dalam kegiatan sehari-hari.</p> <p>Kegiatan Belajar 2</p> <p>2. Peserta didik dapat menguraikan dan menjelaskan pentingnya keberagaman dalam suatu kelompok serta menunjukkan dalam kegiatan sehari-hari sebagai wujud pengamalan</p>	<ul style="list-style-type: none"> Sejarah Memperoleh dan mengorganisir informasi Mandiri Bertanggung jawab atas proses dan hasil belajarnya Gotong Royong 	<ul style="list-style-type: none"> Sejarah Video yang berkaitan dengan Pancasila Foto-foto para pahlawan Proses dan hasil belajarnya Keberagaman Sikap dan perilaku yang sesuai yang 	3 x 35'

Figure 2: The Flow of Civics Learning Objectives (Source: Educators of Class IV SD Research).

The third aspect is planning lessons and assessments. Lesson plans are designed to guide teachers in carrying out daily learning to achieve a learning goal. Thus, the lesson plan is prepared based on the flow of learning objectives used by educators so that the form is more detailed than the flow of learning objectives. Planning learning is influenced by student factors, the environment, facilities and infrastructure and others. Lesson plans are needed by educators to provide direction in the learning process so as to achieve CP. There are two learning plans, namely lesson plans and teaching modules. The government also provides examples of lesson plans and teaching modules, educators can use or adapt them to their respective students. If educators want to design their own learning modules, they must at least contain learning objectives, steps, media,

assessments, information and references. Teaching modules that help educators to be more flexible and contextual are designed with one learning objective for one module according to the flow of learning objectives that have been prepared. The teaching modules for educators in research schools also use modules from other schools and adapt them to the material in the textbooks used by educators and students. However, the modules used by educators do not meet the minimum components that must be in one module, namely the assessment component. The following modules are used by research schools.

MODUL AJAR / RENCANA PELAKSANAAN PEMBELAJARAN (RPP-)			
A. INFORMASI UMUM			
Nama Penyusun	:	[]	
Instansi	:	[]	
Mata Pelajaran	:	Seni Rupa	
Unit I	:	Menggambar Rumah Tetangga	
Jenjang Sekolah	:	Sekolah Dasar (SD)	Semester : I (Ganjil)
Fase / Kelas	:	B / IV (Empat)	Alokasi Waktu : 2 JP
Tahun Pelajaran	:	2022/2023	
Moda Pembelajaran	:	Tatap Muka	
Metode Pembelajaran	:	Ceramah, Tanya Jawab, Diskusi, Demonstrasi & Penugasan	
Model Pembelajaran	:	Pembelajaran Berbasis Penemuan (<i>Discovery Learning</i>)	
Target Peserta Didik	:	Peserta Didik Reguler/Tipikal	
Karakteristik PD	:	Umum, tidak ada kesulitan dalam mencerna dan memahami materi ajar	
Jumlah Peserta Didik	:	Jumlah yang disarankan 22 – 30 peserta didik	
Profil Pelajar Pancasila	:	<ul style="list-style-type: none"> Beriman, Bertakwa Kepada Tuhan YME, dan Berakhlak Mulia Berkebinekaan Global, Komunikasi dan Interaksi antar budaya Bergotong-Royong Kolaborasi: Bekerja sama dan berkomunikasi untuk mencapai tujuan bersama, membantu teman sekelas. Bernalar Kritis Memperoleh dan Memproses Informasi Dan Gagasan: Menunjukkan rasa ingin tahu dan dapat 	

Figure 3: Fine Arts Teaching Module (Source: Class IV Educator of Research Elementary School).

In addition to planning lessons, assessments also need to be planned. Assessment is an integral part of the learning process, used to find evidence or become a consideration regarding the achievement of learning objectives. The recommended assessments in the independent curriculum are formative assessments and summative assessments. The designed assessment is equipped with assessment instruments and techniques. Examples of assessment instruments are rubrics, checklists, anecdotal notes and progress charts. Examples of assessment techniques that can be used include observation, performance, projects, written tests, oral tests, assignments and portfolios. Educators in research schools used self-made formative assessments in the form of quizzes for students and summative assessments in the middle and at the end of the semester using written test techniques. Educators have not used other assessment instruments and techniques in conducting assessments. In compiling a summative assessment

the author begins with a grid, learning limits and adjusting to learning objectives.

The fourth aspect is the use and development of teaching tools. In an effort to achieve CP and the profile of Pancasila students, teaching resources and materials are needed. Among the teaching tools are textbooks, teaching modules, learning videos, and other forms. Apart from print media, teaching devices can also be accessed online through the independent teaching platform. The Merdeka Mengajar platform has three main features, namely learning, teaching and educator careers. In the Teaching feature there are teaching device products and student assessments. Various teaching tools in this feature can be used by teachers as references to develop teaching practices in accordance with the Independent Curriculum. In research primary schools, educators and educational units do not use textbooks provided on the independent platform but prefer books from other publishers, with the reason that they are the same as student handbooks.

The last aspect studied in this research is project to strengthen the profile of Pancasila students. This co-curricular activity is designed to achieve a Pancasila student profile, namely, 1. Faith, piety to God Almighty, and noble character. 2. Global diversity. 3. Collaborate. 4. Independent. 5. Critical reasoning. 6. Creative (Satria et al. 2022). These six dimensions are the answers to the question "What kind of students are targeted for education in Indonesia?". Through this dimension it is also hoped that Indonesian students will be able to compete in the 21st century, become superior, productive and resilient human beings. Project Interdisciplinary is a project to strengthen the profile of Pancasila students. The stages in designing project are (1) Forming a team of project facilitators, (2) Identifying the stages of education unit readiness, (3) Determining the dimensions and themes of the project, (4) Designing the time allocation for the profile project, (5) Arranging the profile project module, (6)) Determine learning objectives, (7) Develop topics, activity flows, and profile project assessments. The 4 principles of project design must also be used as a basis for designers, including holistic, contextual, student-centered and exploratory.

In education units, especially in class IV, the project is carried out 1 day in 1 week, namely Thursday, the design of this project is discussed with a team consisting of PAI educators, PJOK educators and homeroom teachers for class IV. Within 1 year there are 4 projects that will be carried out by students with the dimensions of the Pancasila profile, namely Faith, piety to God Almighty, and have noble

character, work together and be creative. For semester 1, the theme chosen is local wisdom and a sustainable lifestyle. This school also does not use project in carrying out its projects, projects are carried out based on the teacher's handbook. An example project that has been implemented in class IV is an ecobrick project, processing used plastic bottles. Educators chose project because it fits the theme of a sustainable lifestyle and feels interesting for students. The following is a picture of the project that has been done.



Figure 4: Ecobrick Project (Source: Class IV Research Elementary Educator).

Based on the 5 aspects of planning to implement the independent curriculum that have been implemented in this research elementary school, in general this school is still in the early stages of the 4 stages categorized by the government, where schools have not adapted teaching tools starting from TP, ATP, Modules, etc. to the conditions educational units and also the characteristics of students.

4 CONCLUSIONS

The independent curriculum helps realize the ideals of Indonesian education which wants to give birth to Pancasila students by accommodating students to develop according to their potential. However, implementing this curriculum requires even stronger effort. Based on the results of the research described above, educators have tried to implement an

independent curriculum in their educational units, but awareness, encouragement and motivation are still needed so that educators want to learn more optimally to want to design teaching devices in accordance with the conditions specified in the development guide from the government. In order for a Pancasila student profile to be formed, educators are needed who want to learn, want to change their mindset and want to fight together. This is in line with the thinking (Sari, Amini, and Mudjiran 2020) which states that cooperation, strong commitment, sincerity, and real implementation are needed from various parties to realize the profile of Pancasila students.

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Analysis of the Implementation of the Independent Curriculum by Utilizing the Independent Teaching Platform in Elementary Schools

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Keywords: Independent Curriculum, Project to Strengthen Pancasila Student Profiles.

Abstract: This study aims to study and evaluate how the independent curriculum is implemented in SD IT Adzkia 3 Padang's Driving School. This research is qualitative research using a phenomenological approach. The research was conducted at SD IT Adzkia 3 Padang, with the key informants being the principal, teacher, and facilitator. Data collection methods used are observation, documentation, and interviews. The analysis found that the school implemented the Independent Curriculum in one semester, and the results have shown positive progress. The stages of SD IT Adzkia 3 in implementing the Merdeka Curriculum started with forming a team, including the curriculum development team, holding various pieces of training from the ministry and the Adzkia foundation. Then formulate the vision, mission, and goals of the school according to the characteristics of the Integrated Islamic school, study and discuss the Independent Curriculum guidelines, and conduct sharing sessions with the Mobilization School facilitators, both online and offline. Principals create a dynamic and collaborative school environment by designing programs and projects. Principals, teachers, students, and other school members work with parents and other stakeholders to implement the Independent Curriculum.

1 INTRODUCTION

A curriculum comprises four components: objectives, content, learning methods, and evaluation. It is necessary to build on a foundation or foundation, namely philosophy, society, culture, personal (students), and learning theory (Zais, 1976), to carry out these four components to synergize well. The opinions above lead to the conclusion that the philosophical, social, psychological, scientific, and technological foundations are the basis for the curriculum (Safaruddin, 2020). The curriculum must be examined creatively because it is the "spirit" of education. Dynamic capabilities regularly updated and adapted to the times, science, and technology are needed by graduate users and the public. As a result, curriculum changes develop into a certainty. No more rapid advances in science and technology allow the "comfort zone" curriculum to continue in educational settings (Barlian et al., 2022).

In educating the nation's life, national education aims to develop skills and form a noble national character and civilization. Education seeks to foster students' abilities to become religious and pious people. Having noble character, being healthy, knowledgeable, capable, creative, independent, and being a democratic citizen, being responsible on behalf of God Almighty. The education system has adapted to globalization, in line with the progress of the times and an increasingly dynamic society (Ineu et al., 2022); (Gusteti et al., 2021). One of these changes is through the curriculum, which currently uses the independent curriculum.

The Merdeka Curriculum can answer educational problems such as learning loss and efforts to increase student learning motivation because it takes too long to study with the online system (Fahlevi, 2022). The government allows teachers and educators to adhere to the Independent Curriculum according to each school's readiness (Fauzi, 2022).

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As with academic units, students also learn according to their needs and readiness. Teachers and educational institutions must also learn how to implement the Independent Curriculum. The Merdeka curriculum has various extracurricular learning opportunities whose contents are well laid out so that students have enough time to learn concepts and become competent. The Merdeka Curriculum prioritizes student learning outcomes based on the Pancasila student profile (Aprima & Sari, 2022); (Zainuddin & Zmrudiana, 2022); (Setiyaningsih & Wiryanto, 2022). The Pancasila Student Profile forms students' resilience, maintains the nation's noble values, is ready as a citizen of the world, is social, and realizes 21st Century skills. It is reflected in daily behavior (Rusnaini et al., 2021). Project development to improve the attainment of Pancasila student profiles is based on a set of governance themes. Projects are unrelated to the subject matter because they are not intended to fulfill specific learning objectives (Fauzi, 2022).

The independent teaching platform is one form of utilizing technology in learning to support the independent curriculum in realizing the Pancasila student profile. This platform is an effort to transform digital-based education in Indonesia. It aims to assist teachers and principals in the success of the independent curriculum, both related to information related to the independent curriculum, references to teaching tools, and assessments for teaching in class. Based on the independent teaching platform pocketbook, five products are grouped into teacher development products and teaching and learning activities. The teacher development products include inspirational videos, self-training, and evidence of my work, while the teaching and learning products include student assessments and teaching tools.

The first product, Inspiration Video, contains a collection of inspirational videos made by the Ministry of Education and Culture and experts as a reference for increasing competency as educators. The second product, Independent Training, contains various short training materials to conduct training independently, anytime and anywhere. The third product, Proof of My Work, functions as a place for documentation of work to describe performance, competence, and achievements while carrying out the teaching and principal profession, as well as a forum for sharing good practices and getting feedback from colleagues. The fourth product, Student Assessment, is to help teachers conduct literacy and numeracy diagnostic analysis quickly so that they can apply it to learn appropriate to the stage of achievement and development of students. The fifth product, teaching

kits, contains various teaching materials to support teaching and learning activities, such as teaching materials, teaching modules, project modules, or textbooks.

On 1 February 2021, the Minister of Education, Culture, Research, and Technology inaugurated the Mobilization School program starting in the 2021/2022 school year. The driving school program is implemented in 2,500 schools in Indonesia. This program is implemented in stages. Already advanced schools become the driving force for schools that still need structured support. However, researchers and educational observers have started to discuss this program. Nadim believes that to produce graduates who fit the profile of Pancasila students, school culture must also be focused on innovation and child-centered learning in addition to administrative strategies. Meanwhile, the Ministry of Education and Culture is promoting this initiative as a form of educational reform that strongly emphasizes cultural change. By modifying students' character and the characteristics of the Indonesian school environment, this school mobilization program will serve as an entry point to a curriculum that focuses on student needs (Ineu et al., 2022).

The five interventions that make up the School Mobilization Program are interconnected and inseparable (Ineu et al., 2022): (1) Consultative and asymmetric support The Ministry of Education and Culture and local governments collaborate in a program where the Ministry of Education and Culture implements School assistance mover; (2) Increasing school human resources by strengthening school principals, school supervisors, supervisors, and teachers through one-on-one training and mentoring (coaching) programs with professional trainers; (3) Peer Education with a basic learning paradigm that is focused on developing skills and character development in line with the Pancasila precepts in the classroom and extracurricular learning process; (4) Planning based on data management based on school reflections; and (5) Digitalization of education by using various digital platforms to reduce friction, increase efficiency, increase inspiration, and achieve set goals.

SD IT Adzkie 3 Padang is a driving school and uses the Merdeka Curriculum starting from the odd semester of the 2022/2023 academic year. SD IT Adzkie 3 has implemented this program for one semester. Based on the concept of the Independent Curriculum, academic units design their operational curriculum according to the needs and characteristics of the school. For this reason, this study discusses the

implementation of the Merdeka Curriculum at SD Adzkie 3 Padang.

2 METHODOLOGY

This research is qualitative research using a phenomenological approach. This approach was chosen because the researcher wanted to evaluate the phenomena encountered by essential informants. The research analyzes phenomena, social behavior, or individual or collective thinking. The research was conducted at SD IT Adzkie 3 Padang.

The sampling technique used in this research is purposive sampling. The research subject is everyone with in-depth knowledge of the problem (key informant). The steps used to obtain data are (a) extending the data collection period; (b) making regular and profound observations; (c) using triangulation; and (d) involving colleagues in the conversation (Creswell, 2016).

The steps and techniques of research data analysis are as follows: a). all phenomena and experiences of research subjects are fully described by the researcher, b). the next researcher identifies the statements (interview findings), describes them, and develops them further without repeating them, c). then, the statement is concluded in critical parts, and a detailed description of the experience is written, d). the researcher then uses all his imaginative variations to reflect on his ideas, e). the researcher then develops all justifications for the significance and core of the explanation, and f). based on the experiences of all informants, the researcher summarizes his findings in a written report.

This study describes the implementation of the independent curriculum in SD IT Adzkie 3 Padang driving schools. Is this independent curriculum implemented well, or what obstacles are encountered, and what are the solutions? The subjects of this study were grade 1 and 4 teachers and school principals. This research was conducted through interviews, direct observation, and documentation.

3 RESEARCH RESULTS AND DISCUSSION

SD IT Adzkie 3 Padang is located in Lolong Belanti, North Padang District, Padang City. SD IT Adzkie 3 is a driving school led by Mrs. Nurmaini, S. Pd. Mobilizing School is one of the Freedom Learning programs. SD IT Adzkie 3 became a Mobilizing School and began implementing the Merdeka

Curriculum in the odd semester of the 2022/2023 school year for grades 1 and 4.

The Merdeka Curriculum is the 15th transformation carried out by the government in the context of recovering from a learning crisis, improving the quality of learning, and being the latest breakthrough in helping curriculum teachers combine various extracurricular activities, whose content will be better organized so that students have enough time to explore ideas. and build competency. The Merdeka Curriculum concentrates more on crucial material and more comprehensive learning. In addition, teachers can modify their lessons to suit students' developmental and academic status.

Implementation of the Independent Curriculum at SD IT Adzkie 3, namely; first, the Head of SD IT Adzkie formed a School Mobilization team. This team is a group at the education unit level of teachers selected by the principal and school supervisor. The committee's role is to plan, implement, and assess instruction according to student needs. The school works with stakeholders to improve teaching standards. Second, holding training on the Independent Curriculum. This training is to improve the competence of teachers and educators regarding the Independent Curriculum and how to implement it.



Figure 1: Merdeka Curriculum Training. *Image Source: Instagram SD IT Adzkie 3 Padang.*

Figure 1 is the *In-House Training* (IHT) on implementing the Independent Curriculum (IKM) organized by the West Sumatra Adzkie Foundation for Adzkie schools. This activity was held on Saturday, 16 July 2022, at the Adzkie *Convention Center* (ACC) with Mr. Dr. Sukro Muhab, M.Sc.

Because SD IT 3 Adzkie is an integrated Islamic school, this IKM is integrated with the characteristics of the Integrated Islamic School Network.

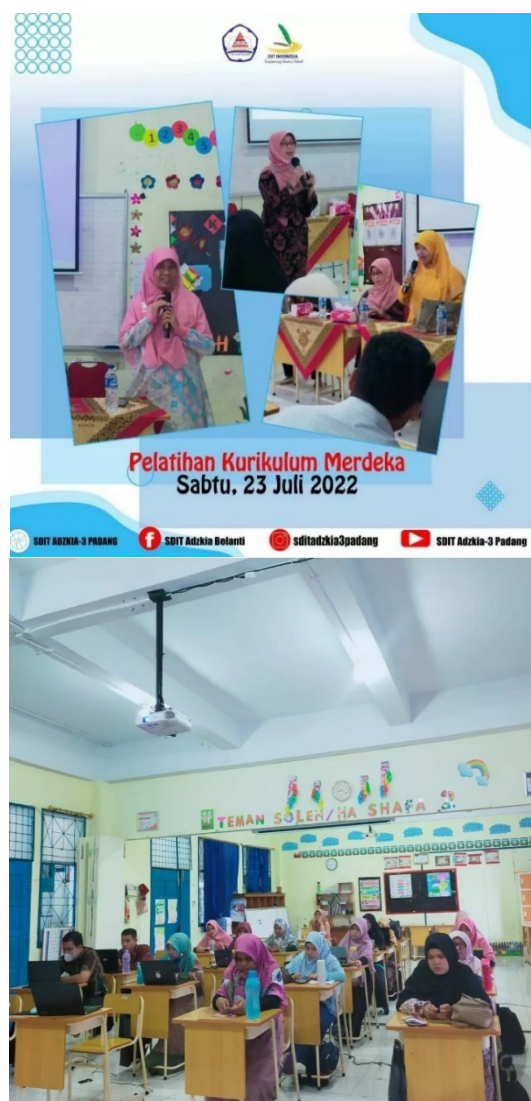


Figure 2: Merdeka Curriculum Training (Image Source: Instagram SD IT Adzkie 3 Padang).

SD IT Adzkie 3 also held advanced training at its school. This training was held on Saturday, July 23, 2022, at SD IT Adzkie 3, attended by school principals, curriculum representatives, student representatives, teachers, and school operators. An expert trainer provided the training for the School Mobilization Program, Ms. Irawati, M. Pd. This activity discusses lesson planning, assessment, and preparation of the Pancasila Student Profile Strengthening Project (P5). In addition to this training, the school regularly holds discussions with the School

Mobilization Facilitator from the ministry, which are held online and offline.

The third step is formulating the vision, mission, and goals of the school by the characteristics of the school, outlining the critical steps in line with the mission; describing the education unit plan to achieve its educational goals; and focusing on the competence and character of a school that is unique to graduates of academic units and following the profile of Pancasila students. Fourth, hold a meeting with the Curriculum Development Team. In implementing the Independent Curriculum, the school principal and the Curriculum Development Team hold regular meetings. The curriculum development team is the Principal, representatives of the curriculum sector, and the learning committee. Fifth, use guidelines from the Directorate General of Teachers and Education Personnel of the Ministry of Education and Culture in implementing the Independent Curriculum. This guide includes creating Learning Outcomes (CP), Learning Objectives (TP), and Learning Objective Flow (ATP), including teaching modules, IHT guides, and P5 guides. Sixth, discuss with supervisors, school facilitators, and foundations.

The Merdeka Curriculum innovation in raising the profile of Pancasila students seeks to produce Indonesian students who can become democratic citizens and superior and successful individuals in the 21st century. According to the Ministry of Education and Culture's Handbook, project-based learning strengthens Pancasila students by enabling participants to develop creative and inspirational works (Standards, Curriculum, and Educational Assessment Agency, 2022). Local wisdom is one of the topics discussed in the Strengthening Pancasila student profile project.

Schools must create a learning model emphasizing cross-curricular integration and choose project-based evaluation as part of the Pancasila Student Profile Project. It is intended that students get hands-on experience and learn from practice while using this paradigm. Integration of basic abilities and skills acquired by students across disciplines is possible with the learning project model, which also makes the learning structure more independent and adaptive (Shalikhah, 2022); (Saputra et al., 2022); (Rachmawati et al., 2022); (Nurasiah et al., 2022); (Khoirillah et al., 2022);(Jufri, 2022).

Teachers must be equipped to do projects that prioritize local wisdom because it is one of the themes in the project to strengthen the Pancasila Student Profile. It is necessary so that the project to strengthen the Pancasila Student Profile can be implemented successfully. It is hoped that by raising local wisdom

subjects in the Pancasila student stabilization project, education will be able to mediate the best possible growth and teaching of students' potential, especially about transforming cultural values. To achieve this, teachers must be trained to implement initiatives that will enhance local wisdom and exploit the potential of the environment to elevate the Pancasila Student Profile. Teachers can help students use project-based learning methods and models by providing them with the necessary knowledge and skills (Marzuki & Oktarianto, 2022); (Nurasiah et al., 2022); (Nisa, 2022); (Hidayati et al., 2022).

In implementing project learning, schools design projects for one semester with the stages in Figure 3.



Figure 3: Pancasila Student Profile Project Activities. Image Source: Instagram SD IT Adzkiya 3 Padang.

The project to strengthen the Pancasila Student Profile at SD IT Adzkiya 3 uses the theme "Sustainable Lifestyle" with the topic. "Charity Managed Waste Coming." The description of the activities of this project includes presenting the project program to parents of students with the theme "Sakinah Garbage Bank Survey," inviting guest teachers with the theme

"Selection of Organic, Inorganic, and B3 Waste", carrying out waste selection practices with educational visits about waste utilization to the Garbage Bank Sakinah, carried out the practice of utilizing segregated waste, held an exhibition of processed waste products with the theme "Parenting Parents with the topic of Waste Hazards."



Figure 4: A visit to the Sakinah Garbage Bank. Image Source: Instagram SD IT Adzkiya 3 Padang.

Figure 4 is the next implementation stage of the Project to strengthen the Pancasila Student Profile, namely visiting the Sakinah Garbage Bank. This activity was attended by grade 1 students and accompanied by teachers and school principals. The characters to be achieved with this project are students with a profile of belief in one God, who is independent, and who have a spirit of mutual cooperation.

Based on the results of the Project Management Office (PMO) curriculum implementation at SD IT Adzkiya 3 Padang for one semester are presented in Tables 1, 2, and 3.

Table 1: Planning Stage.

Description	Implementation
of the project to strengthen the profile of Pancasila students	Schools implementing projects to strengthen Pancasila student profiles begin with identifying problems facilitated by teachers so that project activities begin to be oriented toward understanding concepts and/or solving problems (<i>problem-solving</i>) according to the theme but not yet based on student initiative and facilitated by teachers and/or community partners involved as a facilitator or resource person so that project activities are oriented toward understanding concepts and/or solving problems (<i>problem-solving</i>) according to the theme
Application of learner-centered learning	Teachers have started using varied and learner-centered learning methods, as well as methods appropriate to the goals of learning, However, it has not yet reached the teacher to differentiate learning methods according to students' needs, achievements/performance, and interests.
Integration of assessment in learning	Teachers have started to conduct formative assessments at the beginning of learning, and the results are used to identify students who need more attention. However, it has not yet reached the point of conducting formative assessments at the beginning of learning, and the results are used to design differentiated learning according to the stage of student attainment (<i>teaching at the right level</i>).
Learning according to the learning stage of students (elementary and secondary education)	Based on the formative assessment at the beginning of learning, the teacher has started teaching all students in his class according to the learning achievement phase of the majority of students in his class and by paying particular attention to some students who require different treatment (materials and/or learning methods). However, it has not yet come to dividing students into two groups according to their learning achievements so that each student can learn according to his learning achievements.

Description	Implementation
Collaboration between teachers for curriculum and learning purposes	Teachers have started collaborating in learning planning at the beginning of the semester (planning) and in the learning process throughout the semester, discussing student learning progress, sharing good practices, sharing information about teaching tools, and collaborating on projects to strengthen Pancasila student profiles and are involved in evaluation curriculum in academic units. However, it has not yet reached the point of being involved in developing an operational curriculum for an academic unit.
Collaboration with parents/family in learning	The teacher coordinates with other teachers through the education unit to provide information about student learning progress to parents/guardians at the time of receipt of report cards and periodically in the learning process. However, there is no regular communication channel for parents to provide feedback on curriculum and learning. Parents are involved in learning, such as being resource persons in extracurriculars and/or projects to strengthen Pancasila student profiles.
Collaboration with society/community/industry	or projects to strengthen student profiles for activities that are longer term. intracurricular
learning, evaluating, and improving the quality of curriculum implementation	Some teachers carry out reflection and evaluation of curriculum implementation and learning. This reflection and evaluation are not data-based yet, but rather the assessment of each teacher based on personal experience and/or colleagues' views. However, it has not yet reached the reflection and learning by the majority or all teachers. Education Report Card data complement the reflection results (teacher's experiences and perceptions).

Table 2: Implementation Stage Implementation.

Principal Leadership Effectiveness	Description
The principal leads the planning and implementation of a student-centered learning process.	The principal ensures and builds communication and persuasive interaction of all school members in realizing a conducive school environment that has not yet reached system development.
The principal leads reflection and process quality improvement in student-centered learning.	The principal leads periodic reflection meetings involving all teachers based on data analysis, resulting in initiatives for measurable quality improvement of the learning process. However, it has not yet been developed to develop a periodic reflection mechanism that involves all teachers based on data analysis resulting in collaborative initiatives for measurable quality improvement of the learning process.
The principal leads efforts to develop a student-centered learning environment.	The principal involves all school members to participate in creating a safe and comfortable learning environment for student and teacher activities so that independent learning is always realized, but it has not yet reached the development of a
the principal system involving parents/guardians of students as companions and learning resources at school	Principals communicate the results of school development and provide opportunities for parents/guardians of students and the community to take a role in school development programs that have an impact on improving the quality of student learning but have not yet reached the development of mechanisms for
Principal participation active in networks and organizations relevant to school leadership to develop a career	Principals actively network and professional organization activities to explore a variety of learning experiences relevant to needs learn to develop a career but have not yet reached the point of creating meaningful work and/or providing services, sharing good learning practices,
The Principal shows spiritual, moral, and emotional maturity to follow the code of ethics.	The principal manages emotions, uses moral principles, and demonstrates belief in God Almighty to develop work and learning behavior that refers to a code of ethics, anticipates violations of the code of ethics, and avoids conflicts of interest. However,

	the principal has not yet reached the point where the principal helps other school leadership.
The principal develops a community of practitioners	The principal has started a community of practitioners within the education unit by introducing and forming a community of practitioners. However, it was not until the principal started moving to disseminate knowledge and good practices to other educational units.
Indicator	Description
Designing operational curriculum for educational units	Schools develop curricula based on examples from the Ministry of Education and Culture by modifying the organization and planning of learning based on analysis and reflection on conditions, facilities, infrastructure, and teaching and education staff in education units by involving representatives of students, parents, or the community. For the next semester, the school will try to develop an education unit curriculum that is contextual and in line with the aspirations of the education unit residents and the results of the education unit's analysis and self-reflection.
Designing the flow of learning objectives	The school revamped the flow of learning objectives provided by the Ministry of Education and Culture based on the needs of students. However, it has not yet reached the stage of developing learning objectives flow independently concerning Learning Outcomes Learning.
planning and assessment	The school revamped the examples of lesson plans and assessments provided by the Ministry of Education and Culture based on the needs of students. The school will then try to develop lesson plans and assessments based on the needs of students.
Use and development of teaching tools.	The teacher has combined various teaching tools to suit the local context and the needs of students. The teacher modifies some parts of the teaching modules provided by the Ministry of Education and Culture for one or part of the subject matter Furthermore, the teacher tries to be able to develop teaching modules for one or part of the subject matter and shares the teaching modules he makes with other teachers, and organizes

	teaching module development sessions on an ongoing basis. collaborative
Project planning for strengthening the Pancasila student profile	Schools have developed project ideas and modules according to the local context, needs, and interests of students by involving students' opinions and ideas

The strength of SD IT Adzkie 3 in implementing the Merdeka Curriculum is that the principal has a high commitment and continues to strive to encourage and strengthen teachers in implementing it. The school also has human resources, which the foundation always supports by increasing its competence through various forms of training. Learning facilities and infrastructure are also fully supported by the Foundation. Activities are constantly monitored and evaluated regularly, and reported. Activities are always accompanied by the agency, for example, KKG. The school has done its module and is approaching the P5 module made by the ministry. Implementation of P5 has started to show results as something that can be taken as a guide in the second semester.

What is particularly concerning to schools in implementing the Independent Curriculum is implementing differentiated learning. Teachers' understanding of differentiated learning is still lacking. Teachers need direct guidance in designing, implementing, and evaluating differentiated learning. Determining the theme of the project did not involve students. The teachers' ability needs to be continuously trained and honed to ask open questions or trigger questions to students to explore ideas from students. Schools also do not understand the form of assessment in the independent curriculum. Teachers do not understand how to make instruments and assessment rubrics. Efforts that have been made to overcome this are holding discussions with facilitators, holding discussions in Teacher Working Groups (KKG) and discussions with teams at schools, viewing videos about differentiated learning on the Merdeka Teaching Platform (PMM), holding discussions with a community of practitioners and bringing in outside instructor. There is no systematic structure of the practitioner community, scheduling, and mechanism. Teachers must learn the independent curriculum more because schools are *full days*. So it is hoped that the socialization of the independent curriculum needs to be increased by providing direct guidance to teachers consistently in designing and practicing differentiated learning, conducting assessments, making instruments, and scoring rubrics.

4 CONCLUSION

The implementation of the Merdeka Curriculum at SD IT Adzkie 3 is carried out by (1) Forming a team, (2) Holding *In House Training* (IHT) either from the ministry, foundation, or from the school, (3) Formulating the vision, mission, and goals of the school following school characteristics, (4) Formulate the curriculum of the education unit with the Curriculum Development Team. (5) Using guidelines from the Directorate General of Teachers and Education Personnel of the Ministry of Education and Culture in implementing the Independent Curriculum, (6) Carrying out guidance with the School Facilitators and Supervisors in implementing the Independent Curriculum. SD IT Adzkie 3, in implementing the Merdeka Curriculum, is supported by the Principal and HR, whom the foundation always supports by increasing their competence through various forms of training. Implementation of P5 has been carried out according to the guidelines. However, the thing to note is that the teacher's understanding of differentiation learning is still lacking. Teachers need direct guidance in designing, implementing, and evaluating differentiated learning. Teachers do not understand how to make instruments and assessment rubrics. So the hope is that the socialization of the independent curriculum needs to be increased by providing direct guidance to teachers consistently. Researchers hope that implementing the Independent Curriculum at SD IT Adzkie 3 can be continuously improved, schools can share good practices with other schools, and SD IT Adzkie 3 can become a pilot school.

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Implementation of Pancasila and Civics Learning Using Video Media in Shaping the Profile of Pancasila Students in Merdeka Curriculum in Elementary School

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Keywords: Civic Learning, Pancasila Student Profile, Merdeka Curriculum.

Abstract: Pancasila and Citizenship Education play an important role in shaping students' identities and pleasing personalities, especially in elementary schools. Civics teaches students how to be excellent and disciplined citizens. Civics learning is one of the subjects at school that teaches students about knowledge of Pancasila and Citizenship which will shape the profile of Pancasila students in the Merdeka curriculum at SDN 13 Parit Putus. This type of qualitative research with a case study approach aims to see the application of Civics learning using video media to form the Pancasila Student Profile in the Merdeka Curriculum in Elementary Schools. Data collection techniques were used in the form of interviews, observation, and documentation. The results showed that the implementation of Civics learning in the Merdeka curriculum had been conducted by teachers well, from preparing learning objectives based on the learning outcomes provided by the government to prepare the flow of learning objectives and developing teaching modules and media. However, teachers still have difficulties evaluating the Pancasila student profile and still need assistance focusing on its application at school. In addition, students still need guidance in linking the material and videos learned with the practice of the Pancasila Student Profile in everyday life.

1 INTRODUCTION

Education has an essential role in human life that helps them to survive and compete in the advanced era. Education strives to form qualified, intelligent, and forward-thinking human beings so that they can impact life. As written in Constitution, Number 20 of 2003 About the National Education System says, Education is a conscious and planned effort to create the study environment and learning process so that students can develop their potency actively for getting the strength of religious spirituality, self-control, personality, intelligence, good attitude, and the talents that needed by themselves, society, nation, and country. Achieving the educational goal needs an exact curriculum as a guide in the implementation of education itself.

One of the foundations of curriculum compiling is the sociological foundation (Khalim, 2019). The sociological foundation of the curriculum contains determining the roles of schools and teachers. As educated people involved in the curriculum, teachers must understand the condition and community personality in planning and compiling to evaluate the curriculum. Compiling the curriculum follows developments of social life and current economic condition. Furthermore, (Mubarok et al., 2021) state that the critical aspect of sociology is the values that rule community life. The teacher must see and determine the aspects that will be taught to students by looking at the social environment. The sociological foundation of curriculum shows the strategies that can stimulate students to adapt to the environment actively; cultures in the classroom that are considered passive will be suppressed so that

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learning in class becomes fun. Changes in community environment conditions certainly make the government try to adapt the education curriculum to the development of the advanced and global era, as done by Minister Nadiem Makarim, who began implementing Merdeka Curriculum to prepare students for the advanced digital era.

One of the efforts to create National education goals based on Pancasila is the Pancasila and Civics Learning subject. As a Republic Unity State of Indonesia, our nation maintains its identity and national personality with Pancasila. The nation and community personality are built from family and individual identity. Therefore, building a strong personality is necessary. This matter needs to be instilled in the young generation as the nation's next generation through Civics education that contains the moral values of Pancasila. Pancasila as the basis of the state formulated at the BPUPKI meeting on June 1, 1945. This formula was created by the founders of the Republic Unity State of Indonesia, who were involved in the meeting. The source of this formula is a noble cultural sense, the ancestor's cultural sense of the Indonesian nation in the colonialism era and before the colonialism era, like the era of the empire (Purwanta, 2018).

Pancasila and Civic learning is one of the subjects in today's newest curriculum, namely the Merdeka curriculum. The Merdeka curriculum has a design that provides opportunities for students to learn in a calm, pleasant, relaxed way, without pressure, without feeling stressed, and students can show and develop their interests and talents properly (Rahayu et al., 2022). The Merdeka curriculum is the government's effort to create a better education which can develop students' potential according to their talents and interests. The development of the Merdeka curriculum refers to the purpose of education to prepare students to live in society. Life is not just following the norms and values but also providing experiences so students can optimally develop their potential and abilities according to their talents and interests. The independent curriculum aims to answer the challenges of the current industrial revolution 4.0 education (Manalu et al., 2022). Merdeka curriculum also has a role in inheriting the nation's cultural values and preparing students to face changing times through the development of educational creativity and innovation. Besides that, the Merdeka curriculum also educates students to be critical and evaluative in choosing values that are considered beneficial to people's lives. Learning activities designed in the Merdeka curriculum are conducted in a fun, effective, recreational,

democratic, empathetic, creative and active (MERDEKA) way (Mulyasa, 2021).

The guide to Merdeka curriculum development explains that the school's operational curriculum must make the profile of Pancasila students as a foundation. Schools may add student competencies according to school characteristics but may not conflict with the profile of Pancasila students covering all dimensions along with their elements and sub-elements. This profile of Pancasila students is also used to reflect and analyze all learning programs in academic units. The profile of Pancasila students is built and enlivened in their daily life through school culture, intracurricular learning, projects that reinforce the Pancasila student profiles, and extracurricular activities. One of the efforts to form a profile of Pancasila students in intracurricular learning is through Pancasila and Civics subjects.

In the Merdeka Curriculum teacher's book published by the curriculum centre and bookkeeping of the Ministry of Education, Culture, Research, and Technology (Kemendikbud, 2021) is clearly stated that the main focus of Pancasila and Citizenship Education (PPKn) subjects is to prepare students to become behave, intelligent, skilled and character and always loyal to the nation and state by consistently implementing the habits of thought and action that reflect the values of Pancasila and the 1945 Constitution. In addition, Civics learning can also develop the ability of students to think critically, rationally and creatively in dealing with various problems as citizens, able to participate actively and responsibly in life, able to develop positively and form themselves democratically following the character of Indonesian society who can live together and side by side, and can interact in the world either directly or indirectly by utilizing technological advances.

The characteristics of Civics learning at the elementary school level are oriented toward reinforcing the national character and insight (Lubaba & Alfiansyah, 2022). Pancasila values contained in Civics learning will form the profile of Pancasila students. The profile of Pancasila students is some characteristics and competencies expected to be achieved by students based on Pancasila's noble values. The profile of Pancasila students embodies Indonesian students who are lifelong learners with global competence and reflect behavior following Pancasila values which have six dimensions as shown in the following figure (Kemendikbud, 2021).

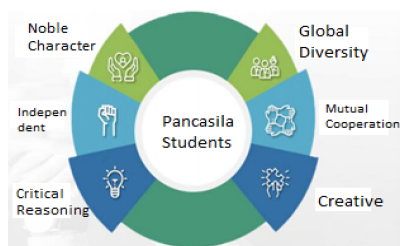


Figure 1: Ministry of Education and Culture, 2020.

Pancasila and Citizenship Education play an important role in shaping students' identities and pleasing personalities, especially in elementary schools. Civics teaches students how to be excellent and orderly citizens. Even this learning is still taught up to the college level considering the importance of this learning to shape the character of good citizens. Civics subjects in elementary schools have a critical role in preparing students to become intelligent, sound, and competent citizens following the values of Pancasila. Not only mastering knowledge but also having good attitudes and values, mastering various skills, and understanding and realizing their rights and obligations as citizens of society, nation and state (Kemendikbud, 2021).

In learning, teachers play an essential role in delivering subject matter to students. A professional teacher is a teacher who can use and utilize various types of learning media following the times and technology (Arywiantari et al., 2015) and apply it in social life. In addition, the progress of this digitalization era allows teachers to develop information and communication technology and apply it in learning (Iskandar et al., 2022).

Several things that show the importance of learning Civics for elementary school students are: 1) Reinforcing them to love God Almighty and fellow beings following Pancasila values so that they can be implemented in life; 2) Pancasila and Citizenship Education teaches students to be able to understand and carry out rights and obligations in an honest, responsible and democratic manner; 3) Pancasila and Citizenship Education provides learning to students to understand each other among citizens and instills them about *Bhinneka Tunggal Ika*; 4) Provide knowledge to students about the government system and applicable state regulations, both written and unwritten.

2 METHODOLOGY

This research discusses the Implementation of Pancasila and Civics Learning using video media to

Form Pancasila Student Profiles in Merdeka Curriculum at SDN 13 Parit Putus. This research uses a qualitative research method with a case study approach. Qualitative research aims to understand the phenomena experienced by research subjects, understanding reality through a thinking process (Adlini et al., 2022). The data collection technique in this research used interviews, observations, and documentation techniques related to implementing Civics learning using video media. According to (Arikunto, 2010), case study research is qualitative research that produces descriptive data in written or spoken words from people or observed behaviours conducted in detail, intensively, and deeply.

The sample in this study was the Civics subject teacher at SDN 13 Parit Putus. Research data were collected using observations made during the teaching and learning process. Observation is an activity conducted carefully on an object (Yusuf, 2006).

3 RESEARCH RESULTS AND DISCUSSION

Subject planning is the initial step in Pancasila and Civics learning at SDN 13 Parit Putus. The plan of learning is a thinking process that produces decisions about learning objectives. The results of these decisions are rational and well implemented and use the available learning resources such as video media (Riadin, 2019). The Pancasila and Civics learning plan requires a curriculum as a guide in its preparation. The curriculum used in Pancasila and Civics learning is the Merdeka curriculum. Merdeka curriculum is a new policy established by the Ministry of Education and Culture of the Republic of Indonesia (Kemendikbud, 2021). The concept of "Merdeka" is the ability to improve the economy, creating a learning atmosphere for students to study freely (Marisa, 2021).

Based on an interview with the head of SDN 13 Parit Putus, Mr Fauzi, S.Pd, he said 2022 would be the first year of SDN 13 Parit Putus implementing the Merdeka curriculum. For this first year, the new Merdeka curriculum was implemented in classes I and IV, each consisting of two classes, class IA and IB, which belong to group A, and IVA and IVB, which are group B. In 2022 SDN 13 Parit Putus implemented the Merdeka curriculum, namely self-changing. Independent change is an option that gives flexibility to academic units when implementing a Merdeka curriculum by using teaching tools provided in academic units.

Documentation and interviews conducted with grade IV teachers, researchers obtained information that, following the independent guidance on changing these teachers, did utilize the teaching materials and tools contained in the independent teaching platform and adapted the content to the SDN 13 Parit Putus conditions.

Pancasila and Civics learning outcomes in class IV contain four elements, each containing several learning achievement points. These elements are (1) Pancasila; (2) the Constitution of the Republic of Indonesia 1945; (3) Bhinneka Tunggal Ika; (4) The Republic Unity State of Indonesia. In the independent curriculum guide, learning outcomes should be developed by the teacher into learning objectives described in the learning objectives flow and then developed into teaching modules and video media that will be used in the learning process in class. The teaching modules developed by teachers contain profiles of Pancasila students for each element consisting of Faith and piety to God Almighty and noble character, diversity, cooperation, creativity, independence, and critical thinking.

The teacher's subject plan is quite good even though it adopts the independent teaching platform, but the teacher has revised it according to the needs of the students in the class. Implementing learning to form a profile of Pancasila students in Civics learning in the Merdeka curriculum at SDN 13 Parit Putus refers to the teaching modules and video media the teacher has previously prepared. The teaching module contains general information on teaching devices, learning activities, teaching materials, assessment, and reflection. Learning activities include initial activities, core activities, and closing activities. 1) The initial activity was conducted for 15 minutes, and the teacher started by inviting students to sing the national anthem Indonesia Raya and yelling at the Pancasila student profile. Furthermore, the teacher checked student attendance, did literacy activities and conveyed learning objectives. 2) The core activities are conducted for one hour and fifty minutes. The teacher starts the activity by dividing students into five groups, each consisting of 4 people. Furthermore, the teacher invites students in each group to play a game of compiling the Pancasila principles and their symbols. Each group competes to compose the picture in the fastest time. This activity is quite time-consuming because for fourth graders working in groups is still quite difficult because the teacher has to control students so that they work effectively in their groups. After this activity was completed, group members were asked by the teacher to come to the front of the class to show the results of their group's

work to other groups.

Furthermore, the teacher will show a teaching video containing various practices of Pancasila. This activity aims to provide direct examples to students about the practice of Pancasila values. After that, the teacher will explain in more detail the precepts of Pancasila and its values. The material discussed is Pancasila's first principle, including its meaning and practice at home, school, and the community environment. Furthermore, students are asked to work on Student Worksheets (SW) individually. The work on this SW is an assessment process in learning activities, so the teacher no longer gives practice questions as an evaluation at the end of the lesson. In the end, the teacher invites students to submit the results of their work and then provides feedback regarding the results they have submitted. 3) Closing activities were conducted for approximately 15 minutes. The closing activity concludes the student's joint learning through question and answer. Furthermore, the teacher provides motivation and conveys values that refer to the profile of Pancasila students, and finally invites students to pray to close the lesson.

Observations from the implementation of Civics learning using video media to form a profile of Pancasila students in the Merdeka curriculum at SDN 13 Parit Putus show that the teaching and learning process in the classroom has been going well. This process has been running optimally. Students are actively involved during learning because the teacher uses a variety of media, such as pictures pasted on cardboard and display material using a projector to attract students' attention.

Civics learning materials contain Pancasila as the basis of the State, with Pancasila points serving as life guidelines. In Civics learning, the teacher provides material and examples of practice directly related to real life in a social, national and state environment. This learning forms students who have faith and fear of God Almighty, have global diversity, work together, are independent, have critical reasoning, and are creative.

3.1 The Observation Outcomes of Teachers in the Implementation of Civics Learning Using Video Media to Form the Profile of Pancasila Student in Merdeka Curriculum at SDN 13 Parit Putus

The observations and outcomes of teachers who conducted Civics learning using video media at SDN

SDN 13 Parit Putus showed promising results. The teacher has conducted the teaching and learning process well. The Merdeka curriculum guides the teacher by following the teaching modules and media that have been made.

SDN 13 Parit Putus teachers held Civics learning activities as theory-based concrete actions. Theory or learning material is taught in the classroom, and students are invited to carry out activities outside the classroom for concrete actions. The teacher teaches students about the first principle of Pancasila, which reads Belief in One Almighty God, including the values of the first principle, such as carrying out worship according to religious belief.

The teacher also provides examples of activities that reflect the first principle of Pancasila, commonly applied in schools, such as praying, preaching every Friday, and reading the Qur'an every morning before starting lessons. So students are not only shown examples of the behavior of practising the Pancasila precepts but also brought to see real examples and apply them in everyday life. This activity can form student profiles following Pancasila students as described in Civics Learning. The difficulties experienced by teachers from the results of the researcher's observations were that in managing time, teachers were still not effective at managing time, so there were activity schedules that were not following the time allocation in the teaching modules.

3.2 The Observation Outcomes of Students in the Implementation of Civics Learning Using Video Media to Form the Profile of Pancasila Student in Merdeka Curriculum at SDN 13 Parit Putus

Based on students' point of view as recipients of learning, it was also found that not all students could understand the material provided by directly seeing real-life examples. Students need guidance and direction in linking these two things. It is where the role of the teacher is needed.

In Civics learning using teaching modules and video media, students are taught about Pancasila and its values. These behaviors form the basis for forming a profile of Pancasila students. At SDN 13 Parit Putus, students learn about Pancasila-based behavior in Civics learning in class and immediately see the application of this behavior in life inside and outside of school.

3.3 The Implementation of Pancasila Students Profile in Pancasila and Civics Learning Using Video Media in Fourth Grade at SDN 13 Parit Putus

The outcomes of forming Pancasila student profiles in Civics learning using video media at SDN 13 Parit Putus were quite good. It is just that the researchers found several deficiencies in implementing the teacher's learning. The method teachers use in shaping Pancasila students' profiles is only by using video media about the practice of Pancasila precepts shown to students. The teacher conveys to students what attitudes should implement in life following the Pancasila student profile. The teacher also gives directions to students about the importance of these values they have in life. However, according to researchers, this method and media are insufficient to instill a Pancasila student profile in students.

The students are supposed to be able to implement the values of the Pancasila student profile. Teachers can use various methods, such as providing examples, role-playing, and compiling local wisdom-based learning, so that in learning activities, it will direct students to expected character values. Pancasila and Civics Learning material taught by teachers in class should be focused on cultivating and applying Pancasila student profile values. The formation of a Pancasila student profile is the estuary of Civics learning in the independent curriculum, not just being a complement to the material being studied. However, from the observations, because the teacher focuses on the material, the teacher pays little attention to the character values of the Pancasila student profile, which should be achieved by students listed in the flow of learning objectives and teaching modules.

Implementing Pancasila student profiles in learning in the Merdeka curriculum should be the responsibility of all elements of education, including the government. Because from the observations, the teachers still did not understand the implementation, for example from the interviews the researchers conducted with class IV teachers, the researchers asked when the Pancasila student profile was implemented, and the teacher answered only in conducting the project to reinforce the Pancasila student profile known as P5 only, so the teacher does not implement the Pancasila student profile in other activities at school. Even though in concept, the implementation of Pancasila student profiles is not only conducted in project activities to reinforce the Pancasila student profiles but also conducted through school culture, extracurriculars, and intracurricular

learning, especially Pancasila and Civics Learning which contains Pancasila values.

The Pancasila profile must be built into students' daily lives both in and outside the classroom, not only when conducting the projects to reinforce Pancasila student profiles (P5). The teacher's lack of understanding is because the Merdeka curriculum has just been implemented in the last few months. The implementation of the Merdeka curriculum is also not accompanied by adequate outreach by the relevant agencies, so teachers still have a hard time understanding the Merdeka curriculum and its implementation in schools. Another obstacle teachers encounter is the lack of adequate infrastructure, teachers' lack of reading sources and the renewal of various learning media. Although this can be overcome with teacher creativity, with a lack of training, teachers still find it challenging to find the latest creative learning resources and media independently.

Likewise with the evaluation, within a few months of implementing the Merdeka curriculum in grade IV, the teacher admitted that they still had difficulty conducting a written evaluation or assessment of the character values of the Pancasila student profile. The teacher only observes and then directs the behavior of students deemed unsuitable with Pancasila values. Evaluating the implementation of the Pancasila student profile can be done in various ways, such as reflection through the observation process and the experience of educators whose results are shown in a written format in a portfolio or journal. Even though the teacher has conducted this reflection process in the ongoing learning process, to put it in written form, the teacher is still experiencing difficulties due to the teacher's lack of understanding of the evaluation. The role of the relevant education agency is significant in providing assistance and training to teachers regarding the implementation of appropriate evaluations for the implementation of this Pancasila student profile so that it can be used as reflecting material for improvement in the following year.

3.4 The Influencing Factors of the Implementation of Pancasila Students Profile in Pancasila and Civics Learning Using Video Media in Fourth Grade at SDN 13 Parit Putus

The data researchers obtained from interviews with school principals and fourth-grade teachers at SDN 13 Parit Putus regarding the factors that influence the formation of a Pancasila student profile: a) Factors

habits/teacher's teaching style. The teacher's teaching style focuses on the teacher center and using simple media so that the students do not involve in the learning process, causing students to have still difficulty implementing several dimensions of the Pancasila student profile, for example, critical and creative reasoning. This aspect is still not visible to some students because, in learning activities, students are rarely given activities that will make students able to think critically and creatively, such as project-based learning. Project-based activities are only conducted in projects to reinforce the Pancasila student profiles but are not implemented in intra-curricular activities in class. b) Environmental factor. The habits of students in daily life and their association with the family and community environment are the difference between one student and another in implementing the Pancasila student profile. For example, in the profile of Pancasila students with noble character, there are still students who are used to saying dirty words in social situations, sometimes, they are carried away in learning activities, so in learning, students speak in an impolite style. c) Student ability factor. The ability of students to understand the material and video presented by the teacher and implement Pancasila student profile values will differ from one student to another.

4 CONCLUSION

Based on research on the implementation of Pancasila and Civics Learning Using Video Media to Form Pancasila Student Profiles in Merdeka Curriculum at SDN 13 Parit Putus, the researchers conclude as follows:

- a. The Pancasila and Civics learning modules designed by the teacher are pretty good. The teaching modules have been prepared according to the learning outcomes, which are then developed into learning objectives and the flow of learning objectives. The learning objectives flow contains the expected Pancasila student profile of each competency and learning achievement.
- b. The use of video media in learning is good enough. Teachers use videos to show examples of Pancasila practising behavior to students. By seeing examples of this behavior, students will automatically be able to form a Pancasila students profile within themselves, which requires actual practice in everyday life for its application.
- c. Implementing Pancasila and Civics learning to form a student profile is quite good. The teachers

conducted learning activities according to the steps in the teaching modules prepared beforehand. However, the drawback is that the dimensions of the Pancasila student profile are less focused on learning. Teachers are still focused on the material, and only a few learning activities lead to forming a Pancasila student profile. It is better because Pancasila and Civics Learning material already contain Pancasila material, so the character values that will form the profile of Pancasila students are increased even more.

- d. Pancasila and Civics learning is evaluated following the Merdeka curriculum's evaluation. However, the evaluation for the profile of Pancasila students is only conducted by the teacher in project activities, namely the project to reinforce the profile of Pancasila students, which is conducted separately from learning in class.
- e. The factors influencing the implementation of Pancasila and Civics learning using video media to form the profile of Pancasila students at SDN 13 Parit Putus are as follows: teachers' teaching habits/styles, teaching media, environmental factors, and student ability factors.

Implementing Pancasila and Civics using video media learning to form Pancasila Student Profiles using Merdeka Curriculum at SDN 13 Parit Putus is generally reasonable. According to the teaching module, the teacher has conducted Pancasila and Civics learning, which contains citizenship material and Pancasila values. However, the teacher is still experiencing difficulties regarding the evaluation profile of Pancasila students and still needs assistance to focus on its implementation in schools.

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Implementation of Humanistic Learning Theory on the Independent Learning Curriculum in Harapan Kita Kindergarten Sungai Liku Pesisir

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Keywords: Implementation, Humanistic Learning Theory, Merdeka Curriculum, Tk.

Abstract: This study discusses the application of humanistic learning theory in Harapan Kita Kindergarten. The curriculum has a very important role in achieving the direction and goals of education. The independent learning curriculum is one of the approaches that can be used in early childhood education. Students in this humanistic learning theory are considered as subjects who are free to determine the direction of their life. Learners are fully responsible for themselves in the educational process (Faiz & Kurniawaty, 2020). The concept of independent learning designed by the Ministry of Education and Culture is related to the humanistic learning theory pioneered by Abraham Maslow. Education or teachers must be able to carry out the curriculum used in schools so that the teaching and learning process can be carried out. The purpose of this study is to see the effect of the implementation of humanistic learning theory on the Independent Curriculum, learning is stimulated from an early age. The Independent Curriculum prioritizes the needs and interests of students according to the definition of independence. Through the Independent Curriculum which includes extracurricular activities, and the Pancasila Student Profile Strengthening Project. Humanistic learning is learning that optimizes the potential of children as human beings. In their activities, children fulfill their basic needs in self-actualization. In the learning activities it can be seen that the children at Harapan Kita Kindergarten are actively involved in playing and the teacher facilitates learning according to the interests and needs of the children.

1 INTRODUCTION

The independent curriculum is a curriculum development policy issued by the Ministry of Education and Culture for the recovery of student learning in schools. The independent curriculum is implemented from the levels of PAUD, SD, SMP, SMA, SMK, Special Education and Equality. The essence of an independent curriculum is independent learning. Freedom to learn is a vision built on the thoughts of Ki Hajar Dewantara, who stated that independence is an educational goal as well as an educational paradigm that needs to be understood by all stakeholders (Purba et al., 2021).

Minister of Education and Culture No. 22 of 2020 concerning the Strategic Plan of the Ministry of Education and Culture for 2020-2024, in terms of pedagogy, it is stated that the Freedom to Learn policy will move away from a standardized approach towards a heterogeneous approach that is more

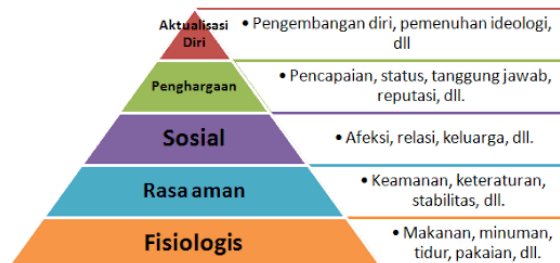
complete, enabling teachers and students to explore a growing body of knowledge. Students are learning leaders in the sense that they are the ones who make teaching and learning activities meaningful, so that learning will be adjusted to the level of ability of students and supported by a variety of technologies that provide a personal approach to the progress of each student's learning, without neglecting the importance of aspects of socialization and working in groups to foster social solidarity and soft skills.

This policy leads to the concept that students can explore their individual interests and talents. The Independent Curriculum Policy at the PAUD level gives students the freedom to be able to move freely choosing the activities they are interested in through playing. Playing for early childhood is learning. Learning is a process to explore, reason, think critically and find new things from what you do. Playing meaningful and fun for early childhood aims to develop the effectiveness and capacity of the child's brain. Freedom in choosing activities

according to interests is in line with humanistic theory which views humans as subjects who are free and independent to determine the direction of their lives. Students act as the main actors (student centers) who interpret the process of their own learning experience. The process of students understanding their own potential is expected to be able to develop their potential positively and minimize negative potential (Thobroni, 2015).

Humanistic theory encourages individual learning where students can learn subject matter at their own pace and in their own way of achieving goals. Humanistic theory pays attention to individual differences in the learning process. Personality growth and individual development are a concern in this theory (Aradea & Harapan, 2019). The main concept in this humanistic learning theory is how learning can humanize humans.

Humanistic learning is based on what is human needs in everyday life. Humans are different from other organisms and have physiological needs and psychological needs. Maslow in Shahrawat and Shahrawat (2017) put forward 5 (five) hierarchies of human needs as basic needs that must be met by humans in their lives. These human needs such as; physiological needs, needs, safety, love, self-esteem, and self-actualization.



Humanistic learning theory is a theory that aims to humanize humans. Parties who are humanized in the narrow sense are teachers and students. Teachers give freedom to their students in choosing what they learn according to their needs (Nasution, 2020; Nursikin, 2016; M Yusuf & Arfiansyah, 2021). Students in this humanistic learning theory are considered as subjects who are free to determine the direction of their lives. Students are fully responsible for themselves in the educational process (Faiz & Kurniawaty, 2020). Students can develop critical and creative thinking skills through meaningful learning. The concept of independent learning designed by the Ministry of Education and Culture seems to be related to the humanistic learning theory that was pioneered by Abraham Maslow long ago. Of course, this relationship needs to be analyzed by means of a

supporting literature review for the two topics in order to find common threads from these two hats. The concept of independent learning that liberates the minds of teachers and students is expected to be able to humanize humans and become a place for students to develop critical, innovative and creative thinking. Based on the description of the background that has been previously described, the problem at the heart of this study is how the concept of independent learning is designed by the Ministry of Education and Culture, how is the theory of humanistic learning, and how is the concept of independent learning in the perspective of humanistic learning theory.

2 METHOD

The type of research used in this study is the research method used is a qualitative descriptive method. According to Sugiyono (2016) the qualitative research method is a method used to examine the condition of natural objects where the researcher is the key instrument. According to Nazir (2014) descriptive research examines the status of human groups, objects, conditions, systems of thought or current events with the aim of making systematic, factual and accurate descriptive of the facts studied. According to Nana Syaodih Sukmadinata (2011: 73), qualitative descriptive research is intended to describe and illustrate existing phenomena, both natural and human-made, which pay more attention to characteristics, quality, interrelationships between activities. Data collection techniques used are observation, interviews and literature/documentation studies.

3 RESULTS AND DISCUSSION

According to Mulyasa (2012: 16) early childhood is the first stage which is critical and crucial in the process of growth and development of human existence. Early childhood is a period of personality development that will shape how children will live their next life. The "golden age" is referred to as childhood. "Golden Age is a very meaningful age for children's lives in the future," claims Windayani (2021:1). It serves as a basis for teaching children how to develop a variety of cognitive, motor, linguistic, social and other skills. Law No. 20 of 2003 concerning the national education system provides a statement where early childhood is a coaching effort for children aged birth to six years who use

educational stimuli to increase physical and spiritual development so that children are ready to continue on to an advanced level of education. Early childhood is defined by Windayani (2021: 3) as between the ages of 0 and 8 years, shown in instructional programs in kindergartens, family daycare facilities, private and public preschools, kindergartens, and elementary schools.

According to Syamsu (2007, 141) The uniqueness of human attributes, especially those related to free choice and self-development capacity, is highlighted by humanistic theory, which can be understood as a theoretical direction. According to the idea of humanistic learning, students can reach their full potential by making people like them more. According to humanistic learning theory, learning is successful when the learner is aware of his environment and himself. Students must strive throughout the learning process to gradually achieve self-actualization. The purpose of this learning theory is to understand learning activities from the side of the actor not from the observer. Kartono and Gulo (1987: 207) provide a statement where humanistic psychology is a realm of psychology that places a strong emphasis on treating individuals as whole beings, emphasizing subjective awareness, investigating significant human challenges, and improving human life processes. According to Saam (2010: 60), humanistic theory holds that individual behavior is influenced by the way he views himself and his environment, as well as by internal factors. From a humanistic point of view, educators must consider students' needs for affection. According to the humanistic learning philosophy, students are more compassionate, individual, and student-focused. Dalyono (2007: 43) that the problem of how people get influence and direction by the personal goals they give to their own experiences is the essence of humanistic psychology. Teachers in humanistic schools believe that the preparation and presentation of course material must take into account the emotions and interests of students. According to Sadulloh (2006: 173), humanistic psychology places great emphasis on one's freedom of choice, sensitivity, and personal accountability. Humanistic psychology emphasizes individual accomplishments, motivations, emotions, and desires, as its themes suggest. Individual self-actualization, according to this view, is the goal of education.

To achieve humanist education, learning patterns or cultures should be applied in schools. This pattern is an educational pattern that is positive and has humanist values, such as a democratic education pattern, an education pattern that pays attention to the

uniqueness of students in learning, an education pattern that maintains harmonious relations between school members, both between students and students, teachers with teachers, as well as teachers with students (Suswanto et al., 2015). The learning principle in the Independent Curriculum is through differentiated learning, namely the variety of services from a review of differences in the characteristics of students. Differentiated learning is learning that accommodates, serves, and recognizes the diversity of students in learning according to students' readiness, interests, and learning preferences (Tomlinson, Moon, Imbeau, 2015). Every learner has various kinds of differences in abilities, experience, talents, interests, language, culture, way of learning, and many other differences. The learning process needs to pay attention to the differences in students and provide services that suit the needs of their students. Providing services that are adjusted to the level of readiness, interest and learning profile of students (learning styles) is a form of liberating students in learning. Freedom to learn means that students are not required to be the same in all respects as others. Each individual has their own space for movement according to their characteristics and needs. The freedom of movement to carry out learning is in line with humanistic theories that lead to humanizing humans. The direction of independent learning for students is focused on how each individual is influenced and guided by himself related to his experiences. Independent learning provides opportunities for students to obtain meaningful learning. According to Ausubel (in Thobroni, 2015) learning is said to be meaningful if the information that students will learn is arranged according to the cognitive structure that students have, so that students can associate new information with their cognitive structure.

The Independent Curriculum is an option or alternative for schools depending on how well the readiness of each school is in its implementation. This shows that schools are not forced to use the Self Curriculum in the part of their education program that is not yet enrolled in a driving school. When it comes to carrying out the curriculum and achieving its goals, the teacher plays an important and vital role. The ability to carry out and succeed in the teaching and learning process using the curriculum used in schools is a requirement for an educator. The success of implementing the ongoing curriculum will be measured by the teacher's ability to carry out the curriculum. Whether the curriculum is used in educational settings depends on the teacher's knowledge and ability to understand the relevant

curriculum. According to Minister Nadiem, teachers must first introduce children to the importance of freedom of thought. According to Nadiem, learning occurs as a result of the process of combining teacher competencies at all levels with the existing curriculum and basic competencies.

Technology can be used as a tool by educators to facilitate the educational process. In addition, students can also explore more knowledge and carry out different learning processes. Learning in class can be made more fun by implementing technology-based learning innovations. In the current digitalization era, almost all access to information and materials can be found in cyberspace, both accessing pages and applications. The Ministry of Education and Culture is very aware of the current needs, because by utilizing technology it can reach and distribute policies more broadly, as well as optimize the implementation of the Merdeka curriculum through a differentiated learning process. During differentiated learning, there must be classrooms that support an environment where everyone in class is welcomed and accepted, everyone respects each other, students feel as safe as possible in their class

Teaching to achieve student success. There is a real sense of equality by students, teachers and students work together to succeed. (Ulamoliddinova 2019: 321). The use of technology can be a teacher's choice to carry out differentiation learning in the classroom. According to, Li and Atkins in Genevieve Marie Johnson (2010) note that exposure to computers during the preschool years is associated with the next child's school readiness which greatly influences children's development. Kumtepe (2006) observed that computer literate children assessed by their teachers suggested that children's social skills were higher than children who were less computer proficient. According to Fischer and Gillespie in Sharon A. (2004). Explaining the results of their research in the Head Start class, showing that programs in computers such as (1) computer software can encourage children to explore and go beyond their thinking, (2) computers are just another option in class, (3) computers are a bridge for children to think abstractly, and (4) computer technology can stimulate behavior among children.

Humanistic psychology is the product of many people and the synthesis of various ideas, especially existential and phenomenological ideas. Humanistic psychology is part of the universal humanistic movement, which also includes social sciences, education, biology, and the philosophy of science, and is an expression of a larger view of the world. According to Brewster Smith (1969), he was a

member of a larger movement that aspired to create a human science that was also aimed at humans and promised to be fair to human humanity. According to humanistic thought, education must begin with the aim of making human beings more like themselves. Therefore, compared to learning psychology, humanistic learning theory has a more abstract nature and is more closely related to the study of philosophy, personality theory, and psychotherapy. Content learned from the learning process itself is a major topic in humanistic theory. This learning theory focuses more on educational ideas that help create the perfect person and the best possible learning environment. In other words, unlike other learning theories, this theory is more concerned with the idea of learning in the most ideal conditions than understanding the actual learning process. This humanistic notion can be observed in action in Ausubel's learning strategy. According to his understanding of learning, which is also part of this cognitive school, learning is a meaningful integration. Acquired knowledge is integrated with previous knowledge and linked to newly learned topics. Absorption of new knowledge on the existing cognitive structure of learners depends on motivation and desire on their part, therefore motivational factors and emotional experiences are very decisive in the learning process. According to humanistic theory, any learning method can be applied as long as its goal is to humanize humans, which includes maximizing self-actualization, self-understanding, and self-realization of learners.

The goal of humanism is in line with the goal of designing the independent learning program, which is to humanize humans (Yamin & Syahrir, 2020). Teachers and students are free to determine learning methods, methods, objectives, materials, and assessment techniques as long as they are in accordance with the goals set by the curriculum. Teachers freely translate the curriculum according to their wishes and creativity. The teacher determines how to learn together with their students. There is freedom of thought in this independent learning. Teachers and students can actualize themselves optimally so that the learning process takes place in a meaningful and meaningful way. Understanding that each student has differences is learning that is very appropriate to the needs of students. That's why in humanistic theory it is conveyed that teachers should not blame students for a student's mistake before the teacher conducts a further review regarding whether the needs of students as human beings have been fulfilled or not. Learning can be done anywhere both in the classroom and outside the classroom. Learning

becomes meaningful if learning can be done by providing direct experience to students and in accordance with the needs of students. Students are not limited in exploring the environment with a full sense of security so that students can maximize self-actualization. Individual learning on the concept of independent learning is in accordance with humanistic theory where students learn according to their abilities without being anxious compared to other students. The role of the teacher here is as a mover, moving weak students to become more understanding by obtaining more training and learning and moving students who already understand competence to become richer with knowledge. Individual success is largely determined by the individual himself. Therefore, Rogers in Rachmahana (2018) said that learning in humanistic learning theory should not be excessively dependent on anything by a student. Students recognize themselves, know their weaknesses and strengths so they can get the best way they choose to acquire the knowledge demanded by the curriculum. Assessment on humanistic theory is also in line with the concept of independent learning where assessment is not only carried out on results but also on the learning process. Assessment also should not ignore aspects of the attitudes that become the personality of students. Assessment is not the only decision in determining whether the learner is achieving or not. Assessment must be carried out thoroughly and there is no ranking system which causes a lot of anxiety for students and parents of students. The ranking system will only create gaps that lead to teacher subjectivity in assessing individual students. In the process of liberating students in thinking, a driving teacher is needed who of course has gained freedom of thought. Teachers need to guide and direct their students in recognizing individual students so that students can make the right decisions in determining how to learn (BPK Penabur, 2020; Rezeki, 2020; Wijayanti, 2020). Teachers are no longer burdened with administrative tasks so that teachers have more time to explore the potential of themselves and their students. The teacher is also not burdened with making a lesson plan with many pages which can make the teacher frustrated and tiring. Free learning frees important figures in education, namely teachers and students. Freedom of thought which is very important is pursued first (Bentri & Hidayati, 2020; Faizah, 2020; Manalu, 2020).

The independent learning curriculum is one of the approaches that can be used in early childhood education. Different teachers view the Independent Curriculum differently. The notion that the

Independent Curriculum prioritizes the needs and interests of students is in line with the definition of independence. The New Paradigm Independent Curriculum aims to develop students to become lifelong learners through learning. An important feature of the Pancasila Student Profile includes lifelong learners. Through the Independent Curriculum which includes extracurricular programs, and the Pancasila Student Profile Strengthening Project, the learning process with a new paradigm is carried out in PAUD. Meanwhile, there are extracurricular programs other than PAUD. This is in line with the characteristics of PAUD learning which believe that every child has a distinctive appearance and has the potential for both strengths and weaknesses. Supriano's assertion, Director General of GTK, that the curriculum concept gives schools independence to interpret the basic competences of the curriculum itself and become an assessment for each school, supports the PAUD teacher's perception that an independent curriculum is a dynamic curriculum. The evolution of an increasingly sophisticated and dynamic era is the cause of curriculum adjustments. The curriculum is adaptive and dynamic, constantly changing by taking into account the characteristics of students and building competencies according to their current and future needs. One option in the effort to restore learning for educational units is the Independent Curriculum. The findings indicate that instructors are more inventive learners because of the Self-Curriculum. The function of the curriculum for teachers, aims to assist students in learning. Teachers are now more creative and flexible in designing their activities to achieve student-centered learning goals thanks to the Pancasila Student Profile Strengthening Project activities. Teachers can concentrate on improving learning outcomes in early childhood through the Independent Curriculum. Learning outcomes in PAUD based on Ministerial Decree 033/H/KR/2022 include identification, basic literacy skills, arithmetic, science, technology, engineering, and art. They also incorporate religious and ethical principles.

4 CONCLUSIONS AND SUGGESTIONS

The implementation of Independent Curriculum as proclaimed by the Minister of Education and Culture becomes means of improvement and development sustainable education unit especially the students and educators. This can be seen from the concept and the

advantages of independent curriculum, the implementation of independent curriculum through teacher's teaching module as well implementation in learning. Humanistic learning is a learning theory that treats students as active participants in the learning process. The idea of a humanistic learning process that pays attention to what is needed and interests of students is a fundamental idea in the field of education. Teachers are more inventive in class due to Self Curriculum. The goal of a teacher's curriculum is to direct student learning. Teachers are now more creative and flexible in designing their activities to achieve student-centered learning goals thanks to the Pancasila Student Profile Strengthening Project activities. Teachers can concentrate on improving learning outcomes in early childhood through the Independent Curriculum. According to Ministerial Decree 033/H/KR/2022, learning outcomes for PAUD must cover identification, basic literacy skills, mathematics, science, technology, engineering, and arts. These results are consistent with instructors stimulating play and offering carefully planned learning through stimulation in carefully planned situations to maximize the potential of young children. The idea behind incorporating early childhood education into the curriculum calls for convenience for practitioners and the general public.

Suggestion

Related to the implementation of the independent curriculum, the sustainable monitoring and coaching by the central and local government can be done in accordance concept that has been developed so that there is education equity, achievement of the goals of national education and reinforcement of the profile of Pancasila student.

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Analysis of Problem-Solving and Mathematical Communication Ability Levels and Students' Readiness to Use Augmented Reality (AR) Technology in Class VII Junior High Schools and MTS

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Keywords: Preliminary Research, Problem Solving, Mathematical Communication Ability, Augmented Reality (AR).


Abstract: This research was conducted to analyze the level of problem-solving and mathematical communication abilities of class VII students, carried out in May-June 2023 in 3 schools, namely MTS Al Khikmah Kerinci, SMPN 2 Sungaipuh, and SMPN 1 Kerinci. The research subjects consisted of 1 class from each school with 46 students. The method used in this study is a qualitative approach. This study focuses on the level of students' abilities related to students' problem-solving and mathematical communication abilities in understanding the concept of flat shapes in class VII Junior High School with descriptive analysis. The instrument used in this study was a test instrument that described the ability to solve problems and mathematical communication in flat shapes with as many as 3 items. The results showed that the problem-solving abilities of MTS Al Khikmah students were still low, namely 26.91%, while their communication skills were 18.05%, also in the low category. At the same time, the ability to communicate is 19.41% in the low category. Likewise, with SMPN 1 Kerinci, students' problem-solving skills are in a good category, namely 55.55%, while their communication abilities are 22.68% in the low category. Based on these results, a new learning model or method is needed to improve the students' problem-solving and mathematical communication skills.


1 INTRODUCTION


Mathematics is a form of culture (Madusise, 2015; Bishop, 1994). and local wisdom (Yustinaningrum, Nurliana, and Rahmadhani, 2018). Culture-related problems will surround the process of learning mathematics, even all forms of mathematics (Sroyer, Nainggolan, and Hutabarat, 2018). It means that culture and mathematics education can be connected and have a close relationship (D'ambrosio, 1995; Normina, 2017; Safitri, 2022), is also closely related to the cultivation of character in learning mathematics through ethnomathematics (Engen, 2021). Mathematical knowledge and teaching cannot be separated from historical background, games, artifacts, music, customs, technology, and daily activities, and develop mathematical concepts through these cultural values and customs to solve life


problems. (Prahmana and D'Ambrosio, 2020 ; Embong *et al.*, 2010). It is supported by the determination of the 2013 curriculum that the teaching and learning of mathematics must be relevant to the daily lives of students (contextual) or contextual problems. (Brier and lia dwi jayanti, 2020 ; Wahyudi, Suyitno and Waluya, 2018 ; fransisco, 2020 ; Machali, 1970).

One of the subjects which is a form of culture is Mathematics, and Mathematics has been integrated into every aspect of people's lives wherever they are (Bishop, 1994). Mathematics nowadays is not only about formulas and theorems but already uses technology and culture in the learning process. Therefore, teachers must be able to show students that mathematics has a close relationship with culture and everyday life, both in the process and in the learning content.

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Learning using cultural elements has several obstacles, including difficulty bringing students to places of cultural objects to be observed. One application that can be used to overcome this problem is Augmented Reality (AR). Several researchers (Azuma, 1997; Sirakaya and Alsancak Sirakaya, 2022) define AR as a combination of real and virtual objects in a real environment in three dimensions. The use of AR technology is proven to increase the interaction of learning activities, understanding concepts, and visualizing geometry (Lestari, 2022), support teaching and learning about geometric topics to be more interesting (Kirner, Reis and Kirner, 2012; Corrêa *et al.*, 2013) because AR allows users to see objects in books in real terms (Yasin, Isa and Endut, 2016).

Mathematics is an activity that must be related to the reality of everyday student life (Adjie, Putri, and Dewi, 2020; Sunzuma and Maharaj, 2021). In learning mathematics, one of the abilities that students must have is the ability to solve problems and mathematical communication.

Problem-solving ability is the potential a person or student possesses to solve story problems, solve non-routine (different) questions, and apply mathematics in everyday life to find solutions or solve problems in mathematics (Setiawan *et al.*, 2022). Lack of student problem-solving abilities causes students only to be able to work on routine questions or questions that are the same as those given by the teacher so that students are not used to working on questions that are not routine which results in students experiencing mistakes in solving math problems.

Mathematical problems that begin with the context of story questions, culture, and daily life are believed to improve students' mathematical problem-solving and communication skills (Setiawan, Fauzan, and Arnawa, 2021; Fauzan and Yerizon, 2013). However, the assumption that mathematics is far from culture and everyday life and is only numerical and abstract still exists among mathematics teachers. (Fredy, Riwu and Purwanty, 2022 ; Ulya and Rahayu, 2022 ; Setiawan *et al.*, 2023).

The 2018 PISA assessment showed that as many as 71.9% of Indonesian students could only complete PISA questions below level 2 (OECD, 2019). It means that more than half of students in Indonesia are only able to solve level 1 questions and cannot answer PISA questions correctly at all. While the PISA questions consist of 6 questions, where level 1 is the lowest and level 6 is the highest. Considering that the PISA study mostly measures the ability to reason, solve problems and argue rather than measure

memory and calculation abilities, this shows that the problem-solving abilities of Indonesian students are still low, as well as the mathematical communication abilities of students. In contrast, the ability to reason is still low.

This study aims to see whether the low level of students' mathematical problem-solving and communication abilities at the national level is the same as in the field. Therefore the researcher took the title Research Analysis of Levels of Mathematical Problem Solving and Communication Ability and Student Readiness in Using Augmented Reality Technology (AR) in Class VII SMP and MTS in Kerinci Regency and Sungai Full City.

2 METHODOLOGY

The method used in this study is a qualitative approach. This study focuses on students' ability related to students' problem-solving and mathematical communication abilities in understanding the concept of flat shapes in class VII SMP using descriptive analysis and students' readiness to use the Augmented Reality (AR) application. The instrument used in this study was a test instrument that described the ability to solve problems and mathematical communication in flat shapes with as many as 3 items. The research was conducted in May-June 2023 in 3 schools: MTS Al Khikmah Kerinci, SMPN 2 Sungai Penuh, and SMPN 1 Kerinci.

3 RESEARCH RESULTS AND DISCUSSION

Based on the results of tests that have been carried out in 3 schools, namely MTS Al Khikmah Kerinci, SMPN 2 Sungaipuh, and SMPN 1 Kerinci, the level of problem-solving and mathematical communication abilities of students is obtained using the following categories:

Table 1: Criteria Level of problem-solving ability.

Percentage	Category
$80 < X \leq 100$	Very good
$60 < X \leq 80$	Good
$40 < X \leq 60$	Moderate
$20 < X \leq 40$	Low
$0 < X \leq 20$	Very low

Table 2: Criteria for Mathematical Communication ability level.

Percentage (%)	Category
81 - 100	Very good
61 - 80	Good
41 - 60	Moderate
21 - 40	Low
0 - 20	Very low

Furthermore, after the test results of students' problem-solving abilities and mathematical communication were examined, the following results were obtained:

3.1 Level of Problem-Solving and Mathematical Communication Ability at MTS Al Khikmah Kerinci and Readiness to Use the Augmented Reality (AR) Application

MTS Al Khikmah Kerinci is one of the best private MTS in Kerinci. Based on the results of observations, interviews, and giving tests of students' mathematical problem-solving and communication skills, the following results are obtained:

Table 3: The level of problem-solving and mathematical communication abilities of students at MTS Al Khikmah Kerinci.

Question Number	The average level of mathematical ability	
	Problem-solving	Communication
Question 1	25,73 (Low/Less)	
Question 2	28,10 (Low/Less)	
Question 3		18,05 (Very low/very less)

Table 3 shows that the level of problem-solving skills at MTS Al Khikmah is still in the low/deficient category, while the level of communication skills is also in the low/deficient category. Based on the results of the interviews, it was also known that students had never known about Augmented reality (AR) as well as with teachers, so before carrying out further research, it was necessary to conduct socialization and training in advance for teachers and students.

The following is an example of student answers in solving mathematical problem-solving and communication questions:

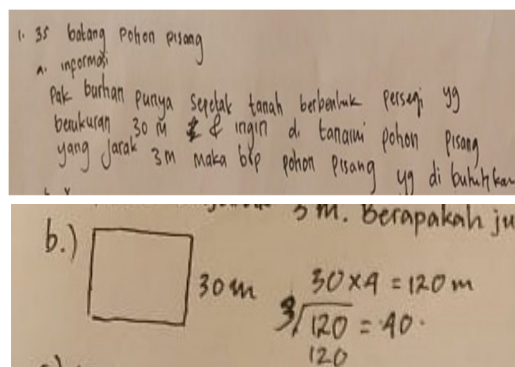


Figure 1: The correct answer to question number 1.

In question number 1, indicator 1, there was 1 student who could answer correctly, like picture 1, by mentioning what was known from the question and what was asked.

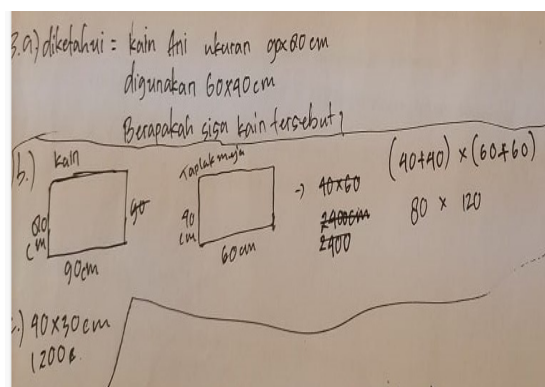


Figure 2: Students' Answers to Mathematical Communication Skills.

Figure 2 shows that the students can describe the questions through pictures and diagrams. Most students do this.

Based on the analysis of students' difficulties in solving problem-solving questions, many lie in indicators 2, 3, and 4, wherein determining strategies and confirming answers, students still experience difficulties.

Meanwhile, there are many communication skills in indicators 1 and 3.

3.2 Level of Problem-Solving and Mathematical Communication Ability at Sungai Penuh Junior High School 2 and Readiness to Use the Augmented Reality (AR) Application

SMPN 2 Sungai Penuh is the leading SMPN in

Sungai Penuh. Based on the results of observations, interviews, and giving tests of students' mathematical problem-solving and communication abilities, the following results are obtained:

Table 4: The level of problem-solving and mathematical communication ability of students at SMPN 2 Sungai Penuh.

Question Number	The average level of mathematical ability	
	Problem-solving	Communication
Question 1	50,00 (Moderate)	
Question 2	39,41 (low/less)	
Question 3		19,41 (very low/very less)

Table 4 shows that the problem-solving ability level at SMP 2 Sungai Penuh is already in the Enough category, while the level of communication skills is still in the low/less category. It means that SMPN 2 is better than MTS Al Khikmah in terms of mathematical ability, but considering that SMPN 2 Sungai Penuh is a top school, it should be able to do more than this. In addition, based on the results of the interviews, it was also known that students had never known about Augmented Reliability (AR) as well as teachers, but students and teachers were familiar with the use of technology in the mathematics learning process because they had used applications such as Geogebra, etc. so that students and teachers are believed to be able to use the AR application with the tutorial given later.

The following is an example of student answers in solving mathematical problem-solving and communication questions:

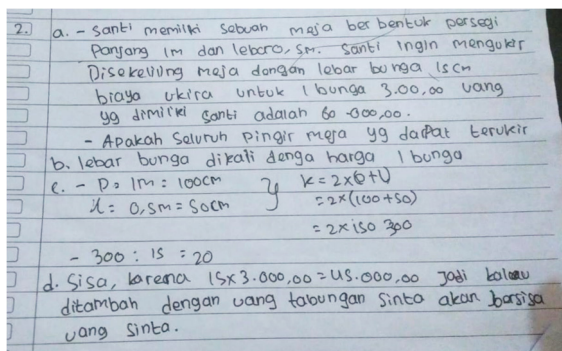


Figure 3: Student Answers Problem-Solving Ability.

In Figure 3, it can be seen that the students could answer correctly until they got the desired answer. Even though there were still deficiencies in the answers, the final results were correct and explained in detail.

However, some students answered incorrectly, as shown in Figure 4.

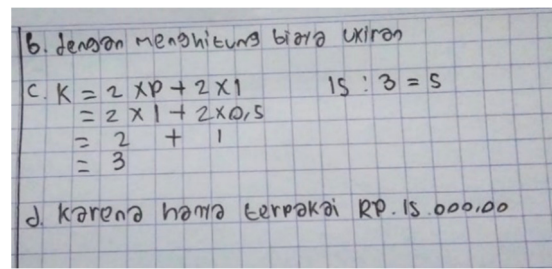


Figure 4: Student Answers Problem-Solving Ability.

In Figure 4, it can be seen that students cannot answer correctly, starting from the strategy to the final result. Some students also answered in the same way resulting in wrong results.

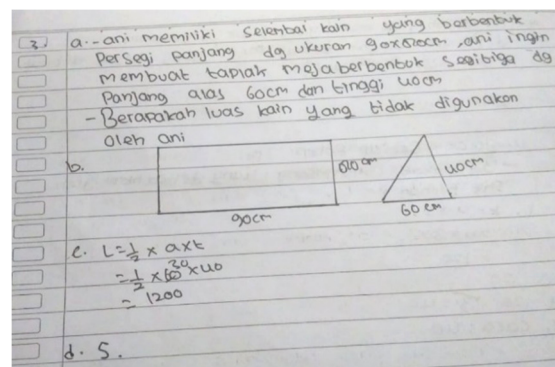


Figure 5: Students' Answers to Mathematical Communication Skills.

Figure 5 shows the students can describe the questions through pictures and diagrams. Most students do this.

Most students' difficulties lie in indicators 2, 3, and 4 for problem-solving abilities and indicators 1 and 3 for mathematical communication skills.

3.3 Level of Problem-Solving Ability and Mathematical Communication at SMPN 1 Kerinci and Readiness to Use Augmented Reality (AR) Applications

SMPN 1 Kerinci is the leading and best SMPN in the Kerinci district. Based on the results of observations, interviews, and giving tests of students' mathematical problem-solving and communication skills, the following results are obtained:

Table 5: Level of problem-solving and mathematical communication abilities of students at SMPN 2 Sungai Penuh.

Question number	The average level of mathematical ability	
	Problem-solving	Communication
Soal 1	50,00 (Moderate)	
Soal 2	61,11 (Moderate)	
Soal 3		22,68 (very low/very less)

Table 5 shows that the problem-solving ability level at SMPN 1 Sungai Penuh is in the Moderate category, while the level of communication skills is still in the low/less category. It means that SMPN 1 is better than MTS Al Khikmah and SMPN 2 Sungai Penuh in terms of their mathematical abilities, but considering that SMPN 1 Kerinci is an excellent school, it should be able to do more than this. In addition, based on the results of the interviews, it was also known that students had never known about Augmented Reliability (AR) as well as teachers, but students and teachers were familiar with the use of technology in the mathematics learning process because they had used applications such as Geogebra, Modules, LKPD, Digital Books. So that students and teachers are believed to be able to use the AR application with the tutorial given later.

The following is an example of student answers in solving mathematical problem-solving and communication questions:

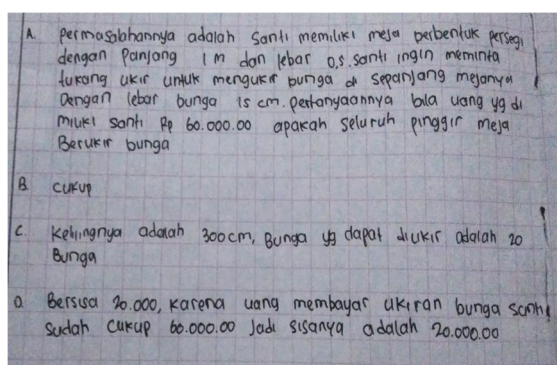


Figure 6: Students' inaccurate answers to problem-solving abilities.

From Figure 6, it can be seen that students have been able to work on problem-solving questions. However, many students have difficulty providing arguments and reasons for their answers, so student answers are incomplete.

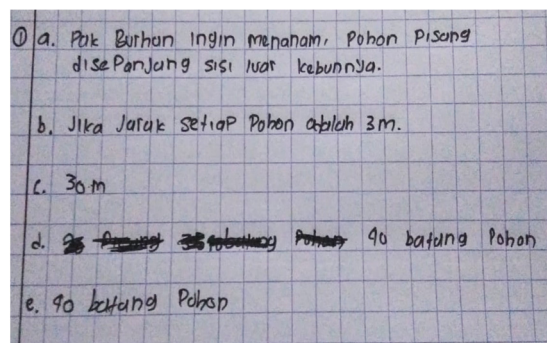


Figure 7. Student's wrong answer in problem-solving abilities.

In Figure 7, it can be seen that the students were wrong in working on the questions. Many students answered similarly, so they were wrong in solving the problem.

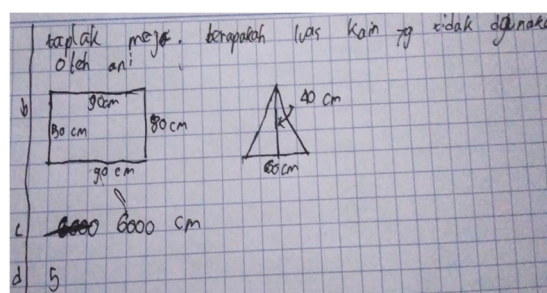


Figure 8: Students' Answers to Mathematical Communication Skills.

Similar to the previous school in solving students' mathematical communication problems at SMPN 1 Kerinci, there were also many difficulties in indicators 1 and 3, while in indicator 2, namely explaining mathematical situations and relations in the form of pictures/diagrams, students could do it.

4 CONCLUSION

Based on the results of the above research, it can be concluded that the problem-solving and mathematical communication abilities of students at MTS AL Khikmah Kerinci, SMPN 2 Sungai Lilin, and SMPN 1 Kerinci are still lacking. The results showed that the problem-solving abilities of MTS Al Khikmah students were still low, namely 26.91%, while their communication skills were 18.05%, also in the low category. At the same time, the ability to communicate is 19.41% in the low category. Likewise, with SMPN 1 Kerinci, students' problem-solving abilities are in a good category, namely

55.55%, while their communication abilities are 22.68% in the low category. Based on these results, it is necessary for the teacher's active role in choosing a new learning model or method that can improve the students' mathematical problem-solving and communication abilities.

Meanwhile, based on interviews and observations, it can be concluded that students and teachers in Kerinci are unfamiliar with Augmented Reality (AR). However, students and teachers are familiar with the use of technology in the mathematics learning process because they have used applications such as Geogebra, Modules, LKPD, and Digital Books. So that students and teachers are believed to be able to use the AR application with the tutorial given later.

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The Effectiveness of Butterfly Songs on Intrapersonal Intelligence Children Aged 5-6 Years

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Keywords: Butterfly Song, Intrapersonal Intelligence, Early Childhood.


Abstract: This study aims to determine the effectiveness of butterfly songs on children's intrapersonal intelligence in Nurul Hidayah Bukittinggi Kindergarten. This study involved 20 children as research objects, of which ten belonged to the experimental class and 10 to the control class. The research design was the pretest-posttest control group. The collection used a scale to test the quality of the measuring instrument. It used the content validity test with professional judgment to see reliability using SPSS 20.0 for window with the Alpha Crombach technique. Hypothesis testing used the statistical T-test technique with the help of SPSS 20.0 for the window, which showed a significant level of 0.000. It shows that the butterfly song is effective in increasing intrapersonal intelligence in Kindergarten.


1 INTRODUCTION

The golden age is the golden age for children aged 0-8 years, where children at this time can quickly absorb and understand what is being taught to them. During this golden age, the formation of the nervous system fundamentally occurs, and the absorption capacity of the child's brain reaches 80%. At 0-4 years, as much as 50% of intelligence will be awakened, and at the age of 4-6, it will develop to 80% of the total intelligence achieved at 18 years. For a child's intelligence to develop optimally, it is necessary to provide stimulation throughout his life. Children's stimulation is, of course, from the family and school environments. Children's stimulation from the family environment and school environment can make them human beings who grow with intelligence. The intelligence that every child has from birth is different. According to Gardner in Anita Yus (2010: 10), "The essence of every child is an intelligent view of this route that intelligence is only seen from the IQ factor. Gardner sees intelligence from various dimensions. Every intelligence possessed will be able to lead children to achieve success. Still, according to Gardner in Antonius Atosokhi et al. (2003: 54), "The multiple intelligences in question consist of 8 types of intelligence, namely

linguistic intelligence, logical-mathematical intelligence, naturalist intelligence, visual-spatial intelligence, kinesthetic intelligence, musical intelligence, interpersonal intelligence, intelligence intrapersonal".

According to Ngalim Purwanto (2006), each child's different bits of intelligence are factors of innateness. Innateness is determined by the traits and characteristics that are innate. Furthermore, influenced by Maturity, every organ in the human body experiences growth and development. Every organ (physical or psychological) can be said to have matured if it can carry out its respective functions. The formation is also a factor. The formation is all circumstances outside of a person that affects intellectual development. Distinguished in the formation of intentional as done in schools and the formation of unintentional as the influence of the environment. Specific interests and traits are also a factor in different intelligences in children. Interests and innate direct action toward a goal are the impetus for that action and freedom, meaning humans can choose specific methods to solve problems. All intelligence can be developed in every child, but researchers will discuss intrapersonal intelligence in children in this study. Intrapersonal intelligence is an ability related to awareness and knowledge about

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oneself. Intrapersonal intelligence is intelligence in understanding and understanding yourself.

According to Gardner in Suparno (2013), children who have Intrapersonal Intelligence will stand out in the following abilities:

1. Can concentrate well
2. Surprise and expression of different feelings
3. Deep self-knowledge
4. Self-balance
5. Awareness of spiritual reality
6. Reflective, likes to work alone.

From the results of observations made by researchers, intrapersonal intelligence in Nurul Hidayah Bukittinggi Kindergarten children where children have not been able to express simple or confident opinions and defuse rules. Children cannot complete their work, cannot express activities such as telling about themselves, can see facial expressions when doing activities he likes, and can express their feelings. Teachers are less able to motivate children by using exciting methods. For children to be interested in learning, teacher learning uses creative, innovative and varied methods for children, because creativity in choosing methods is very important in learning, so children want to play an active role directly and not passively. Based on the description above, the observer stated that this phenomenon needs to be minimized by giving flying butterfly songs to improve children's intrapersonal abilities. The flying butterfly song is a song with the theme of flying butterflies. Song (singing) is a work of art related to sound art and language art, as a work of sound art that involves the melody and vocal color of the singer.

Music is used as a learning medium. Of course, it must be able to make the learning atmosphere fun and not dull. In this case, music is related to numbers. The use of music for children will undoubtedly have a positive impact on their learning process. It is because music is a way to stimulate the mind so that children can receive the material well. In addition, music stimulates the mind, improves concentration and memory improves cognitive, physiological, and emotional intelligence. Music will also affect children's feelings, influencing the teaching and learning process. So the goal to be achieved in this study is to develop intrapersonal abilities using music media in group B kindergarten children.

2 METHODOLOGY

This research was conducted using a quantitative

approach. Which method used in this study is a quasi-experimental design (pseudo-experiment). The use of quasi-experimental design methods was carried out to achieve the research objectives, i.e., increase the ability to know numbers in Kindergarten Group B children. The quasi-experimental design used in this study was a non-equivalent pretest-posttest control group design (Sugiyono, 2011). A description of the flow of implementing the guidance program using music media can be seen in the picture as follows.

Table 1: Design research.

Kelompok	Pre-test	Pelaksanaan Program	Post-test
Eksperimen	O ₁	X ₁	O ₂
Kontrol	O ₁	X ₂	O ₂

Information :

O1: initial test (before being given treatment) on the experimental group and control group

O2: final test (after being given treatment) on the experimental group and control group

X1: giving treatment using music media

X2: conventional treatment / without treatment

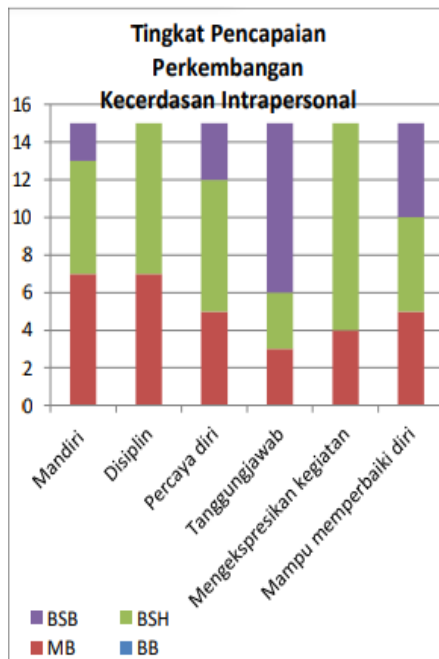
3 RESEARCH RESULTS AND DISCUSSION

The results of research done on the control group, after being given a pretest and then the control group did conventional learning six times meeting and given a posttest, can be seen from the results below. Based on the t-test results, the results obtained were $t = 12.038$ with a level significance of 0.000. It shows that there is a significant difference between the experimental group and the control group.

Related to this research, researchers have conducted observations and interviews that focused on aspects of the development of intrapersonal intelligence in children, namely, aspects of independence, discipline, self-confidence, responsibility, expressing activities, and being able to improve themselves. Based on the results of the data obtained from observations and interviews in group B of Nurul Hidayah Kindergarten with 15 children. It was found that there were eight children whose intrapersonal intelligence development was at an excellent level of developmental achievement (BSB) and five children with an expected development level of achievement (BSH). Moreover, the remaining two children with the level of achievement began to

develop (MB). It is influenced by habituation at home or school.

More details can be seen in the following graph:



Using this song helps children in developing intrapersonal abilities. Sugiono (2013: page 191) states two ways to develop intrapersonal intelligence in children at school: 1) Creating a positive self-image. Teachers can give an excellent self-image to children by displaying a warm but firm attitude towards children so that children still respect the teacher. In addition, teachers who respect and care for their students will make it easier for teachers to give attention, appreciation, and acceptance to their students. 2) Creating an atmosphere that supports the development of intrapersonal abilities and children's self-esteem.

With children appearing in front of the class and singing children's songs, they are pleased and can express themselves. Tadkiroatun Musfiroh (p. 9.13) states that intrapersonal intelligence in children can be developed in various ways, including playing, playing, conversing, and telling stories. This activity aims to stimulate children's ability to understand their characteristics and interests, the ability to evaluate themselves, the ability to enjoy activities, the ability to express intentions and self-expression, and the ability to be disciplined and self-controlled. Intrapersonal intelligence is essential for everyone who wants to gain control over their lives and achieve success and security. In this study, intrapersonal intelligence skills include independence, discipline,

self-confidence, responsibility, expressing activities, and improving oneself. Intrapersonal intelligence stands out in children who often look quiet and prefer to contemplate and work alone.

4 CONCLUSION

Based on the results of data analysis obtained by researchers in the previous section, it can be concluded that the development of children's intrapersonal intelligence overall is already at a very well-developed achievement (BSB) because most children are at the level achievement of BSB, namely eight people, and five people with the achievement of BSH. While aspects of the development of intrapersonal intelligence of children. It proves that the flying butterfly song effectively develops early childhood intrapersonal abilities.

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Effect of Using Favorite Food Songs on Early Childhood Numeracy Literacy

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Keywords: Favorite Food Songs, Numerical Literacy, Early Childhood.

Abstract: This study aims to determine the effect of the banana compote song on children's numerical literacy in Nurul Hidayah Bukittinggi Kindergarten. This study involved 20 children as research objects, of which 10 belonged to the experimental class and 10 to the control class. The research design was the pretest-posttest control group. The collection used a scale to test the quality of the measuring instrument. It used the content validity test with professional judgment to see reliability using SPSS 20.0 for window with the Alpha Crombach technique. Hypothesis testing uses the statistical T-test technique with the help of SPSS 20.0 for the window, which shows a significant level of 0.000. It shows that the banana compote song affects the numerical literacy of kindergarten.

1 INTRODUCTION


This study aims to determine the effect of the banana compote song on children's numerical literacy in Nurul Hidayah Bukittinggi Kindergarten. This study involved 20 children as research objects, of which 10 belonged to the experimental class and 10 to the control class. The research design was the pretest-posttest control group. The collection used a scale to test the quality of the measuring instrument. It used the content validity test with professional judgment to see reliability using SPSS 20.0 for window with the Alpha Crombach technique. Hypothesis testing uses the statistical T-test technique with the help of SPSS 20.0 for the window, which shows a significant level of 0.000. It shows that the banana compote song affects the numerical literacy of kindergarten. Manuscript effect on the numerical literacy of kindergarten.


Early literacy and numeracy are two skills that have developed from an early age and become


that important factors determining academic success later. (Duncan et. a, 2007). The child demonstrates basic abilities to think critically, creatively, and collaboratively. Children can recognize and see the relationship between patterns, symbols and data, and can use it to solve everyday problems.


What are the Initial Numbers?

- Numerical skills in early childhood are also related to basic problem-solving skills and the application of mathematics in everyday life.
- Not just numeracy skills but also ways of thinking about algebra, geometry, measurement, data, and opportunity analysis.
- Knowledge, skills, attitudes, and tendencies that one needs to be able to use mathematics in various situations.
- Initial numeration refers to the basics of reasoning mathematics acquired early.

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Table 1: Initial Numbers.

Content	Age 5 - 6 years
Algebra	Sorting, Grouping, Pattern Making, Solve The Problem
Number	Compare, Order (First, second, and third), Dividing material among friends, Counting, One - one relationships.
Geometry	Geometry is more than naming shapes. Geometry includes understanding spatial, position, and 2-dimensional- and 3-dimensional relationships.
Measurement	Understand the attributes of objects - objects, Construct the concept of non-standard measurement, application of numbers to measure, serialize
Data Analysis	Collecting information, Organizing information in simple terms, Asking and answering questions regarding the information collected by the organization

Early Numeracy Skills Matter:

- Supporting children with a way of thinking mathematically requires them to be actively involved in the environment.
- Provide a foothold for children to learn to reason, connect ideas, and think logically.
- Helping children observe, manage, and find meaning in their environment.

This introduction to numerical literacy requires active, creative, and fun learning activities. This matter is done so that children in learning feel happy and not saturated so that children's learning outcomes can be as optimal as possible. Introduction to numerical literacy is useful for improving thinking and child creativity. In addition, through activity. Knowing numerical literacy can also encourage children to make great innovations. The child's sensitivity is increased towards an object they see, so the child can also differentiate and analyze (Pradana, 2016). To help children get to know numerical literacy, media is needed. This matter is due to one of the principles of early childhood learning through the media. Appropriate media for early childhood, especially in introducing numeric literacy, has a big role. Son taught numerical literacy in abstract and concrete forms so children easily understand and understand it. Besides that, in the presence of interesting media, children too have demonstrated motivation feeling happy, aroused, and interested, so encourage children to think positively about learning to recognize numerical literacy. The ability to

recognize numerical literacy children will develop according to the level of developmental achievements contained in to develop the ability to recognize numbers is used active learning media and fun for children, namely media music.

Music is used as a medium of learning. Of course, we must be able to make the learning atmosphere fun and not boring. In this case, related music with numbers. The use of music for children will certainly have a positive impact on the process of learning. It is because music is one way to stimulate the mind so that the child can receive the material well. Music will also stimulate the mind, improving concentration, memory, cognitive, physiological aspects, and emotional intelligence. Music will too affect the child's feelings to affect the teaching and learning process. The banana compote song is a tutorial-themed song and ingredients for making banana compote.

Based on the results of observations in the field, a problem can be formulated, namely how music can develop the ability to recognize numbers in group B garden children. In this case, researchers and teachers are looking for learning media, namely introducing numbers and solving problems with the banana compote song. So the goal to be achieved in this study is to develop number recognition skills using music media in group B kindergarten children.

2 METHODOLOGY

This research was conducted using a quantitative approach. Which method used in this study is a quasi-experimental design (pseudo-experiment). The use of quasi-experimental design methods was carried out to achieve the research objectives, i.e., increase the ability to know numbers in Kindergarten Group B children. The quasi-experimental design used in this study was a non-equivalent pretest-posttest control group design (Sugiyono, 2011). A description of the flow of implementing the guidance program using music media can be seen in the picture as follows.

Table 2: Desain Penelitian.

Kelompok	Pre-test	Pelaksanaan Program	Post-test
Eksperimen	O ₁	X ₁	O ₂
Kontrol	O ₁	X ₂	O ₂

Information :

- O₁: initial test (before being given treatment) on the experimental group and control group

O2: final test (after being given treatment) on the experimental group and control group
 X1: giving treatment using music media
 X2: conventional treatment / without treatment

3 RESEARCH RESULTS AND DISCUSSION

The results of research done on the control group, after being given a pretest and then the control group did conventional learning 6 times meeting and given a posttest, can be seen from the results below.

Based on the t-test results, the results obtained were $t = 12.038$ with a level significance of 0.000. It shows that there is a significant difference between the experimental group and the control group.

3.1 The Concept of Counting

In this activity, the teacher and children sing in which there is a concept of counting. The initial stage of counting in children is counting through memorization or counting Crisp et al., (2016). The teacher develops this ability through the activity of singing the song kolak banana which already has a number in the lyrics of the song. Calculate and work with simple and complex numbers. According to Softic (2016), Using rhymes or songs is a fun way to learn numbers for children. Later the child will count the number of ingredients to make the banana compote in the song's lyrics. Arithmetic operations include addition, subtraction, addition, and division. The necessary understanding of the core and relationships between numbers is well enough to see the interrelationships between the operations. For example, the problem of subtraction can be turned into an addition, as well as the problem of division and addition Stenberg et al., (2019)

3.2 Solve the Problem

Problem solvers can be stimulated by exchanging opinions, asking questions, or conversing with children. Material can be in the form of imagination, real events around the child, or games. The ability to solve problems (problem-solving) is the ability of students to use their thinking processes in solving problems through gathering facts, analyzing information, compiling various alternative solutions, and choosing the most effective problem-solving. Dahlia et al., (2013).

Indicators of problem-solving abilities in kindergarten children include:

- 3.2.1 Using the kolak banana song, the ability to observe, observe and understand something can be seen in the lyrics of the children's song can observe the lyrics and what information is in the lyrics. (observation),
- 3.2.2 Ability to collect data and information (collecting), The child collects data on the lyrics of the banana compote, such as the ingredients for making banana compote and the amount of banana compote.
- 3.2.3 Ability to process information (communicate), The child first processes any information related to the banana compote song.
- 3.2.4 My ability to communicate information. The child begins to communicate what information is contained in the banana compote song and can ask questions and answers with the teacher.

Kucina (2016) revealed that the ability to solve problems in early childhood is the ability to use their experience in formulating hypotheses, collecting data, making decisions about hypotheses, and making decisions about the information they get in the scientific process.

4 CONCLUSION

Using rhymes or songs is a fun way to learn numbers for kids. Later the child will count the number of ingredients to make the banana compote in the song's lyrics. Arithmetic operations include addition, subtraction, addition, and division. The necessary understanding of the core and relationships between numbers is well enough to see the interrelationships between the operations. Problem solvers can be stimulated by exchanging opinions, asking questions, or conversing with children. Material can be in the form of imagination, real events around the child, or games and song media. It proves that the song kolak banana affects the numeric abilities of children aged 5-6 years.

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Implementation of Kurikulum Merdeka Development in Facing the Industrial Revolution Era 4.0 at SMKN 6 Padang

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Abstract: The project to strengthen the Pancasila Student Profile (P5) in the Merdeka Curriculum is an important thing to be carried out in each education unit because it guides educators in building the character and competencies of students in schools. Furthermore, it is hoped that Indonesian students are students whose lives are competent, characterized, and behave according to the values of Pancasila. SMKN 6 Padang is one of the high schools implementing Kurikulum Merdeka and a Sekolah Pusat Unggulan. This paper aims to analyze the implementation of P5 activities at SMKN 6 Padang and reveal problems in the performance of P5. The research method uses a qualitative approach to descriptive research. The data collection techniques used are observation, interviews, and documentation. This P5 activity begins with identifying problems facilitated by the teacher so that the activity starts to have an orientation to the understanding of concepts and resolve the issue according to the theme. The P5 theme selected activities are sustainable lifestyles, local wisdom, and entrepreneurship. Generally, the implementation of P5 in SMKN 6 Padang has been going well, and it has reflected the character and behavior of the values of Pancasila.


1 INTRODUCTION


The industrial revolution 4.0 indirectly changed the paradigm of education in the 21st century (Humairah, 2022). The shift in 21st-century learning at this time is not solely on the concept of teaching methods, but the perspective on learning itself is far more essential. Education is one of the crucial foundations in the progress of a nation in order to form quality human resources so that they can keep up with increasingly advanced times (Bebasari et al., 2022). Education is a driving sector in culture in producing creative and innovative things. In Indonesia, education is highly prioritized and considered a fundamental matter. It follows the opening of the 1945 Constitution in the fourth paragraph, which contains the goal of


educating the nation's life, which is the state's responsibility.


The era of independent learning can be interpreted as a period in which teachers and students have independence or freedom of thought, free from the shackles of educational burdens to develop their potential to achieve educational goals. (Widiyono and Millati, 2021). The essence of freedom of thought, according to Nadiem, must be passed by teachers before they carry out the learning process. As the main component in education, the teacher has the flexibility and freedom to translate. By understanding the curriculum that has been set, the teacher can answer the needs of students during the learning process. (Nurlaili et al., 2021). Through independent learning, teachers are expected to be able to develop

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their potential such as planning interesting, fun, and meaningful learning (Setiawan *et al.*, 2022).

The curriculum is the life of education. Education in Indonesia always experiences curriculum changes from time to time. Changes in the curriculum certainly cannot be avoided and passed but must always be lived and adapted to the needs and principles (Sadewa, 2022). The national education system is required to make renewal in a planned, directed continually, and continuous manner so that it can guarantee equitable education, improved quality as well as the relevance and efficiency of education management to prepare students to face challenges according to the demands of life changes both local, national, to global (Faiz and Kurniawaty, 2022).

In Indonesia, one of the educational development processes is curriculum development (Bisri, 2020; Safaruddin, 2020). The curriculum in Indonesia has been developed since independence, and changes occur from time to time. The curriculum is the life of the course of education (Huda, 2017). Through the curriculum, it is expected that education success will be created. Changes in the curriculum cannot be avoided due to the lack of proper education in Indonesia and the influence of sociocultural systems, politics, economics, and science and technology (Pahlawan *et al.*, 2022). To achieve success in education, in addition to a good curriculum, all components in education must be bound to each other (Abi Hamid *et al.*, 2020; Safaruddin, 2020)

In 2021 the government, through the Ministry of Education and Culture, the government launched the prototype curriculum, which was further enhanced in 2022 and became the Merdeka curriculum. In its journey, the implementation of the Merdeka Curriculum (IKM) was carried out in stages, not simultaneously and not massively. The government provides opportunities for schools to conduct IKM learning independently. IKM Mandiri is made in three categories: Mandiri Learning, Change, and Mandiri Sharing.

One of the schools that uses the Merdeka Learning curriculum is SMK Negeri 6 Padang, also a Sekolah Pusat Keunggulan. According to the results of interviews with deputy school principals in the field of curriculum and several learning committee teachers at SMKN 6 Padang, "In Merdeka curriculum, there is a term called KOSP (Education Unit Operational Curriculum) which is the basis of learning at school, teaching modules and student profile project Pancasila."

In the Merdeka Learning Curriculum, learning strives to lead to the formation of the Pancasila Student Profile following its vision and mission,

which emphasizes the formation of Pancasila students. Based on the Minister of Education and Culture Regulation No. 22 of 2020 concerning the Strategic Plan of the Ministry of Education and Culture of 2020-2024, Pancasila Students are the embodiment of Indonesian students as a lifelong student who has global competence and behaves Pancasila values, with six main characteristics: Believers, fear God and have a noble character, global diversity, work together, independent, critical reasoning, and creative.

Before using the Merdeka Learning Curriculum, SMK Negeri 6 Padang had implemented character education for its students. For example, by inviting students always to maintain the cleanliness of the school, not damage plants, and discipline in time. Education developers use Pancasila Student Profiles as the leading destination (Kemendikbud Ristek, 2021B). According to the Deputy Principal of the Curriculum Section of SMKN 6 Padang, there are still several obstacles to applying to Kurikulum Merdeka in this school.

The demand for independent learning certainly has various obstacles. One of the factors that causes this to happen is educational technology. Educational technology is a scientific field that aims to facilitate the learning process by using various learning resources included in the appropriate technology to form an efficient and practical education. This is illustrated in the definition of educational technology according to AECT 2004, which contains that learning technology is research and ethical practice in facilitating learning and can improve performance based on appropriate technological resources. (Setiawan and Fauzan, 2022). Educational technology is intended to make learning more effective, efficient, numerous, comprehensive, faster, and meaningful for the lives of those who learn (Setiawan and Fauzan, 2022). Thus, technological advances are expected to allow teachers to apply various technologies in education.

Based on the background of the problem above, which is the topic of discussion in this study, the writer feels the need to analyze the development of the Kurikulum Merdeka in Facing the Industrial Revolution Era 4.0 SMKN 6 Padang.

2 METHODOLOGY

This research is a qualitative approach to descriptive research. Data collection techniques used are in-depth interviews, observation, and documentation. Data analysis is done through data reduction, presentation,

and conclusion. This study's data sources are the Principal, Deputy Principal of the Curriculum Section, and SMK N 6 Padang teachers.

3 RESEARCH RESULTS AND DISCUSSION

3.1 Planning for Learning Projects Strengthening Pancasila Student Profiles at SMKN 6 Padang

SMKN 6 Padang is one of the high school-level Sekolah Pusat Unggulan in West Sumatra. SMKN 6 Padang, in 2022, has implemented Kurikulum Merdeka for the first and second years. SMKN 6 Padang has been to deliver that students can face the era of the industrial revolution 4.0.

Based on the results of observations and interviews, SMKN 6 Padang has developed its curriculum according to the school context and according to needs. It indicates that the complexity level of SMKN 6 Padang in adopting the curriculum is already in the medium category. Meanwhile, the SMKN 6 Padang education unit is already in the advanced stage category and is recommended to mentor early and developing schools. It is because SMKN 6 Padang has met the criteria, namely, all teachers have carried out project learning, the project is cross-disciplinary, the system already exists, and there is partner involvement in its implementation.

Before the learning project strengthened the Pancasila Student Profile, SMKN 6 Padang formed the Learning Committee Team. Based on interviews with the Principal of SMKN 6 Padang, the Learning Committee Team designed and planned the learning project for Pancasila Student Profile. This team holds workshops, training, and assessments with other teachers so that the learning will be carried out according to the same goals and expectations.

Some of the activities of the learning committee team that have been carried out are identifying the stages of readiness in schools in running projects, determining the dimensions and themes of profile projects, designing the time project time allocation, compiling the profile project module, determining learning objectives and developing topics, activity flow and assessment of profile projects. Based on interviews with the Head of the Project Planning Team, Strengthening the Pancasila Student Profile said that the development of ideas and project modules according to the local context, needs, and

interests of students involves students' opinions and ideas.

In identifying the stages of the readiness of the education unit in carrying out the project strengthening the Pancasila student profile, including at the developing stage, because in SMKN 6 Padang already has a system to carry out the project-based learning, some teachers already understand the project-based learning and SMKN 6 Padang already involved outside parties to help wrong one project activity.

Through the Pancasila Student Profile, it is expected that students, especially in high school, can develop their character values so that good behavior is formed and inherent in students. There are six key competencies: faith, devotion to God Almighty and noble character, global diversity, cooperation, creativity, and critical and independent. The six dimensions are interrelated and also strengthen.

The Project to Strengthen Pancasila Student Profile (P5), allocated around 30 total JP per year, is carried out flexibly in terms of content and implementation time. P5 activities must refer to the achievements of the Pancasila student profile according to the phase of the students and do not have to be linked to the learning outcomes of the subjects. As for the implementation time, it can be carried out by allocating project study hours from all subjects, and the total implementation time for each project does not have to be the same.

Educators need to develop these six dimensions as a whole in SMK. In addition, to help a more thorough understanding of the dimensions of the Pancasila student profile. Then the meaning of each dimension is explained, and its development is sequenced according to the psychological and cognitive development stages of school-age children and adolescents. Furthermore, each dimension of the Pancasila student profile consists of several elements, and some elements are explained more concretely into sub-elements. It is contained in the Decree of the Head of the Educational Curriculum Standards and Assessment Agency (BSKAP) Number 09/H/KR/2022 concerning Profile Dimensions, Elements, and Subelements Pancasila students. Furthermore, the Internalization Process of the 6 Dimensions above is carried out in the Project learning activities.

Implementing Pancasila Student Profile Projects at SMKN 6 Padang was choosing the theme of Work, building body and soul, and local wisdom.

3.2 Implementation of Learning Projects Strengthening Pancasila Profiles in the Era of the Industrial Revolution 4.0

The Pancasila Student Profile Strengthening Project (P5), which was developed at SMKN 6 Padang in the 2022/2023 school year, is devoted to the mandatory theme, namely Work and the chosen theme Wake Up Your Mind and Body and Local Wisdom and in the even semester, P5 learning is given with the theme of choosing a Sustainable Lifestyle.

3.2.1 Work

The employment theme project aims to explore and develop the potential of students in order to understand the scope and characteristics of work according to their program of expertise. The general objective of the employment-themed project is for students to understand the scope and characteristics of the world of work according to their expertise program. The relevance of the main learning activities from P5 learning is implementing Project Based Learning by involving students in work and social projects. The competencies acquired by students can be implemented in solving surrounding problems by maximizing the function of the Student Practice Room (Teaching Factory).

The specific goals of each project can be seen in each sub-theme. Through this project, students are expected to develop four dimensions of Pancasila student profiles: faith and piety to God Almighty and noble character, independence, mutual cooperation, critical reasoning, and creativity.

An example of implementing a work project is students making cakes as a P5 project.



Figure 1: Students Making Cakes.

The process of making cakes in the P5 project with the theme of work already uses automated machines so that students, when they enter the industry, are no longer surprised by the technology used. It is in supporting the 4.0 industrial revolution

that has been carried out at SMKN 6 Padang. Apart from that, marketing has also used technology, be it social media, technology, and so on, that support the industrial era 4.0.

3.2.2 Wake up Body and Soul

The theme of choice 1 given to students of SMKN 6 Padang is Wake Up Their Mind and Body. This theme has a project theme, “Prevent Cyber Bullying.” This theme creates learning opportunities for students to shape themselves according to the Pancasila Student Profile. Aiming to train physical and mental health on an ongoing basis, this project with an active and learner-centered learning method is expected to be a tool that offers a meeting point for collaboration and identifies related parties for solving cyberbullying problems around them.

Through this project, students are ultimately expected to have explicitly developed the three dimensions of the Pancasila Student Profile, namely Fear of God Almighty and having noble character, cooperation, and independence, including the sub-elements that will be elaborated. This theme is implemented for the learning duration of 72 JP.

One of the activities in the “prevent cyberbullying” project is conducting a literacy tour.



Figure 2: Explore Literacy.

This literacy activity aims to provide students with an understanding of the dangers of bullying on social media, namely by knowing how to use social media correctly and adequately so students do not go the wrong way in using social media.

3.2.3 Local Culture

The theme of Choice 2 given to students is the theme of Local Wisdom. This theme is very suitable for class X students so they have knowledge and experience learning about the local cultures surrounding them. This project begins with the discovery stage, where students are invited to recognize the forms and functions of local wisdom in several regions in Indonesia. After that, the activity continues with finding the relationship between self-

identity and cultural identity and learning to understand that identity is a dynamic and ever-changing conception.

In this case, the activity carried out is the Makan Bajamba project, which is eating together based on Minangkabau customs and culture.



Figure 3: Makan Bajamba.

In this activity, food, drinks, and everything needed in the Bajamba eating project are prepared by students and teachers.

3.3 Evaluation Results of Project Strengthening Pancasila Student Profile Using the CIPP Model

A hypothetical design or hypothetical model results from a comparative analysis between the results of relevant preliminary studies (conceptual models) and field models (factual models) findings.

Based on the results of research both qualitatively, it is known that the implementation of P5, in general, is appropriate; it is just that the evaluation of the project is less appropriate and relevant to the 21st-century competency.

Based on the findings of the planning, process, and evaluation of the learning of P5 at SMK N 15 Padang, the following is a description of the evaluation results of the implementation of the P5 project. Using the CIPP model can be seen in the table below:

Table 1: Evaluation Results of Project Strengthening Pancasila Student Profile Using the CIPP Model.

Aspect	Findings of the Results of the project strengthening the Pancasila Student Profile
Context	- There is already a Project Module for Strengthening Pancasila Student Profile - Assessment is carried out optimally
Input	- Limited knowledge and ability of teachers in differentiation learning - The use of technology is good
Process	Application in class is not optimal because, in one meeting, it has not been

	able to carry out learning simultaneously with assessment and reflection.
Product	The unavailability of an assessment rubric is related to the project themes relevant to P5, and several projects have supported the era of the industrial revolution 4.0

Referring to the data of the study's results so that the objectives of the P5 project can be achieved optimally, researchers try to design the P5 project hypothetically. The following is a Hypothetical Design Project P5:

Table 2: Hypothetical design project strengthening student Profile Pancasila.

Aspect	Hypothetical design project strengthening student profile Pancasila
Context	- Analyzing the achievement of industrial revolution era 4.0 Objectives so that the aim of implementing projects is right on target - Development of P5 Assessment related to the era of the industrial revolution 4.0
Input	- Teacher guidance - Procurement of facilities and infrastructure, especially technological tools
Process	- Improve teacher competence in the learning process regarding the syntax of the learning model - Rubric Assessment of Project Results Relevant to P5 and can be used in the face of the industrial revolution 4.0 era
Product	- School Exhibition Project results attended by teachers, students, parents, and the community around the school.

Based on Permendikbudristek No. 56/M/2022, Pancasila Student Profile Strengthening Project (P5) is a project-based curricular activity designed to strengthen efforts to achieve competency and character following the Pancasila Student Profile, which is arranged based on graduate compensation standards. Project strengthening of the Pancasila Student Profile (P5) new learning raised in the driving school.

This P5 is part of the Merdeka Curriculum structure in addition to intracurricular learning. P5 is a learning that provides direct experience following the characteristics of the surrounding environment so that children have global competence and behave that reflects the values of Pancasila in daily life. Implementing the recommended project approach in developing P5 can be preceded by observing or investigating the topics chosen by students following their respective interests and needs.

In the hypothetical design of the project, strengthening the Pancasila student profile in terms of context is to analyze the achievement of the 21st-century competency goals so that the objectives of implementing the project are right on target.

In this case, implementing P5 must follow students' competencies in the 21st century. According to (Griffin, Care, and McGaw, 2012), the competencies that students must have been critical thinking and problem-solving, creativity, communication skills, and the Ability to Work Collaboratively. In implementing this project, there must be a P5 assessment form related to 21st-century competency. It is more than just an assessment that contains the characters from P5 that students must achieve.

In its implementation, in the hypothetical design of the project, strengthening the Pancasila Student Profile in terms of input and guidance is needed for teachers to achieve this competency goal. Supervisors by the teacher on the project help students inform what needs are needed in implementing P5.

For implementing the P5 project, it is necessary to increase the potential of teachers to manage the learning process, and component training can be held, especially in using the syntax of the learning model.

To evaluate the implementation of the P5 project can be seen in the products produced by students. Assessment is not only with one model of assessment; this evaluation is not only on student learning but also on the learning process of educators in preparing project activities and the readiness of education units and other educational units in carrying out projects. So the evaluation benchmark is the development and self-growth of students, educators, and education units. Moreover.

4 CONCLUSION

In planning a project strengthening the Pancasila Student Profile, SMKN 6 Padang has adjusted the project module provided by the Ministry of Research and Technology following the local context, needs, and interests of participants by involving opinions; and student ideas.

Implementation of Projects Strengthening Pancasila Student Profile, Teachers have implemented a project strengthening Pancasila Student Profile with less or more than the recommended Ministry of Education and Culture of the Project. This activity begins with identifying problems facilitated by the teacher so that project activities begin to be oriented to the concept of

concepts and solving problems (Problem Solving) according to the theme.

SMKN 6 Padang Education involves the community, the community on an ongoing basis to support intracurricular learning and project strengthening the profile of Pancasila students. The community involved is more diverse according to intracurricular learning objectives and projects, strengthening the profile of Pancasila students. Project activities Strengthening Pancasila Student Profiles held at SMKN 6 Padang has prepared students to face the 4.0 revolution era after graduation because they are used to working in an all-automated and all-technological way.

Limitations in this study include no analysis of student perspective on the implementation of the P5 program using valid instruments. Therefore, this can be a follow-up to the following study.

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An Analysis of Insert Model-Cases Methode (IM-CM) to Develop Character Education at Junior Middle Schools: Case How to Teach Unity of Indonesia

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Keywords: Character Education, Insert Model-Case Method, Deep Learning, Values of Indonesia Unity.

Abstract: This study aims to find steps and analyze the effectiveness of the Insert Model-Case Method (IM-CM) in special character education in instilling the values of Indonesian Unity. Character education is the primary mission in the design of education in Indonesia. One of the characteristics that must be instilled in every Indonesian citizen is the value of Indonesian Unity because Indonesia is a plural nation, not a homogeneous or heterogeneous nation prone to disintegration. This study applies library research methods. Data were collected through document study and data analysis using content analysis techniques. This study found, First, there are five steps of the Insert Model-Case Method (IM-CM), namely: 1). Introducing the topic to be inserted; 2). Presenting relevant cases as triggers; 3). Small group discussions; 4). Class discussion; and 5). Reflection and reinforcement. Second, the Insert-Case Method (IM-CM) Model effectively instills the value of Indonesian Unity because this model encourages students to learn in-depth (deep learning). Through this, there is a process of internalizing the value of Indonesian Unity through in-depth analysis of relevant cases.


1 INTRODUCTION


One of the problems in education in Indonesia that need to be discussed is the implementation of character education. By design, Indonesian education emphasizes the importance of character education. It is stated in national education goals (Law No. 20 of 2003 concerning the National Education System). However, the problem of character education is seen in national education practice at all types and levels of education. Cognitive and psychomotor aspects and minimal affective aspects still dominate the practice of learning in the classroom. Even though the curriculum for each type and level of education clearly states the importance of character education, it must be carried out. Facing and solving this problem, experts need to create/create models and/or character learning methods that are practical, easy, and practicable without disrupting the overall learning process. One model that fits this idea is the


Insert Model-Case Method (IM-CM) learning model. By design, the Indonesian education program is designed to create whole human beings, a nation with excellence in all respects. For this reason, one thing needs to be built in the character of Indonesian citizens (nation and character building). Undang-undang nomor 20 Tahun 2003 Pasal 3, the main goal of National Education in Indonesia is to make every citizen have a national character consisting of:

- a) Have faith in God Almighty and always obey God.
- b) Have a good character.
- c) Scientific and scientific.
- d) Smart.
- e) Creative.
- f) Democratic and responsible.
- g) Physically and mentally healthy.

Character learning requires learning scenarios different from learning in the cognitive and psychomotor domains. Character learning requires

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students' deep physical and mental-emotional involvement (deep learning) so that the learning process reaches the internalization aspect of character values. The character learning process that does not involve students physically, mentally-emotionally in depth is feared that the material being studied will not impact students whose learning process is shallow (surface learning).

Character is a collection of good qualities that become daily behavior and is manifested in carrying out tasks, functions, and roles to carry out mandates and responsibilities (Erie Sudewo). Prayitno explained that character is a relatively stable personal trait as a basis for behavior based on values and norms. So character is good behavior that must be enculturated from one generation to the next so that the younger generation as adults can follow the norms of morality, manners, customs, and legal norms in society.

Temiz (2019) explains in-depth character education, which involves the affective domain in Bloom's Taxonomy (1956). Temiz continued that affective domain learning is complex because it involves cognition, behavior, and emotions in an integrated manner. Furthermore, quoting Howard (2004), Temiz suggests there are three approaches to character learning, namely (1) the cognitive development approach for "knowing good," (2) the caring approach for "desiring the good," and (3) traditional character education for doing good" (Temiz, 2019:1320).

According to experts, the educational process in the affective domain goes through 5 (five) stages, starting from the simplest to the highest level, which is complex. The five levels are receiving/attending, responding, valuing, organization, and internalization/characterizing (Krathwohl et al. (1964). Receiving/attending is where the individual is ready to pay attention to a phenomenon. At this level, the individual wants (willingly) and pays attention to and obtains information/data relating to a phenomenon or the natural environment. The responding level is where the individual reacts in-depth, participates, and takes the initiative in existing cases or phenomena. Then the valuing level, the individual's attitude moves from simple acceptance to decisive action. Individuals can explain the basis and rationale of a value and defend and make decisions based on a value. Then, at the organizational level, the individual takes new values into the existing value system within him. This level helps individuals solve if there is a moral conflict within them. Finally, level internalization Pa da this level is the highest level of the affective domain. At this level, the individual

already behaves/behaves following the new values that have been internalized through a process.

Based on these five levels of the affective domain, a character learning model will be developed, namely the Insert-case method (IM-CM) model. The theoretical model is efficient and easy because it does not interfere with the learning process as a whole. The teacher can still teach to deliver the material well. After the primary material is finished, the teacher inserts this model at the end of the learning process. This model only takes 20 minutes to generate values. All teachers in all subjects can apply this model.

One of the character values that must be instilled in every Indonesian citizen is the value of Indonesian Unity. This value is significant because naturally or given the mosaic of the Indonesian nation, it is a plural nation. A plural nation is entirely different, but none is higher than the other, unlike the United States, which is heterogeneous, where they have a reference value, namely WASP (White Anglo-Saxon Protestant) values. The layers of the nation are from top to bottom. Homogeneous nations have no problem because they all have the same physique and values as Japan and China.

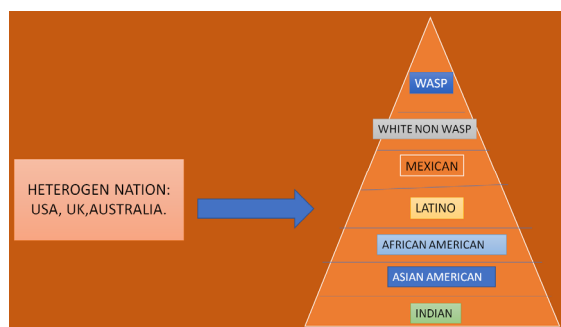


Figure 1: White Anglo-Saxon Protestant.

The character of Indonesian unity, based on the Pancasila state principle, has several value indicators, including 1). Placing the nation's unity, integrity, interests, and security above personal or group interests; 2). Willing to sacrifice for the interests of the state and nation; 3) love the homeland and nation of Indonesia; 4). Bangsa is the nation of Indonesia and has a homeland; 5). It promotes national unity and unity based on Bineka Tunggal Ika. With understanding, appreciation, and internalization of the values of Indonesian unity, it is hoped that the Indonesian unitary state will always be eternal.



Figure 2: The Value of Indonesia Unity.

In character learning, the involvement of students physically and mentally is significant because it will encourage them to activate or “turn on” character values in students. Character values are in the active " on " state, making it easier for the teacher to instill or internalize new values.

This learning design model is called the Insert Model-Case Method (IM-CM), developed based on the Insert Model in Civics Learning in Elementary Schools (SD) created by Azwar Ananda and Junaidi Indrawadi (2015). This model is built based on constructivist learning theory, which emphasizes that learning cannot be forced from outside itself. However, the learner must reconstruct the meaning of the teaching material individually. Likewise, character values must be internalized by students consciously and/or with their own will. The steps of the Insert Model in learning values in 2015 were adopted and adapted into the Insert Model-Case Method (IM-CM) with the syntax or hypothetical steps as follows:

Table 1: Development of the Moral Dilemma Insert Model Learning Design (DP-MIDM) to the insert Case Method.

Steps	Value Learning Insert Model in Elementary School.	Insert Model-Case Method (IM-CM) in Junior Middle School
1	Submission of stimuli in the form of cases, problems, or stories	Opening of learning. Explain the topic and the purpose of the sequence of activities to be carried out.
2	Teacher and students discuss	Presenting cases in the form of stories or cases of moral dilemmas in writing that must be solved Presenting cases in the form of stories or cases of moral dilemmas in writing that must be solved
3	Conducting values coaching through discussion.	Students carry out small group discussions of 4-5 people and write reports

		solving existing problems or dilemmas with reasons.
4	I am concluding together between teacher and student.	Conduct class discussions based on small group discussion reports.
5		Reflecting on the character values that will be internalized, then the teacher conducts dialogue and reinforcement in students to develop the character values being studied.
6		Closing.

2 METHODOLOGY

The method used in this research is the library research method. According to Luo, research value in academic libraries is well documented in the literature. Kaelan in library research is sometimes descriptive and also historical because this kind of research has a historical dimension, and so on. Therefore, library research will deal with data sources in the form of very large books, requiring adequate methods. For this reason, in library research, book collection must be gradual. There will be difficulties if this is not the case.

The location of this research analysis was carried out in junior high schools. Middle school was chosen because, at this time, a human child is looking for self-identity or puberty, a crucial phase in forming one's character. Therefore, the period of junior secondary education was chosen as the center of this research study.

Data collection techniques, in this case, the author will identify discourse from books, papers or articles, magazines, journals, the web (internet), or other information related to the title of the writing to look for things or variables in the form of notes, transcripts, books, newspapers, magazines, etc. Regarding the study of increasing citizen literacy in the 4.0 revolution era. Then the steps are as follows:

- a) Collect existing data through books, documents, and internet magazines (web).
- b) Analyze data so that researchers can conclude the problem being studied.

Data analysis techniques use data analysis studies introduced by the Miles and Huberman model with the following steps: data reduction, data presentation, and conclusion descriptions or literacy verification required by Indonesian citizens regionally, nationally, and internationally. Live in the 21st century.

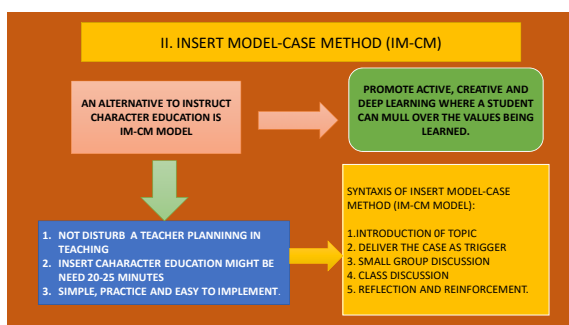


Figure 3: Insert Model-Case Method (IM-CM) Syntax.

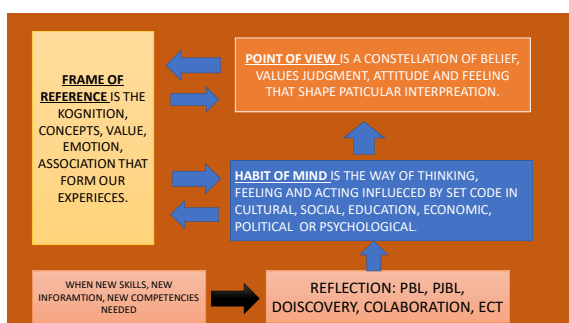


Figure 4: Terms of Reference are the Concepts of Cognition, Values, Emotions, and Associations that Shape our Experiences.

3 RESEARCH RESULTS AND DISCUSSION

Research data shows that the Insert Model-Case Method (IM-CM) encourages students to learn in-depth (deep learning). This model involves students physically and mentally exploring the character values being studied because several steps involve students learning in depth. There are 5 (five) steps or syntax in the Insert-Case Method (IM-CM) model, namely 1). they are conveying the topic of the material to be inserted. 2). convey cases that are relevant to the topic, 3). Small group discussion, 4. Class discussion, and 5). Reflection and reinforcement. Through these five steps, students will be involved mentally and physically in discussing the material.

First, the first step focuses students on a topic or character that will be instilled in the lesson.

Second, presenting a case as a discussion trigger or turning students' mental and physical turn on in a value or situation. The cases that will be included are in the form of cases related to national unity in the form of printed materials, short videos, or in the form of photographs.

Third, students are asked to discuss or dialogue in small groups. Students will be fully involved mentally and physically in exploring the studied case at this step. They will argue, debate, and exchange opinions on how to solve the case being discussed together. Then they will write a report to present in class discussion. The process of writing the report will engage students mentally and physically.

Fourth class discussion. In-class discussions. Again the students will debate, exchange opinions, and argue about solving the discussed problem. In class discussions, students are asked to present the results of small group discussions. In this phase, students will discuss classically. It, of course, increases students' understanding of the values being discussed.

Fifth, reflection and reinforcement. In this phase, the teacher and students have a dialogue. Students self-reflect on understanding the values of Indonesian unity, and the teacher reinforces, convinces, corrects, and confirms the correct values following the Indonesian Pesrstuan question based on the Pancasila state.

Thus the IM-CM model is theoretically efficient and effective for character learning at the junior secondary level and may also be used in senior secondary education. This model's five steps will Turn On every student mentally and physically in learning. Students' mental and physical involvement in learning values, then deep learning occurs. Deep learning in learning values will lead students to the process of internalizing the importance of the value of Indonesian unity in a pluralistic mosaic of nations.

4 CONCLUSION

- a) Educating or teaching character is very important in Indonesian education programs.
- b) Education and teaching experts must find alternative methods/models of teaching character to help teachers.
- c) The Insert Model-Case method (IM-CM Model) is an alternative teacher can use to teach character education.
- d) The IM-CM model is practical, simple, and easy to implement in actual classes.

ACKNOWLEDGEMENTS

Design in the Indonesian education program is an advantage for building the nation and the character of

Indonesian citizens. Undang-undang Nomor 20 Tahun 2003 Pasal 3, the main goal of National Education in Indonesia is to make every citizen have a national character which consists of :

1. Have faith in God Almighty and always obey God.
2. Have a good character.
3. Scientific and scientific.
4. Smart.
5. Creative.
6. Democratic and responsible.
7. Physically and mentally healthy.

This learning design model is called the Insert Model-Case Method (IM-CM).

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The Effect of Blended Learning and Digital Literacy on Students' Reading Comprehension

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Keywords: Blended Learning Model, Digital Literacy, Flipped Classroom, a La Carte, Reading Comprehension, English Text.

Abstract: Blended learning model and digital literacy is an interesting theme these days. There has recently been a lot of research done on this theme, but not in relation to reading comprehension. It has a purpose to discover the impact of the blended learning model and digital literacy on students' for English reading comprehension skill. The experimental method of a 2x2 ANOVA factorial design was based on second-year students in the academic year of 2021-2022. Two instruments were used to collect data: a reading comprehension test (multiple choice) and a digital literacy questionnaire. The data analysis used a two-way ANOVA with the F test at a significance level of 0.05. The discoveries of this study are: 1) There was no significant difference on reading comprehension between students who are taught using the flipped classroom and a la carte; 2) There were significant differences between students with high digital literacy and students with low digital literacy; and 3) There was no interaction effect between the blended learning model and digital literacy on reading comprehension ability.


1 INTRODUCTION


Based on preliminary observations and the author's experience in examining assignments and several exam sheets of English education study programme students at PGRI University of West Sumatra, some problems are still worth reviewing both from the level of reading comprehension and understanding of the topic of the text being read. One of the results of the reading comprehension test test found that out of a total of 30 students who took the Advanced Reading course obtained an average score of 62.4. Where the average score obtained by students ranges from 60-70.


The main difficulty experienced by students in mastering reading comprehension skills is within the students themselves. They have low enthusiasm and motivation when faced with a lot of text. In line with (Nanda & Azmi, 2020), conducting in-class research at the University of Dharmas Indonesia, which states that motivation is the main factor that becomes a hurdle in learning reading comprehension so that

students are not interested in reading and concentrating on analysing the text. Furthermore, low knowledge of the topic of the text being read. This is in line with the findings of (Kikas, Silinskas, Mādamūrk, & Soodla, 2021) who stated that the texts given were not familiar to students so they struggled and spent a long time to understand one text that was more than 10 sentences.

Continuing from the previous paragraph, the researcher assumes that the blended learning can be used as a solution in improving learners' English reading comprehension skills. Where blended learning is able to actively engage learners to think creatively, self-learn and interactively which is the key to learning itself. Apart from these reasons, effective and efficient factors are one of the reasons why this learning model was chosen. This is in line with (Geng, Law, & Niu, 2019) which states that learning with any kind of model and model will not have a good and maximum impact if it is not used appropriately and efficiently.

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As a study material, this research is based on 5 primary reference sources that are used as a benchmark. Research conducted by: 1. (Muharlisiani, 2015) with the title "The Usage of Skype Messenger on Blended Learning, Weblog and E-learning to Improve Student's Writing Ability of the Fourth Semester in English Education Department, Faculty of Language and Science" Wijaya Kusuma University, 2. (Tang & Chaw, 2016) with the title "Digital Literacy: A Prerequisite for Effective Learning in a Blended Learning Environment", 3. (Broadbent, 2017) with the title

"Comparing Online and Blended Learner's self-regulated Learning strategies and Academic performance", and 4. (Kheirzadeh & Birgani, 2018) with the title "Exploring the Effectiveness of Blended Learning in Improving Reading Comprehension among Iranian EFL Students", and 5. (Alqahtani, 2019) with the title "The Usage of Edmodo: The Impact on Learning and Students' response". The variables studied by the researcher in order are about 1) blended learning, 2) digital literacy, 3) reading comprehension. Furthermore, these three research objects are included in the variables that will be studied next.

So the researchers in this study conducted experimental research to examine the effect of the blended learning model using two classes (Experiment class and control class) where each class received different treatments. The experimental class was treated with the flipped classroom model and the control class was treated with the a la carte model, although both types of models are contained in blended learning.

Formulation problems of the research were posed with these following research questions (Research Question):

Is there a difference in reading comprehension of students taught using the flipped classroom model compared to students taught using the a la carte model?

Is there a difference in reading comprehension between students who have high digital literacy skills and students who have low digital literacy skills?

Is there an interaction effect between the blended learning model and digital literacy on students' reading comprehension?

1.1 Theoretical Study

1.1.1 Reading Comprehension

Reading comprehension is a complex process of shaping the meaning in the text by interacting with it

through a combination of prior knowledge, past experience, information in the text, the reader's own stance (Pardo, 2004). In gaining good comprehension it is possible for readers to question, interpret, and evaluate what they read so that through reading they can have the ability to build knowledge, improve understanding, and ultimately change thinking (Harvey & Goudvis, 2007).

There are various factors that play a role in reading comprehension, namely; one of them is social motivation so that readers not only think about what they read but about what they learn and how it is formed so that they are able to develop insights and think more deeply and critically about the topic at hand and the world around them.

In addition, culture can also play a role in understanding a text based on the extent to which the writer and reader match the culture embraced in the text (Erten & Razi, 2009). The reader's cognitive development can play a role in his/her ability to understand the text by influencing his/her ability to evaluate it in different ways. Not only do readers use their skills, knowledge and cognition to comprehend the text but the culture, goals and motivations they bring to the text can also have an impact on their comprehension. In addition, readers need a variety of skills such as basic language skills, decoding skills, and higher-order thinking skills to be able to connect and understand texts. They also need to have different types of knowledge including background knowledge and content knowledge.

Readers need to be able to connect known information with new information to learn and create meaning.

Furthermore, the purpose of reading can also influence or change the way readers understand a particular text (Aarnoutse & Schellings, 2004). Motivation can also influence the interest, purpose, emotion or perseverance with which a reader comprehends a text. More motivated readers will try harder to understand and construct meaning from a text by applying a wider range of strategies while less motivated individuals tend to put in less effort and are rarely able to create meaning as strongly as highly motivated readers (Pardo, 2004). In line with Pardo, skilful readers use thinking-while-reading strategies to help them understand what they are reading (Aarnoutse & Schellings, 2004).

Connecting what readers know with new information is at the heart of learning and comprehension. Skilled readers ask questions about themselves, the author, and the text they are reading. They do this before, during, and after reading the text. They also draw conclusions during and after reading

and distinguish important from less important ideas in the text.

Skilled readers can synthesise information within and across texts to create meaning. They can monitor the adequacy of their understanding and correct incomplete understanding (Harvey & Goudvis, 2007). Therefore, both young and adult readers alike can benefit from comprehension strategy instruction (Guthrie, 2004). However, proficient readers are able to adapt strategies to suit their reading goals (Aarnoutse & Schellings, 2004; Harvey & Goudvis, 2007).

Online Percentage	Learning Type	Description
0%	Tradisional (TatapMuka)	Learning with On-line posted content not delivered in writing or verbally
1 sampai 29%	Facilitated Web	Learning to use web facilities to facilitatesomething very important in face-to-face learning. By using Learning Management System (LMS) of web pages, for example: to upload syllabus, materials quizzes, exams.

1.1.2 Blended Learning

Blended learning is a combination of two learning models consisting of face to face classes and information technology (e-learning) as written by (Garrison & Kanuka, 2004). Added by (Jachin & Usagawa, 2017), blended learning refers to learning activities that combine aspects of on-line and face-to-face learning. Furthermore, there are several aspects of information technology such as web-based learning, mobile learning, video streaming, asynchronous and synchronous audio communication combined with face-to-face learning (Graham, 2005). (Bonk & Graham, 2009) added that blended learning is a combination of different training media (technologies, activities, types of activities) used to form an optimum training programme for specific learners. The term blended means that training is delivered in a traditional educator-led manner supplemented by other electronic formats.

The difference between blended learning and e learning is the percentage of online media used in the learning or training. (Allen & Seaman, 2011) formulated the percentage of the learning model based on the use of online media used as follows:

30 sampai 79%	Pembelajaran bauran (<i>Blended Learning</i>)	Learning with a face-to-face system. The proportion of online content and substance using online and face-to-face discussions is balanced.
80+%	<i>Online Learning</i>	It is learning that is mostly or even entirely online. This type of learning does not utilise face-to-face meetings at all.

1.1.3 Digital Literacy

The term digital literacy was first expressed by (Gilster, 1997) in his book entitled Digital Literacy, where digital literacy is defined as an attitude to understand and use information in various forms from a very wide range of sources accessed through computer devices. Later, the term developed as stated by (Bawden, 2001) who stated that digital literacy is rooted in computer literacy and information literacy. Furthermore, (Hague & Payton, 2010) explains digital literacy as an attitude to create and share information in different modes and formats; which aims to create, collaborate and communicate effectively and understand how and when digital technology should be used to support the process. Then (Paul, 2017) explains the definition of Digital Literacy as an attitude towards the field of science to use remote technological devices for various purposes.

In line with the description above, the American Library Association adds that digital literacy is an attitude of using information and communication technology to search, evaluate, create, and communicate information, which requires both cognitive and technical skills. Finally, according to (Culture, 2017) digital literacy is the knowledge and skills to use digital media, communication tools, or networks to find, evaluate, use, create information, and utilise it in a healthy, wise, intelligent, careful, appropriate, and law-abiding manner in order to foster communication and interaction in everyday life. In conclusion, from some of the definitions above, it can be concluded that digital literacy is the ability to find, understand, evaluate, create and communicate digital information in various formats from various sources when presented through information technology.

2 METHODOLOGY

The research based on an experimental method with a 2X2 factorial design to test the hypothesis to prove the existence of a causal relationship between the two. The design can be seen in the following table:

Table 1: Factorial Design 2x2.

Treatment Attribute		Blended Learning Model (A)	
		Experimental Group (<i>Flipped Classroom</i>)A1	Control Group (<i>A La Carte</i>)A2
Digital Literacy (B)	High Digital Letacy (B1)	A1B1	A2B1
	Low Digital Letacy (B2)	A1B2	A2B2

The population of this study were students of the English education study programme who took Advanced Reading courses in the odd semester of the 2021-2022 academic year consisting of classes A, B and C. Two (2) classes consisting of 30 students for each class were taken deliberately to represent the population. Later two (2) classes consisting of 30 students for each class were taken deliberately to represent the population. Then these two classes will be divided into experimental classes and control classes using coins. The experimental class will get treatment where students in the group are taught using the flipped classroom model and the control class will get treatment by being taught using the a la carte model.

Data Collection Technique Researchers used 2 (two) instruments, namely reading comprehension tests and digital literacy questionnaires that had gone through validity and reliability tests first. Completion of the instrument in the form of a questionnaire is carried out at a time before the implementation of the treatment, then the reading comprehension test is given after the students get treatment. The data collected were then statistically analysed using a two-way analysis of variance (ANOVA)

technique with a significance level of 0.05. However, before the data from the hypothesis test results are carried out, normality test and homogeneity test are carried out as prerequisite tests.

3 RESEARCH RESULTS AND DISCUSSION

3.1 Data Description

The data obtained from the results of the research design include students' ability to understand reading texts in English after being taught using the flipped classroom and a la carte models that have high digital literacy.

Table 2: Summary of Group Description Data.

	MPB (A1)	MPT (A2)	SLDT (B1)	SLDR (B2)
N Valid	16	16	16	16
Missing	0	0	0	0
Mean	21	17,44	18,88	19,56
Median	21	17,5	21	20
Std Deviation	3,33	3,69	4,20	4,53
Variance	11,07	13,6	17,65	20,55
Mode	21	22	21	20
Highest	27	22	23	27
Lowest	14	8	8	13

The following table also shown the sub-group's descriptive data summary.

Table 3: Summary of Sub-Group Description Data.

	MPB- SLDT (A1B1)	MPT- SLDT (A2B1)	MPB- SLDR (A1B2)	MPT- SLDR (A2B2)
N Valid	8	8	8	8
Missing	0	0	0	0
Mean	20,25	17,50	21,75	17,38
Median	21	17,5	21	17,5
Lowest	14			
Std Deviation	2,76	4,60	5,95	2,83
Variance	7,64	21,14	35,43	8,00
Mode	21	22	21	18
Highest	23	22	27	22

This test is conducted to determine whether the data from each group comes from a normally distributed population or not. It is expected that the sample of 60 people consisting of 2 groups of students must be normally distributed.

A summary of the results of the normality test calculation is in the table below.

Table 4: Summary of Normality Test Calculation Results.

Group	N	Lcount	Ltable	Keterangan
A1	14	0,1635	0,227	Normally Distributed
A2	14	0,1239	0,227	Normally Distributed
B1	14	0,1590	0,227	Normally Distributed
B2	14	0,0924	0,227	Normally Distributed
A1 B1	7	0,1679	0,300	Normally Distributed
A2 B1	7	0,1861	0,300	Normally Distributed
A1 B2	7	0,2143	0,300	Normally Distributed
A2 B2	7	0,1214	0,300	Normally Distributed

From the table above, it is known that tested for normality that the reading comprehensionscores of all groups of students tested for normality by the Liliefors test give the value of L0 or the observation value of Liliefors is smaller than the Ltable or the critical value of L at the significance level $\alpha = 0.05$ with $n = 7$, the value of $L_t = 0.300$ and $n = 14$, the value of $L_t = 0.227$. Thus it can be concluded that all reading comprehension scores of all sub-populations in this study come from a normally distributed population. In the appendix, it can be seen from the detail regarding of the results from the normality test.

Homogeneity Test

F-test

From the calculation, the value of $F_{count} = 1.89$ and the value of $F_{table} = 2.58$ at the significance level $\alpha = 0.05$ and $dk_1 = 13$ and $dk_2 = 13$ so that H_0 is accepted

Table 5: Summary of Homogeneity Test Results.

Group	Variance	Joint Variance	X^2_{count}	X^2_{table}	Conclusion
A1B1	4,57	6,64	3,15	7,82	Homogen
A1B2	4,95				
A2B1	3,90				
A2B2	13,14				

3.2 Research Hypothesis Testing

By using the two-way ANOVA table, the analysis results are obtained as in the table below:

Table 6: Analysis of Variance Result Using SPSS. Tests of Between-Subjects Effects Dependent Variable : Reading Comprehension.

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	72.000 ^a	3	24.000	1.756	.182	.180
Intercept	10108.000	1	10108.000	739.610	.000	.969
Learning Model	.571	1	.571	.042	.840	.002
Digital Literacy	69.143	1	69.143	5.059	.034	.174
Learning Model & Digital Literacy	2.286	1	2.286	.167	.686	.007
Error	328.000	24	13.667			
Total	10508.000	28				
Corrected Total	400.000	27				

R Squared = ,180 (Adjusted R Squared = ,078)

Tests of Between-Subjects Effects
Dependent Variable: Reading Comprehension

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	110.594 ^a	3	36.865	2.860	.055
Intercept	11819.531	1	11819.531	917.068	.000
Learning Model	101.531	1	101.531	7.878	.009
Digital Literacy	3.781	1	3.781	.293	.592
Learning Model & Digital Literacy	5.281	1	5.281	.410	.527
Error	360.875	28	12.888		
Total	12291.000	32			
Corrected Total	471.469	31			

R Squared = ,235 (Adjusted R Squared = ,153)

Figure 1: Interaction Test Plot.

Further discussion of the results of testing the research hypothesis is as follows:

First Hypothesis: There is no difference in students' ability in reading comprehension using English between those who learn with the flipped classroom model and those who learn with the a la carte model.

Second Hypothesis: There is a difference in reading comprehension between students that have a decent digital literacy skill and students with the low digital literacy skill.

Third Hypothesis: Lack of acknowledgement between learning model and digital literacy on students' reading comprehension.

4 CONCLUSION







The findings that have been stated in the results of data processing can be summarised that the reading comprehension of English texts in the group of students taught using the flipped classroom model is not significantly better than the group of students taught using the a la carte model. Then the results of the English text reading comprehension test for students who have different digital literacy taught using the same model have different results. Finally, there was no interaction between the blended learning model (flipped classroom model, a la carte model) and digital literacy (high digital literacy, low digital literacy) on reading comprehension.

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Developing RELT Materials Based on PjBL for Teaching the English Department Students of Z-Generation

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Abstract: This study is to explore the use of PjBL (Project-based Learning) in teaching Research in English Language Teaching (RELT) to English students as a Z-generation. It is studied by the R n D method using the ADDIE model. The instruments are validation sheets, questionnaires, interviews, and tests. Data have been analyzed by reading, coding, and interpreting the data; then descriptive statistical analysis. It is found that the students and lecturer need the materials of RELT taught by PjBL and had a positive perspective on it. There are two products produced; students' and lecturer's books; and the materials developed are effective to be used by English students because of the difference in the mean score between the pre-test and post-test (59.85 and 68.30). It is also found that more than 60% of students in the RELT classroom felt good in comprehending the material. The hypothesis is accepted because the result of the t-test (5.878) is counted higher than the t-table (2.093); or in 0.001 which is lower than 0.05. It is indicated that the RELT materials developed by PjBL are valid, practiced, and effective for teaching Z-Generation of English students. So, it can be concluded that RELT materials based on PjBL are appropriate for teaching students in the university level.


1 INTRODUCTION


A research method is one of the learning subjects for university students, and it is also submitted to the English students of the State Islamic University of Syekh Ali Hasan Ahmad Addary Padangsidempuan (UIN Syahada Padangsidempuan). This subject is given to the students in 2 (two) semesters with different names of the subjects; they are research method and research in English Language Teaching (Hilda et al., 2019). The research method is a subject of learning to give the students information, knowledge, and comprehension about how to do research. It is known as steps or procedures or techniques that are done specifically for the collection


and analyzing the data (King et al., 2017; ScribbrTeam, 2022).


Project-based Learning (PjBL) is not a new teaching model; however, it is still useful to improve student's learning ability in the current time. As it has been stated by Ketut & Cahyani (2021) and Sari & Prasetyo (2021). Based on their findings, PjBL is a good model for making the students are being able to comprehend and increase students' creativity and critical thinking. By using PjBL, they found that the student's learning of creative and critical thinking increase; it is proved that this model is still suitable to the current era of the teaching learning process.


Sari & Prasetyo (Sari & Prasetyo, 2021) conducted research and had proven that implementation of PjBL has given good improvement


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to students' critical reading; the students had high motivation in finishing the reading tasks by using PjBL. It is also seen that PjBL can be good for improving speaking ability

(Bakar et al., 2019; Qisthi & Arifani, 2018; Yang & Puakpong, 2016). Beside, PjBL also had good result when it is used to develop learning materials (Hasanah et al., 2018; Ismail et al., 2021). Both of the result of the research showed that the students have positive perception about developing learning materials or students' worksheet using PjBL. The validation result is also showed in very good validity; it means that developing materials for learning based on Project-based Learning have proved to make good result for learning. Based on the result, it is known that PjBL is respectable to learning process or even to develop materials for learning. Students' learning activities, language learning, and many aspects of learning after giving the PjBL learning model improved.

Moreover, teaching students in G-generation demand the inspired teachers. G-generation is the students who born in the periods year between 1995 and 2012; and they are stated as the internet generation (Gabrielova & Buchko, 2021). As the G-generation, almost several hours in a day used internets, used their gadgets that is used not only to communicate but also for having exist in social life. As the internet generation, it is the chance of the teachers to utilize their habit to support their learning process.

Students in English department are required to have research projects at the end of their study, and they are prepared to do it with two subjects of learning (Hilda et al., 2019). To make the students gain the aims of the lessons, they must do such kinds of research project, such as writing mini proposal or even writing mini research related to their interested. PjBL model is one of the appropriate models of learning for preparing the students to make their mini project. Because of that the writers are interested to develop materials for learning Research Method with PjBL. This model is focused on tasking the students to do activity to produce something beneficial for their learning process (Iskandar & Mulyati, 2019). This model has main activity with a series of group activities based on the projects to make the students engage in learning (Ratuanik & Nay, 2017). The writers believed that developing the material based on PjBL is appropriate to help the students arranging the research projects. So, this research was done based on this reason.

The students in Z-Generation which is very familiar with internet have the ability to make many

contents and sources for their learning. They will search many examples from the internet, they analyse, then create their own project related to their interested.

Based on this condition, it is very interested in doing research by developing the learning materials for research methods in English Language Teaching (ELT) based on Project-based Learning (PjBL) for the English students of Z-Generation in UIN Syahada Padangsidempuan. The objectives of this study are to develop the learning materials for research in ELT, to the effectiveness of the materials developed, and to explore the students' attitudes to the materials.

2 LITERATURE REVIEWS

2.1 Instructional Materials

Instructional material or learning material is known as Teaching and Learning Materials (TLM) as anything that can be used as tools for facilitating learning in delivering the materials in the teaching-learning process. TLM is the group of learning resources and materials of the lessons that are used by educators to train their students to support learning aims for all subjects (Tomlinson, 2014). It is also understood as a diversity of educational materials that the teachers or lecturers use in their classroom to back specific learning objectives, as displayed in lesson plans. Lack of necessary materials and lack of competence of the teachers in teaching effectively will affect the learning process and the result of learning (Chidi-Onwuta et al., 2022). So, it can be stated that instructional material is important; and it is a set of teaching materials to be delivered to the students to reach the learning objectives.

The textbook is a kind of instructional material have an important position in learning for both lecturer and students. All the material in teaching is contained in a textbook. Learner who does not have a textbook with them during the teaching-learning activities will not be able to follow the lesson well. In the other word, a lack of textbooks in teaching and activities can create less success in teaching (Prasetyo, 2022). Therefore, the use of appropriate textbooks in teaching English attracted students' interest in reading and understanding the course.

In this study, we developed TLM about research methods in English Language Teaching. The materials developed provide the English students to create their results, such as how to make correlational research, how to create a research proposal, and so on.

2.2 Project-Based Learning (PjBL)

This section is a brief description of PjBL around the definition and advantages, and disadvantages of Project-based Learning.

2.2.1 Concepts of Project-Based Learning

Project-based Learning or PjBL is a model of learning that is posed to the students to learn by doing a project. It is a kind model of teaching which emphasized the students to create or produce the product during the process of learning (Sharma, 2021). The project-based learning model is authentic in a constructive investigation by giving direct experience to students through project-making activities so that the teacher is only a facilitator. Projects contain complex, challenging, and demanding tasks for students to design, solve, decide, investigate, and provide opportunities for students to work independently (Suherman et al., 2020). Project-based learning creates students' creative thinking to produce the learning outcomes.

Project Based Learning model provides opportunities to students to be involved in learning and can construct their knowledge (Safaruddin et al., 2020). It is an active student-centered form of instruction that is characterized by a student's autonomy, constructive investigation, goal setting, collaboration, communication, and reflection within real-world practices by presenting learners with problems or a certain situation and motivating learners to identify and carry out the solutions (Puangpungsi, 2021). It means that Project Based Learning model is student-centered learning with the principle of contextual, active involvement of students in teaching and learning to achieve learning goals and competence. Besides, the Project Based Learning model emphasizes students to solve problems in learning.

Based on the explanation, it can be concluded that PjBL is a model of teaching and learning which provided the students to be active in creating products related to the subjects of their lessons.

2.2.2 Advantages and Disadvantages of PjBL

Project-based Learning (PjBL) has some advantages and disadvantages. Karyawati (2018) served the advantage of PjBL is making the students active in the classroom, making fun of learning, and reinforcing students' knowledge. She also adds that PjBL activities are successful in the classroom in minimizing the stiff and formal relationship between

the teacher and students. The students can improve their creativity and problem-solving skill, and the students can learn by doing.

Besides, project-based learning can also make students actively engages in project learning (Astuti, 2020). Project-based learning is a method in which the students are learning through a project that is decided by themselves with the help of teachers so that they can be actively engaged in the learning process. Having active students makes them good comprehend materials. Project-based learning facilitates the teaching and learning process, involves students in the learning process, motivates and encourages the creativity of students (Hidayah et al., 2021; Ketut & Cahyani, 2021). The students focus on finishing their projects to improve their language skills.

Besides having advantages, PjBL also has disadvantages. Some of the disadvantages are time-consuming and uncomfortable for students who do have not similar abilities. (Guido, 2016; Hidayah et al., 2021; Sharma, 2021). The advantages of the PjBL happen when it is applied because it needs time to prepare and to do the PjBL, needs time to understand the model. In addition, the students must in the same abilities, however, not all students in a class have the same ability.

PjBL will give a good effect on the students because of the advantages. However, the disadvantages that occur can be minimized by making various kinds of learning models or combining PjBL to another model of learning.

2.3 Research in English Language Teaching

Research in English Language Teaching (RELT is a kind of lesson or subject of learning in the English Department of UIN Syahada Padangsidempuan. It is the second subject of the research method that is distributed to the students in two semester (Hilda et al., 2019). It is aimed to give the students research knowledge and to train the students to be able in doing research related to English language teaching.

2.4 Z-Generation

Z-Generation is the generation with the age of about 20 this year. It is the generation born between 1995 – 2010 who are very familiar with the use and the function of the internet; they live and are usual with digitalization (Dewi et al., 2021; Gabrielova & Buchko, 2021; Soraya & Surya Ariyani Pedo, 2021).

So, Z-generation is the generation that very close to internet life.

However, the students in Z-generation need to be served with the internet because the internet or the digital world is very useful in supporting educational life (Amalia & Halim, 2022; Martin et al., 2022). Many proves shown that the use of the internet or digitalization has given not only a positive side but also a negative side. It can be seen that the English students as Z-Generation agreed that learning using digital learning such as the online learning system is challenging for the students (Harida et al., 2020). It can be said that the students are ready to face digital learning. Furthermore, the Z-generation students need to get the benefit of the internet or digital system of learning to help them in learning. The development of the materials for learning in RELT is also related to the use of the internet or digitalization because some of the materials and tasks in the materials are stated with links only. So, the learning process and tools must support the study of Z-Generation in the English department of UIN Syahada Padangsidempuan.

3 METHODOLOGY

This study is a Research and Development that is to develop materials for learning Research in English Language Teaching (RELT) by using Project-based Learning (PjBL). There are several participants in this research: validators, students, and lecturers. There are 3 (three) validators, 60 (sixty) students as participants in gaining the data of students' needs, 5 (five) students as the participants in small try out, 30 (thirty) students as participants in the experimental step, and 1 lecturer that has participated in this study. The validator is important to evaluate the instruments and the projects valid, and the students to get the data about students' needs on the materials of learning, the effectiveness, and the implementation, while the lecturer is to take the data about the lecturer's needs on the materials and methods used in developing the materials. ADDIE is the model used in developing the materials. As stated by (Branch, 2009) that ADDIE is appropriate to build a learning environment for performing authentic tasks, and complex knowledge.

In the step of Analysis, the authors have analyzed the students' and the lecturers' need for the materials. The next step is Design in which the authors have designed two products as materials for teaching and learning RELT based on PjBL; they are students' and lecturers' books. In Develop step, the authors came to the suggestion, critics, and input from validators,

students, and participants of the Focus Group Discussion. The fourth step is the Implementation step by doing two kinds of trials; small try out and pre-test and post-test control design of experimental types. The result of a small tryout was used as the consideration to make a further try at the participants (15 students as an experimental group).

Some instruments have been used to gather the data; such as questionnaires, observation, and interview guidelines, and also tests of knowledge about the materials. The data that have been collected were analyzed qualitatively and quantitatively. In qualitative analysis, reading, coding, grouping, and describing were used; while in quantitative analysis (to get the value of mean-score, normality, homogeneity, and t-test), SPSS 23 was used. The data was also well-arranged into a distribution of frequency and figured out through histogram.

4 RESEARCH RESULTS AND DISCUSSION

4.1 The Result of Need Analysis

There were two kinds of data namely quantitative data and qualitative data (Karnedi, Zaim, 2021). Data about need analysis were gained from the questionnaires from the students, lecturers, and experts. The data showed that all of the instruments and products in the level of valid. All the instruments have been validated; and the result is shown that valid, so it can be used to collect all the data. The data are about the students' and lecturers' needs, the student's attitude to the materials developed, and the students' results on understanding the concepts of the research in ELT.

Table 1: The Result of Students' Need for Method or Model of Teaching

No.	Needs of Method/ Strategy/ Techniques/Model of Teaching	Quantity	Percentage
1	Project Based learning	25	41%
2	Problem Solving Based Learning	5	8%
3	Discussion	12	20%
4	Drill	2	3%
5	Presentation	5	8%
6	Direct Method	2	3%
7	PjBL, Presentation, and FGD	1	2%
8	PjBL, DM, Drill	1	2%
9	Nihil	4	7%
10	All	4	7%
Total		61	100%

Based on the table, it is seen that various methods are proposed to the students in their learning of RELT. The result of the interview can be concluded that all the students need a method of learning, and project-based learning is the highest need of the students in learning; that is the result of PjBL as a model for developing the materials for learning RELT. Project-based learning is stated suitable for studying RELT courses because it makes the students easy to understand the materials and makes them active in learning, and in creating their ideas.

In addition, on the result of the lecturer's need for the materials of RELT, it is seen that the materials are needed for teaching RELT materials. The lecturer said that the developed materials are needed for research in ELT. This is under what was conveyed by Al-busaidi & Aleyabi (2021) and Mahasneh & Alwan (2018) that was projects are attractive to students and teachers because of their flexibility. Based on the result, it is known that the development of materials for RELT is necessary. develop the learning materials for research in ELT, to examine the effectiveness of the materials developed, and to explore the students' attitudes to the materials.

4.2 The Result of Research

Based on the result of the research done through the ADDIE model; it was in the steps of designing and developing, the result showed that the materials for RELT used PjBL in four steps (planning, practice, project, and evaluation). The steps of PjBL in developing two products are as seen in the following figure:

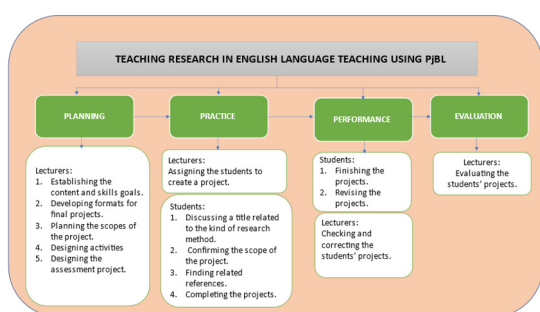


Figure 1: The PjBL procedures for developing RELT materials.

The RELT materials developed by using the steps of PjBL above. The materials developed are in two products; they are students' book and lecturer's book. Both of the products have been implemented to the students in the process of teaching and learning RELT.

The materials developed for learning research in English Language Teaching are:

- 1) Introduction to Research in English Language Teaching and Project-based Learning.
- 2) Quantitative, Qualitative, and Mixed-Method
- 3) Descriptive Research
- 4) Experimental Research
- 5) Correlational Research
- 6) Comparative Research
- 7) Classroom Action Research
- 8) Language Research
- 9) Ethnography
- 10) Phenomenology

The differences between students' and lecturer's books are that the students' book consists of learning objectives, materials, and the exercise at the end of the book chapter as the projects. However, the lecturer's book beside consists of such information similar to the students' book, it also consists of syllabus and the complete evaluation but in the materials, not all the materials stated in the students' books available in it. The 9th and 10th materials are not served all to the students who learn RELT; they are as supplementary topics, if necessary, in learning English teaching research.

Further, we also see for the practicalities of the products as seen in the table below:

Table 2: Practicalities of the products.

No.	Categories	Mean -score	%	Inter-pretation
1.	Usability of learning materials.	0.70	70%	Practice
2.	Easiness of procedures of learning RELT by PjBL	0.70	70%	Practice
3.	efficient to be used	0.80	80%	Practice

The result showed that the books developed are practice; it means that the books can be used for teaching the students to learn research in English Language Teaching. It is realised that the usability of the books and the easiness of the procedures of using the books are 70%, while the efficient of the books to be used in 80%. Based on the result, the researchers believed that the books can be useful for many students who learning research, especially for English Language Teaching.

In addition, the existence of books has helped the students in learning research in English Language Teaching. The result of the small try-out showed that

5 (five) students who used as the students who get the small treatment had good results in making a research proposal on experimental research.

Table 3: The Result of Small try-out.

No.	Students	Pre-Test	Post-Test
1	DW	64	68
2	SD	68	72
3	INR	64	74
4	FYS	54	58
5	DEL	78	80
	Total	328	352
	Average	65.6	70.4

By looking at the table, it can be grasped that the students' pre-test result was in mean-score 65.6; it is in enough comprehension of the materials. Then, the result of the post-test showed a mean of 70.4; it is on the level of good. Although the range of scores is not so different, it has shown the different results between pre and post-test of the students after trying out to study RELT materials of experimental research by using PjBL

Based on the result of the small try-out, we decided to implement the products to the students into two research kinds; they are experimental research and correlational research. The experimental research with pre-test and post-test control group design has been chosen as the design of the research. It has been done in two groups which consist of 15 (fifteen) students in each group (experimental and control group). The result proved that the student's understanding of the kinds of research methods is good because the students achieved an average of 68.30 (good category) while before learning with the materials given, they only got 59.85 (in enough category). The range of achievement was 8.45. Meanwhile, the result of the test in the control class presented that the score in the pre-test was 59.10 and in the post-test was 62.95 with a range of improvement of only 3.85. It means that there is a significant difference between the students who taught by using learning materials by PjBL with the materials available.

In addition, when it is compared, to the result of the post-test for the experimental and control class, it is seen that there is a difference between them, and the students who learn the RELT materials developed are getting better than those who did not. Know whether the products, the materials, are effective or not to the student's learning, it can be seen from the result of the t-test. Before, it is needed to check the

result of paired samples statistics as in the table below:

Table 4: The result of paired sample statistics.

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	PreTest	59.85	20	16.135	3.608
	PostTest	68.30	20	16.445	3.677

Based on the result it is shown that the pre-test score was smaller than the post-test (59.35<68.30); it can be concluded that RELT materials developed by PjBL are effective in the students' result of learning.

Next, to see the hypothesis of whether it is significant the effectiveness of RELT materials on the students' learning results let's see the result of paired sample t-test. When the result of Sign. < 0.05, the result of students' learning is effective by using the materials developed; however, it is the result of Sign. >0.05, it means there is no significant result of the products to the student's learning.

Based on the result of the t-test (to test the hypothesis), it is counted that the Sign. The value of the t-test was 0.001 and it is smaller than 0.05 (0.001 < 0.05) or the t-test (5.878) is counted higher than the t-table (2.093), and it can be concluded that there is the significant effect of learning RELT by using materials developed by PjBL through ADDIE model.

The result can be seen in the following table.

Table 5: The result of t-test.

Paired Samples Test									
	Paired Differences				t	df	Sig. (2-tailed)		
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference					
				Lower	Upper				
Pair 1	PreTest - PostTest	-8.950	6.809	1.523	-12.137	-5.763	-5.878	19	.001

Based on Based on the value of the t-test above, it can be said that there was a significant effect of materials developed using PjBL on the students' results on learning RELT of the English students UIN Syahada Padangsidimpuan.

Further, the students' attitudes to the materials are also needed to be known. It is known that more than 60% of English students had good responses to the materials developed. It is found that about 73% of students felt comfortable with the materials based on PjBL given, and about 68% were motivated and interested to learn. The last, about 75% of students said that through this material they understand the

method of research. As a result of the student's perception, the researchers inverted that the students had a positive perception of the projects, on the materials developed, that is the RELT materials developed by PjBL.

Finally, besides the students' perception, based on the result of practicalities and effectiveness, it can be concluded that the products or the materials developed are valid, practical, and effective to be used for learning Research in English Language Teaching.

It is implied that the materials developed can be used for the University students, not only for UIN Syahada students but also for every student who learns research methodology related to the kinds of research developed for the materials learning.

By understanding the result of this study, it is known that this result is supported by what the previous researchers found. As found by Hidayah, et al, (Hidayah et al., 2021) PjBL has the advantage to make the students' competencies improve. What has been done by some experts before, such as Putra, et al (2020) and Zuhrita, et al (2016), and Wahyuni (2014), have also proved by this research. However, Putra did it for entrepreneur materials while this research is for research materials. In addition, when this research has done about research materials and Zuhrita developed the materials for ASSURE model. The last is Wahyuni who stated that PjBL is really beneficial for teaching educational research in Linguistics, however, this finding is to the research in English Language Teaching. What have been stated before have been as evidence that developing materials can be done by using the PjBL method, and PjBL model is very helpful in giving practical experiences to the students; however, the research methods in ELT are a kind of subject to prepare the students in building their real projects, their thesis.

Finally, it is necessary to see the novelty of this research. As stated before that there are no materials developed for research method in English language teaching subject, so it becomes an interesting materials when the students asked to study by using PjBL. Another novelty that can be show up is that this research has 4 steps (planning, practice, performance, and evaluation) in learning by using PjBL, while the process of learning PjBL by Wahyuni is only 3, planning, practice and performance. The findings is still needed to be enlarged to make the students become better and to build more references in research in English language Teaching for Indonesia students who learn English as their major.

5 CONCLUSION

The result of validation from the instruments is stated as valid and reliable. It is seen from the result of the validation score that every instrument and the products are valid. Two products have been developed in this study; they are students' books and lecturers' guidance in teaching Research in English Language Teaching (RELT) by using Project-based Learning (PjBL). Besides valid, the products, and the materials for teaching and learning RELT based on PjBL was also valid.

The students' responses to the materials are really good and they were also enhanced in learning the material of RELT by using PjBL, which is proved by the result of implementation. It is seen that the students' result in understanding the materials and in making the final project that learn by using PjBL is better than the students who did not. Finally, it is stated that the learning materials of RELT by using PjBL are valid, practiced, and effective; so, it can be used for teaching the students in IAIN Padangsidempuan the learning subjects of research, and other colleges which have the same topic related to research methodologies. Z-Generation needs materials for learning that is not only by reading books but also by practicing through a project and integrating with digitalization. Unfortunately, this study was not developed for learning English subjects; however, further researchers need to explore more about developing materials based on PjBL to study many aspects of English learning.

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The Principal and Kiaito Supervision Development of Teacher's Pedagogy Capability: Comparative Leadership Analysis

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Keywords: Supervision, of the Principal, Kiai, Leadership Comparative, Boarding School.

Abstract: The goal of this study was to ascertain the following: (1) the role of school principals, and Kiai in overseeing the development of Kemendikbud Ristek-based schools; (2) the strategies used by principals and Kiai in overseeing the development of Kemendikbud Ristek-based schools/curricula; and (3) the results attained by principals and Kiai in overseeing the development of schools/curricula based on the Ministry of Education and Culture, Research, A case study research design is used in this study, which takes a qualitative approach. Both Hidayatullah Kuaro Senior High School in East Kalimantan and Darul Istiqomah Barabai Junior High School in South Kalimantan are the sites of this study. Methods for gathering data include in-depth interviews, field observations, and documentation. Reduction, data visualization, and analysis are the methods used. Verification of data The findings of this study relate to internal aspects, such as the function of principals and Kiai supervisors, the tactics employed by principals and Kiai for supervising, the performance principals and Kiai create as supervisors and the elements that support and impede development. Teacher performance monitoring activities through monitoring teacher performance measurement, coaching related to pedagogic competence, improving performance as an effort to improve the results of teacher supervision in carrying out online learning. Specifically increasing its pedagogical competence, namely integrating technology into learning and managing interesting learning content.


1 INTRODUCTION


The main factor might affect whether an organization succeeds in leadership. A leader must persuade his teammate to work toward predefined goals. To successfully foster or lead the company he leads, a leader also needs to have a positive personality. This is highly helpful for managing the organization's prospective resources. The school principal is the institution's chief executive. As a leader in educational institutions, the principal plays a significant part in empowering the available resources in his school. The educational process can function efficiently and appropriately if a school


principal is able to employ potential resources wisely. Wahjosumidjo (2011: 17)


In the develop course, the principal's role is crucial. In this situation, the principal has an impact on educational institutions whether it will succeed or causing a failure in their development. Andriani (2008: 59–60) describes the principal's position as a catalyst or someone who promotes the development and assigns the responsibility of persuading school personnel of the urgency needs for school development in order to raise the teaching standards. Through his leadership, the leader may control these changes. Wibowo (in Supriyanto, 2009),


This consist one of the skills that the superiors in a certain educational area must learn regarding of the

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leadership in order to implement a decent managing arrangement for the organization that they have oversee and pursue it on a better path. Development is required at schools and certain educational area to raise the teaching standards from both aspects which conclude the input and outcome of the educational process. It is said to be successful if educational input can foster a novel, engaging, imaginative, efficient, and enjoyable learning environment. If the results—both academic and non-academic—are strong, the output can be considered successful. A school must develop in accordance with the times and the demands of the institution as well as the community it serves. The leadership exercised by religious-based boarding schools can lead to the development of school principals and kiai. Institutions for Islamic education provide spaces for all Islamic educational endeavors. Individuals come together to establish groups. Speaking of groups, it goes without saying that there is always one individual who stands out and has the ability to influence others. Because of this, the term "leader" is used to describe the process of directing and organizing the actions of these groups. The success and viability of an educational institution are significantly impacted by the leadership development process.

Leadership responsibilities and tactics will result in performance that has an effect on raising educational standards. Performance is a thing that people produce within a certain time frame and according to certain standards. According to Prawirosentono (2002: 23), performance is an effort by someone from a certain work that has been completed with the tasks assigned by an organization in accordance with their respective authorities and responsibilities in order to achieve organizational goals ethically, morally, and legally. However, there must be significant barriers that the leader must overcome in order to carry out the progress—limits Of Organizational Change by Kaufman (1985:8).

Technology these days has a really massive development as it bring changes to education, not only for the content of curriculums but also changes in pedagogy, which cause a teaching method based on technology, Afandi in Purnasari and Sadewo (2020).

After the pandemic era, online learning that utilizes digital technology for learning activities were still being depend on until now despite the pandemic era is over. However, there are some challenges to this phenomenon. In an interview with teachers at school, the teachers were explaining about the content of the material they had presented per chapter in the form of e-books, powerpoints, and learning videos. When the teaching method through the presentation

was to be shown, there are barely any students asked the teacher for further explanations (Fajriani, 2021). Many teachers outside Java are confused about preparing online materials. In addition, network problems that hinder the teaching process to deliver their lessons was considered to be not optimal. Not all teachers master IT as it lead them to the difficulties of designing lesson plan and that cause a problem of struggling to integrate any kinds of learning method, hinder to evaluating learning methods and so on (Kusumahati, 2021).

Teacher's way of presenting their lesson and materials is the successful level of teachers in carrying out tasks in accordance with their responsibilities and authorities based on their performance standards to achieve goals. Teacher competence in the learning process and outcomes are grouped into four abilities, namely planning teaching and learning programs, implementing / managing the teaching and learning process, assessing the teaching and learning process and mastering, (Septiawati and Eftanastarini, 2020).

The general purpose of education is to help students reach their own maturity, so that they are able to standby themselves in the middle of society. One of the prerequisites for education to function and achieve goals as formulated in the law, education must be "administated", or managed by following administrative science. Gagne and Berliner in Makmun (2005: 23) put forward three functions or roles of teachers in the process, namely as: 1) Planners who prepares what must be done in the teaching and learning process (pre-teaching problems). 2) Organizers who creates the situation, lead, stimulate, move, and direct teaching and learning activities according to the plan, act as resource persons, leadership consultants (leaders), who are wise in a democratic and humanistic (humane) sense during the process/ during teaching problems, 3) The assessor (evaluator) who collects, analyze, interpret and finally giving out consideration (judgement) to the success rate of teaching and learning based on the criteria set both regarding the effectiveness of the process, as well as the qualifications of the product (output). Highlighting the role of the teacher, teachers must strive to improve competence in the learning process, starting from planning, implementing and evaluating.

Teachers must develop an active, creatively innovative and fun learning process. Teachers were also permitted to give the students their own space to develop the potential that they have within themselves. One way to develop active and creative learning is the use of ICT in learning, so that learning is effective and consist with high quality outcomes.

Learning that takes place effectively and considered high quality will have implications for improving the quality of student learning processes and outcomes. Teachers must be able to develop learning designs and be skilled in using online learning media (Adlin, 2019).

Teachers at Hidayatullah Kuaro Junior High School and teachers at Darul Istiqomah Barabai Junior High School have carried out a small teaching and learning process supported by ICT (Information Communication and Technology) facilities. But more teachers have not used ICT media in learning, and do not even understand how to use it. Such conditions make the teacher's ability or mastery of the use of ICT in carrying out learning in the classroom, or other places of learning less mastered. For example, there are still teachers who do not understand computer operations, let alone on the internet. This deficiency will certainly hinder efforts to improve the quality of learning processes and outcomes in schools because the competencies are not well mastered. In fact, the success of an activity, of more than 50% is determined by good competence, so the success of learning is largely determined by the competence of the teacher.

2 LITERATURE REVIEW

2.1 Supervision of the Principal

When and where it is needed, professional guidance and support, known as supervision, is given to students at all educational levels (Taymaz, 2011, 4). It is a process that consists of aspects for analysis, evaluation, correction, and development (Başar, 1998, 4), as well as administrative, contextual, and educational acts (Wiles and Bondi, 2000, 11–13), and it is the hub for creating new teaching methods (Sullivan ve Glanz, 2009, 4; Kalule and Bouchamma, 2007, 90).

The supervision idea, according to Purwanto (1987), is a training activity that is intended to help teachers and other school staff carry out their jobs successfully. According to Sahertian (2000), supervision refers to the actions taken by school administrators to guide teachers and other staff members in improving instruction. This includes motivating, choosing teachers for job growth and development, and updating educational objectives, teaching materials, teaching methods, and evaluations.

The goal of supervision is to enhance and develop the learning process overall, which implies that it is

not only important to enhance the caliber of teachers but also to promote the development of the teaching profession by providing facilities that facilitate effective instruction. Provide direction and coaching in terms of curriculum implementation, selection and use of teaching methods, learning materials, procedures, and teaching assessment approach to help teachers enhance the quality of their knowledge and abilities (Al-Kiyumi & Hammad, 2020; Nilda et al., 2020).

Supriono (2014), States that the specific goals of educational supervision at the federal level include 1) assisting teachers in understanding educational goals; 2) assisting teachers in directing student learning experiences; 3) assisting teachers in using modern learning tools; 4) assisting teachers in evaluating student progress and the outcomes of the teacher's own work; 5) assisting teachers in using learning experiential resources; 6) assisting teachers in meeting student learning needs, and 7) assisting teachers in meeting their own professional development needs. Helping new instructors at the school feel satisfied with their assignments; 9) Aiding educators in finding ways to more readily adapt to society and make use of community resources; 10) Assisting teachers so they can commit all of their time and effort to the growth of the school.

The oversight exercised must be capable of enhancing the efficiency and effectiveness of the organization's management procedures. The benefits and drawbacks of management implementation will be understood through oversight at all stages of the process, including the beginning, middle, and end. (2015) Suprihatin Suprihatiningrum (2014).

According to Depdiknas (2006), The role of supervision from the standpoint of national education policy, principals were being involved in seven major roles: (1) educators (educators); (2) managers; (3) administrators; (4) supervisors; (5) leaders; (6) cultivators of work climate; and (7) entrepreneurs.

The purpose of supervision is to help teachers create suitable environments for teaching and learning activities so that students may learn effectively, whether through one-on-one or group instruction. The principal, who acts as a supervisor and must be able to offer guidance or lessons and appropriate solutions to deal with a variety of student-related issues, and carrying out specific techniques. The principal can assist teachers in order to pertaining the implementation of the school curriculum. The following tasks can be completed as part of this curriculum activity: creating semester schedules and learning program plans (RPP).

Susanto (2016) defines the group technique as the application of supervision to a group of supervised individuals. The supervisor may put people in a scenario where they are all suspected of having the same issue. Regarding the methods that can be used, they include holding meetings, having group discussions, providing in-service training, and giving seminars.

Principal Supervision Indicators According to Permendiknas Number 13 of 2007, school principals are required to meet certain competency standards. These standards include: 1) Planning supervision programs to boost teacher professionalism, including the Supervision Planning Program, notebooks purchase, instruments, and learning supervision schedules.

Teacher competence is a factor supporting successful learning in schools. One of the competencies of the teacher is pedagogical competence. Based on Law Number 14 of 2005 explains that pedagogic competence is the ability of teachers to manage the learning process of students consisting of a basic understanding of education, students acknowledgment, development of learning tools, learning design, implementation of dialogical and educational learning, utilization of learning technology, learning evaluations, and development of the students potential (Kurniasih & Sani, 2017). Teachers' pedagogical knowledge affects the quality of teaching understanding which has an impact on student learning outcomes. If the teacher has a good quality within themselves, the students might be involved into the decent quality impact.

2.2 Kiai

Charisma for leaders in their leadership is rooted for the influence (emotional) of their followers, and usually, this charisma arises from the personality values of a leader. In Islamic boarding schools tradition, charismatic leadership arises from the high knowledge possessed by the kiai, obedience to Islamic teachings, noble character, and having the highest station in the Erekat, for example, makrifat (Abdul Gaffar Karim (2009: 103), Horikoshi (1987: 226-227). The implication of charismatic leadership is the occurrence of dynamic changes in the organization. In Islamic boarding school, charismatic leadership encourages dynamic change and obedience to ustadz, students, and the community around the school, so that the kiai become the role model of social arrangement.

The charisma of the kiai in the Islamic boarding schools derives from a combination of (traditional)

Islamic education and the charisma acquired or inherited (genealogically) or charismatic leadership attributes of kiai (Inayah Rohmaniyah and Mark Woodward, 2012: 123). (Sukamto, 1999: 23). Ideology can be strongly persuaded to take lead under charismatic leadership (Chumaidi Syarif Romas, 2003: 205). Big bodies, strong voices, keen eyes, the presence of genetic linkages to prior charismatic kiai, and engineering processes can all be used to produce compelling leaders (Abdur Rozaki, 2004: 87-88).

Giving special kiai titles to those with knowledge and virtues that regular people lack, as well as widespread support among the Islamic boarding school community. In terms of the major personality, kiai became a patron of the neighborhood and took on more of a role than merely a teacher (Bruinessen, 2005; Gunawan and Palupi, 2012; Mursidik, et al., 2013; Gunawan, 2013). This was supported by Kusminardjo (1989), who claimed that a leader's personality as a whole is what makes him or her successful (effective). The president, as the personification of the institution, communicates a variety of images to the public to support Shah and Monahan's (2008) assertion that the president symbolizes the institution and all that it means to its various constituencies.

The existence of Islamic boarding schools as academic institutions and the function of kiai are inextricably linked. Kiai is a learned man who chose his path to become the Islamic boarding school's head. A leader's role in an organization is crucial. In the process of planning, implementing, encouraging, and monitoring so that the goals are accomplished collectively in groups, the leader becomes a barometer of the group's success (Nugraha, 2010; Gunawan, 2016a; Gunawan and Sulistyoningrum, 2013). Every leader has a unique leadership style that is customized to the organizational situation. Islamic boarding school's leadership style differs from other educational institutions.

2.3 Comparative Leadership Analysis

The leadership model in organizational education and Max Weber's philosophy of Leadership serve as the study's analytical pivot points. According to Weber, who bases his classification of leadership styles on the theory of dominance, there are three types of leadership: traditional, charismatic, and logical. According to Weber's theory, charismatic leadership has its roots in the chastity, heroism, and extraordinary qualities (character) of its leader, while legal (rational) leadership is based on the belief in legality on the basis of rules and regulations

procedures that apply, traditional leadership is sourced on the authority of certain community traditions, and according to Abdul Gaffar Karim (2009: 103) charisma emerges based on the quality spiritual leader. The two prerequisites are described by Horikoshi (1987: 226-227).

For goal attainment, group commitment, and organizational culture change, leadership is a process (activity) that influences what a leader does to followers (Sadler, 1997:22). Leadership calls on followers to carry out the orders of the leader. There are numerous styles (categories) of leadership (kiai) to persuade the followers (ustadz or students in the islamic boarding school tradition).

3 METHODOLOGY

This kind of research is phenomenological, using a qualitative research methodology to focus on what a person experiences when he or she feels a deep meaning. Choosing informants with the intention of meeting a number of characteristics that can produce information that is trustworthy, true, and accurate is known as purpose sampling (Creswell) (2008: 77).

This study employs a qualitative methodology and a case study research design. In-depth interviews, field observations, and documentation were the methods employed for data gathering in this study. In this study, data were gathered in the field and analyzed at the same time. In data analysis, the researcher condenses the information gathered in the field, arranges it in accordance with the study focus, and then makes inferences on each focus. The validity of the data in this study was examined using member verification, the persistence of observations, and triangulation approaches (sources and methods/techniques).

The study was conducted at Darul Istiqomah Barabai Junior High School in South Kalimantan and Hidayatullah Kuaro Middle School in East Kalimantan. Methods that required for gathering data are doing detailed interviews, field observations, and documentation. While analysis techniques that were used consist of data reduction, data visualization, and data verification. 221 pupils attend Hidayatullah Kuaro Junior High School, which has 32 students. 320 pupils attend Darul Istiqomah Barabai Middle School, which has 37 ustad.

4 RESEARCH RESULTS AND DISCUSSION

The strategy of principals and kiai so that the development they bring leads to improving the quality of education, specifically by (1) improving the facilities and infrastructure management such as classrooms, office buildings, and other facilities, (2) improving the human resources management by provide training system, (3) cultivating a culture boarding school-style schools, (4) supervising, and (5) maintaining communication with the principal to oversee the development of the school. These roles and development techniques give rise to new performances to address the issues and needs of the Islamic boarding school as well as the school itself.

The performances produced by school principals and kiai are (1) organizing dream class programs, (2) obtaining A-accredited school status, (3) E-Report as an online evaluation material, (4) establishing a special cottage for memorizing the Qur'an, (5) get academic and non-academic awards.

The concentration of technology-based media is very influential on the success of the learning process, because technology-based media is an audio-visual media. In addition to being heard, it can also be seen, so the message conveyed in learning is easily digested by students. The ability of Hidayatullah Kuaro Junior High School teachers in the use of technology-based media in learning is still lacking. Meanwhile, to realize educational goals and support the success of the learning process, teachers' ability to use media is needed. Therefore, it is considered necessary for the principal to supervise and provide directions for improving teacher competence. According to Purwanto (1987), "Supervision is a coaching activity planned to assist teachers and school employees in doing work effectively." Academic supervision carried out by researchers to teachers of Hidayatullah Kuaro Junior High School is in accordance with the supervision steps, namely: (1) the initial meeting stage, (2) the implementation stage, (3) the reverse stage (reflection).

Factors that encourage development in SMP Hidayatullah Kuaro are from internal and external schools. Internal factors come from (1) the Leadership of school principals and kiai, (2) support for Islamic boarding schools, (3) infrastructure, and (4) school guards and alumni. At the same time, the external factors of development are (1) the community's need for high formal and religious education, (2) students who excel but have no money, and (3) the success of other educational institutions. Meanwhile, the factors that hinder the development

of SMP Darul Istiqomah Barabai are (1) difficulties to divide the time of students at school and in Islamic boarding school, (2) the the principal and kiai's mindset differences regarding of the policies, (3) inconsistency of running the program.

In Javanese, kiai can refer to three different kinds of titles. Initially, as an honorific designation for objects that are revered, such as "*Kiai Garuda Kencana*," the Golden Train at the Yogyakarta Palace. The community bestows two honorific titles—the second for parents—and the third on a Muslim religious authority who owns or leads an Islamic boarding school. Regarding of the boarding school, the kiai's leadership is based on a combination of (traditional) islamic education and the charisma that is either acquired or inherited (genealogically) or the kiai's charismatic leadership character (Inayah Rohmaniyah and Mark Woodward, 2012: 123) (Sukanto, 1999: 23). Ideology is strongly persuaded by charismatic leadership (Chumaidi Syarif Romas, 2003: 205).

Fadliansyah asserts that KH. Hasan Basuni, the head of the Salafiyah Islamic boarding school, did not have a significant impact on the boarding school management. Everything pertaining to the the boarding school management was given to his four sons, who were assigned their respective responsibilities, such as giving the takhassus Qur'an to Ulul Fadli, the science curriculum and development to Ustadz Fadliansyah, and Ulul Fadli, who served as treasurer and was in charge of the salafiyah hut to the east. KH. Hasan Basuni stronger influence over decision-makers in Islamic residential schools (Interview, 07 Juni 2022).

The concept of Ahlussunah Waljamaah and Nahdliyah thought is to be instilled via education at the Darul Istiqomah Islamic Boarding School. asserts that the inclusion of an-Nahdliyah is crucial because if Ahlussunah Waljamaah (Aswaja) is the only group recognized, many Islamic organizations' parties in Indonesia will refer to themselves as Aswaja, which would be in opposition to NU's interpretation of the term. The Darul Istiqomah Islamic boarding school was established by KH. Hasan Basuni and Nyai Hajjah Siti Shalehah, S.Pd.I through the study of fiqh, monotheism, morality, and memorization of the Qur'an (Interview, 07 Juni 2022).

1. The boarding schools curriculum is inseparable from the government curriculum as applied to the Darul Istiqomah Barabai Islamic Boarding School and the Hidayatullah Kuro Islamic Boarding School.

2. The curriculum for Islamic boarding schools is integrated with the curriculum of the Ministry of Education and Culture, Research and Technology.

From here, there is mutual interaction and benefit between the curriculum of Islamic boarding schools, madrasas, and schools and the absence of an equal education program. Thus the orientation of the Islamic boarding school education curriculum does not only lead to religious sciences educations, especially in the fields of *Tawhid/aqidah*, *Fiqh*, and *Akhlaq/Sufism*. But also Profan sciences. The curriculum made by Islamic boarding schools shows that there are changes from time to time in accordance with the demands of community needs. The changes were made within the framework of improving the boarding school curriculum itself (Interview, 07 Juni 2022).

The boarding school learning process does apply not only the ascending book system but also the classical system in a pattern. This pattern of learning does not only rely on traditional methods such as; taking notes, memorizing, studying sitting (*sorogan*), lectures, and translations, but also on modern methods such as; discussions, questions, answers, demonstrations, assignments, and field trips. The acceleration program was also developed as a means of developing the potential of students with high academic abilities. In the learning process, Islamic boarding schools have taken/applied elements of Madrasah and School Pedagogics carried out by the Government in the curriculum of the Ministry of Education and Culture, Research and Technology.

We can categorize today's boarding schools using the three types of boarding schools that once existed in order to see how they differ from those of the past:

A kiai teaches the pupils using books authored in Arabic by Islamic well-known clerics since the middle ages while they typically live in dorms within the boarding school. Boarding schools are educational and teaching institutions that frequently deliver those teachings in a non-classical style.

A boarding school is a type of educational facility that is essentially similar to the boarding schools mentioned above, but where the students live and are dispersed across the surrounding village. The boarding school's teaching methodology also permits the students to arrive in big groups.in particular time.

Today's boarding schools are a mixture between the system from the boarding school which teach Islamic religion by various ways, and the students are given the facility to live within the boarding school, or near them, in the modern boarding school essence dictates that the students are still within the criteria of a non-formal education learner, and also the boarding school provides the formal education in the form of Islamic school or even regular school in various

levels and specialties depending on necessity (Hasbullah : 1999).

The results of the research findings regarding the role of school principals and kiai as development leaders are managerial, namely regulating Human and Non-Human Resources so that they can work optimally. This is in accordance with the opinion of Suhardiman (2011: 39), which states that the principal's managerial duties are related to the management of all resources in the school. The principal of SMP An-Nur Bululawang Malang is assisted by two deputy principals in managing the school's human resources. This is done because the principal feels incapable of supervising and managing a massive number of human resources. For this reason, he invited the vice principal and his staff to work together in managing the school's human resources. The involvement of school residents in managing school human resources will create a sense of ownership and responsibility to achieve it. The HR is also supervised by kiai in Darul Istiqomah Barabai Islamic boarding school.

The management of the pesantren is delegated in a rational manner. Many kiai assign their children and the pupils administrators for the responsibility of running the boarding school. The kiai's democratic attitude is apparent, especially in the leadership of the kiai of the Aswaja Nusantara Islamic boarding school, despite the fact that the regeneration of leadership is carried out genealogically. The growth of the Salafiyah Islamic boarding school into a mixed Islamic boarding school, which blends the Salafiyah Islamic boarding school educational system with modern education, is another way for the kiai's rational attitude demonstration. In contrast to residing in Islamic boarding school, several Islamic boarding schools operate official schools and urge their pupils to enroll in them as well. A large frame, strong voice, keen eyes, ancestral ties to charismatic kiai in the past, and the engineering process can all be used to produce charismatic leaders (Abdur Rozaki, 2004: 87-88).

The leadership styles that distinguish one Kiai from another are diverse. This is seen in the Barabai salaf Islamic residential schools. For instance, the first female Islamic boarding school to concentrate on tahfidz al-Qur'an was the Darul Istiqomah Islamic Boarding School, which was established in 1953 by KH. Hasan Basuni and Nyai Hajjah Siti Shalehah. After the Salafiyah Islamic Boarding School and Ibnul Amin, Darul Istiqomah is the third Islamic boarding school to be constructed in Barabai. KH. Mahrus Amin, the son of the boarding school's current caretaker.

One method that principals and kiai have developed to raise educational standards is the selection of kids for the "dream class." According to

Imron (2012: 43), there are three different ways to choose new students for admissions: based on the Pure Ebta Value List (DANEM), Interest and Ability Search (PMDK), and the entrance exam results. In the ideal method for choosing classes, the school first establishes the standards or prerequisites that students must satisfy in order to be admitted to the desired class. In order to choose prospective students for the optimum class, the school's principal collaborates with the State University of Malang and Darussalam Gontor.

Positive improvements in a school will only take place, in the words of Kurnia & Qomaruzzaman (2012: 24), "if all school subjects grasp the nature of their own school culture, whether apparent and invisible, formal or informal." If the school community is aware of the school's culture, it will be possible to track developments inside the institution. The school's one-day-one-hadith, istigosah, and tausiyah cultures are created by the principal. In addition to serving as the school's identity under the auspices of the Islamic boarding school, the principal built this culture with the intention of instilling moral and religious behavior in the student body. By tightening up student discipline at SMP Hidayatullah Kuaro, principals and kiai also enhanced student management (Imron, 2012: 174).

That may be used include cooperative control, inner control, and external control. One of the regulations in Darul Istiqomah Barabai middle school is that pupils who miss three days of class will receive a warning and may be expelled. These rules demonstrate how Hidayatullah middle school uses methods of external control to discipline its students. A variety of disciplinary guidelines are established by the principal and the kiai must be followed. Students who break the rules must take the punishment that results from their actions. According to the points of violation, penalties are applied. The principal carries out this action as one of his or her initiatives to raise educational standards through encouraging growth.

By hiring new instructors who place emphasis on alumni that familiar with Nahdlatul 'Ulama, principals and kiai can also enhance the management of human resources at Hidayatullah Kuaro middle school. According to Mulyasa (2012: 64), "recruitment activities are carried out, namely an effort to find and get as many prospective teachers and staff who meet the requirements as possible to then choose the best and most capable candidates" in order to obtain teachers and staff in accordance with needs. The principal of Hidayatullah Kuaro middle school hired new instructors in order to accommodate more students. Finally, the principal made a choice to hire new teachers, but they had to be university graduates. Renowned in Malang and knowledgeable on Nahdlatul Ulama Mulyasa (2012: 67).

The Darul Istiqomah Islamic boarding school keeps an eye on its former students. This observation is done to keep the beliefs or ideologies of the Darul Istiqomah Islamic boarding school alumni in the Aswaja an-Nahdliyah rail. The establishment of an alumni organization serves as a monitoring tool. There have been no pupils who have left the NU amaliyah under this supervision up to this point. Muhammadiyah was visited by individuals, but they soon left again. Alumni who continue their education at UAD, UMY and Darussalam Gontor are still taught these techniques in Islamic boarding schools (Appointment, October 3, 2015). Leadership is an action (process) in which a leader influences his followers to establish group commitment, change organizational culture, and achieve goals (Sadler, 1997:22). leadership calls for the followers' submission to the leader's commands. There are various styles (kiai) of leadership that can be used to sway followers (ustadz or students in the Islamic boarding school tradition).

According to Weber's leadership theory, the kiai at Darul Istiqomah Barabai Islamic boarding school in Hidayatullah Kuaro exhibit three leadership styles (traditional, charismatic, and rational). The three leadership philosophies have an impact on the various religious beliefs of students. Different sources of dominance are the cause of this variation. Weber's idea of leadership is built on the idea of domination, according to Kurdi (2007:134). The following table provides a more thorough description.

The shift of kiai leadership, which is carried out genealogically by their descendants and relatives, is the result of traditional leadership in Islamic boarding school. The Salafiyah Mlangi Islamic boarding schools experienced the same thing. Although there is some independence of thought in some boarding schools, the influence of traditional leadership on pupils made them to think as seen in pupil's adherence (fanaticism) to the kiai's religious beliefs. The Salafiyah Islamic boarding school alumni adopt the same religious philosophy as their kiai due to their fanatical mentality. This differs from Islamic education offered in contemporary pesantren like Gontor.

Students' ideologies are instilled through the processes of study and instruction, as well as through Aswaja's actions, An-Nahdliyah, and the example of the kiai. A high concentration of knowledgeable caregivers combined with modern insight is a powerful tool for influencing pupils' scientific paradigms.

The kiai, who serves as the boarding school leader, appoints a caretaker or instructor, taking into account the competence and abilities of the students. What ideology places a greater emphasis on the kiai's pupils and carers set a positive example for moral

behavior. Kiai has a significant impact on the boarding school's leadership. Even when the caregivers/ustaz impart knowledge that is more liberated, the majority of pupils continue to adhere to the science that the kiai has taught them. Despite the fact that the knowledge being taught is still based on conventional books (classical books), santri ethics can be produced together with high reading skills. The more knowledge gained, the easier it is to refine conventional thinking to make it more contemporary and logical. This topic has emerged as a defense against the assault of beliefs that might skew behavior and thought.

The kiai have a significant impact on the Islamic boarding school's leadership. The majority of students continue to adhere to the knowledge that has been taught by the kiai, even though the caregivers and ustaz teach freer knowledge. Even though the knowledge is still taught through classical texts, it can result in students who have good ethics and proficient readers. With more knowledge acquired, conventional thinking can be improved to become more contemporary and logical. This serves as a defense against ideological assaults that could harm actions and beliefs.

Leadership that exudes charisma is based on a leader's ability to emotionally sway followers, and this charisma typically results from that leader's core ideals. The boarding school's heritage gives rise to charismatic leadership.

In the development of Islamic boarding school-based schools, the two roles of principals and Kiai are: (1) as managers of HR regulators in schools and Islamic boarding schools; (2) as supervisors; (3) as decision makers; (4) as responsible individuals; (5) as models (Uswatun Hasanah); (6) as a motivator; and (7) as a work partner. The three methods used by administrators and kiai to build Islamic boarding schools are: (1) better facility and infrastructure management; (2) better human resource management; (3) conducting supervision activities; and (4) hiring new instructors and training educators. (5) Require teachers to develop instructional scenarios; (6) Coordinate and communicate with all students and residents of the pesantren. The four presentations were made by heads of schools and kiais in creating Islamic boarding schools.

Planning programming for dream classes, and (2) creating electronic reports. (1) Leadership of the principal and kiai is one of the five criteria supporting the development of Islamic boarding schools. Support for Islamic boarding schools, school infrastructure, and attendance at outside schools (1) The need for education in the community; (2) student achievement but financial limitations; and (3) competition with other institutions. (1) Dividing the time spent by pupils in schools and Islamic residential schools is

one of the six struggles preventing change. (2) Disparate policy-making philosophies between school principals and kiai, (3) inconsistent program administration based on findings from research.

Kiai's job as a supervisor is to supervise the activities of teachers, especially in the field of learning which includes: a. Determine learning objectives, determine strategies, choose methods, choose the right learning materials, determine learning media and resources, and determine evaluation tools. b. Implementation of activities learning/guidance which includes the use of appropriate learning resources, the use of appropriate and effective learning methods, strategies, techniques, models, and approaches, the creation of a pleasant learning environment; development and utilization of learning and/or guidance tools and media; c. Assessment of learning processes and outcomes / guidance which includes: guiding teachers in carrying out evaluation of learning processes and outcomes, guiding teachers in carrying out feedback from the results of learning evaluations, guiding teachers in diagnosing student learning difficulties, and guiding teachers in carrying out remedial learning. d. Providing feedback from the results of the assessment for the improvement of learning / guidance services, which includes: the results of supervision are submitted to the teacher to be discussed together, the results of supervision e. used as a tool for professional development / teaching skills of teachers, the results of supervision are used as the basis for compiling the supervision program.

The new education paradigm management mentions at least principals, which in this article is that kiai has seven roles that take part as educators, managers, administrators, supervisors, leaders, innovators, and motivators commonly abbreviated as EMASLIM. One of the roles as a driver of the process of school activities properly is the supervisor. Because it is directly related to the process of implementing work carried out by school resources (Prasetya, 2021). Supervisors function as professional guidance to educators, monitor teachers so that the teaching and learning process is achieved properly, and monitor and handle as a preventive measure and improve the performance of educators. Academic supervision is given to teachers as coaching (Azharuddin, 2020). Often teachers feel that they still need a helping hand from others because the teacher does not know the types, understand the procedures, and mechanisms of available resources (Ginting, 2020). To improve the quality of students, qualified teachers are needed. Qualified teachers are able to display maximum performance or performance, this needs to be considered by the principal who has a supervisory role. Principal / kiai as supervisor means

the obligation of superiors in guiding and fostering education and staffs for the teaching needs carried out in schools in order to realize a quality learning process. The benefits of supervision for teachers to improve technical and professional abilities in managing learning (Ginting, 2020), especially increasing pedagogical competence, integrating technology into learning and managing interesting learning content.

Teachers are given freedom by superiors including motivation, direction, and various activities related to competency development and performance, schools can facilitate teachers in various activities based on consultant input or ideas and suggestions from teachers according to the needs of the school and students. The activities in question include Technical Guidance (Bimtek) and Training, collective organizational activities such as participating in the Teacher Working Group (KKG), as well as scientific forums (Anwar & Alfina, 2019). Bimtek activities can help teachers expand the learning capacity and insight of teachers related to mastering learning methods, learning theory, and understanding learning situations in the classroom and outside the classroom with the principles of educational learning (Silfa, 2020). Then involve in training seminars outside the school for example held by the local Education Office such as in-service activities such as the latest curriculum training, guidance on making learning tools, training in subject content, computer training or learning technology, workshops, and so on (Rahmadi & Arafat, 2021). Research studies show that short online training has the potential to affect teachers' interpretation of teaching and learning situations, especially for teachers who are not experienced in teaching. So that pedagogical training is given in the early stages of teachers starting a teaching career (Vilppu, et al., 2019). However, teachers must have a growth mindset to continue learning in responding to dynamic and massive changes while providing educational services for students. Such as the creative teachers who are the ones that have information technology literacy both in running e-learning or cyber pedagogy and conducting interactive learning from home (Kodrat, 2020). So teacher's skill training and development is important to answer educational challenges by utilizing technology. The importance of principals facilitating teachers to participate in training and development to support teacher skills when teaching online. Because the difference in the quality of teachers makes a shortage in the skills needed to design online learning, apply learning technology, and so on due to the lack of professional development training (Palau, et al., 2021). So that the

principal as a facilitator can provide easy teacher needs in accordance with educational developments.

5 CONCLUSION

In this study, there are significant findings, namely the supervision of principals and kiai in Islamic boarding schools in two provinces using Islamic boarding school education management leading to modern management where the division of labor has been carried out in a clear organizational structure.

Kiai's leadership is Collaborative, Collective, Democratic, and Humanistic and does not focus on one individual. The participation of the Islamic boarding school community is very high, which is indicated by the dedication of the foundation, administrators, and teachers in the management of Islamic boarding school education. At the same time, education management is imbued with the spirit of autonomy and participatory decision-making because boarding school is not the private property of the Kiai.

The role of the principal as a supervisor means that the principal carries out supervision or supervision of teachers by monitoring so that learning activities run in an orderly manner, as well as guiding and fostering teachers for the educational and teaching needs carried out in schools in order to realize a quality learning process. Simply put, the activity of monitoring teacher performance through monitoring teacher performance measurement, coaching related to pedagogical competence, improving performance as an effort to improve the results of teacher supervision in carrying out online learning. Supervision activities are useful for improving the technical and professional abilities of teachers in learning management, especially increasing their pedagogical competence, namely integrating technology into learning and managing interesting learning content. So that the role of the principal as a supervisor is important to be carried out regularly at the beginning of the semester and the end of the semester and improved in order to be able to photograph all the weaknesses and obstacles of teachers during the online learning process so that it can be helped by the principal's actions in an effort to improve and professional development of teachers. The role of the principal as a facilitator means that the principal provides convenience or facilities for teachers to develop following various activities for the needs of education and students. One of them is that teachers attend various trainings such as seminars, workshops, workshops, Technical Guidance and Training, collective organizational

activities, and scientific forums. For example, training conducted by the local Education Office is for example about curriculum training, guidance on making learning tools, training in subject content, computer training or learning technology, workshops, and so on. The problem of lack of training provided by the principal can be improved by the principal as a facilitator to support the skills of teachers in technology-based learning.

The curriculum model developed shows an open perspective of the boarding school's education system. Boarding schools implement not only their own curriculum but also apply the curriculum offered by the Government, either through formal institutions such as Madrasas or Schools. The boarding school curriculum is integrated with the curriculum of the Ministry of Education and Culture, Research and Technology.

The results of the study are a contribution to a new concept in the comparative leadership of Islamic boarding schools that adhere to the curriculum of the Ministry of Education and Culture, Research and Technology. This study has a limited sample, only a few cases. In line with that, further research is needed that accommodates larger samples and cases and shows new directions in research.

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The Correlation of Ethnicities and Students' Speaking Anxiety in Online English Learning

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Abstract: Indonesia is a multicultural and multilingual nation that consists of 300 ethnicities and 715 ethnic languages. The modernity of a nation is judged by the mastery of English. Therefore, besides mastering their ethnic and national language, young generations of Indonesia are required to learn English as a foreign language. The purposes of this study are (1) to measure the level of students' anxiety from Konjo and Java ethnicities, and (2) to explore the influence of students' ethnicities on their English-speaking anxiety. This study applied a descriptive quantitative method. The participants of this research consisted of 25 students of Konjo ethnicity in Bulukumba of South Sulawesi province and 25 students of Java ethnicity in Magetan of East Java. The data are collected using the Foreign Language Classroom Anxiety Scale (FLCAS) questionnaire to measure students' anxiety levels. Based on the statistical analysis, it is found that students from Konjo and Java feel the same mostly at a medium level of anxiety in speaking English. Moreover, the results of spearman's rho test with a final significant score are 0.471 which is higher than the significant value of 0.01. It can be concluded that there is no correlation between ethnicity and the level of students' anxiety in Speaking English learning.


1 INTRODUCTION


Some people believe that the ability to communicate, in addition to being influenced by the knowledge and knowledge gained in school, is also influenced by the tribe from which they come. The rules that come from this tribe become clear benchmarks for their members in carrying out clear living procedures. One is how they talk to others. In some tribes, it is believed that speaking to others should not be direct but is done with lip service first. Alternatively, some are more


inclined to speak unceremoniously. In addition, asking for details about newly encountered people is normal and legal. However, for some tribes, this is taboo.


The Konjo tribe is a tribe in South Sulawesi, especially in the district. Bulukumba is divided into two, namely the Konjo Mountain tribe and the Coastal Konjo tribe. Each of the two tribes; The mountainous and coastal Konjo have somewhat different customs and cultures. These two tribes are unique, both in terms of traditions and customs and way of life, their marriage system, and much more.


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Konjo refers to a dialect of the Makassar language spoken in the border villages of the Makassar-speaking region and the Bugis "Konjo" means "here" in other Makassar dialects that use the word "anjo" for the same meaning.

Most of the Konjo people live on the side of the mountains that are not very suitable for rice farming, although some of the rice terraces are impressively made by the Konjo people of the mountains around Malino, the mountainous area of Gowa Regency. Makassar – Konjo is about 75 percent basic vocabulary with standard Makassarese. The Konjo dialect itself is divided into two subgroups: "Konjo mountain", with a number of speakers of about 100,000 in use in and around Mount Bawakaraeng, and "coastal Konjo" also with speakers of about 100,000 people, used on the coast of Bone Bay. Coastal and mountainous Konjo correspond to a lexicostatistical similarity level of 75 percent, so they are not closer to each other than to the standard Makassar. However, at the level of morphemic, morphological, and syntactic, the two are almost the same. According to Gibson, 2009 as cited by Ardyansyah (2009), Konjo Mountains has reached the subject of a number of published studies, respectively by Rossler (1987, 1990, 2000) and Rottger – Rossler (1989, 2000) both are cited by Syarifuddin (2014).

Herusatoto (1987) defines Javanese society as one of the societies that lived and grew from ancient times to the present and hereditary using Javanese in various dialects and inhabited most of Java Island. Suyanto (1990) in his book entitled *Javanese Outlook on Life* explained that the characteristics of Javanese culture are religious, non-doctrinaire, tolerant, accommodating, and optimistic. This characteristic of Javanese culture gave birth to a characteristic tendency for Javanese people such as: believing in God Almighty as Sangkan Paraning Dumadi with all His qualities and greatness, idealistic in style (believing in something immaterial-not material and things that are supernatural and tending towards the mystic, prioritizing essence over formal and ritual aspects, prioritizing love as the main foundation of human relations, believing in destiny and tending to be marketable, convergent and universal, scourge and non-sectarian, inclined to symbolism, inclined to mutual aid, harmonious, peaceful, and less competitive because it lacks material prioritization.

The use of English in the world community as an international means of communication has grown very rapidly. This has had a great influence on the teaching of English in schools. In Indonesia itself, English language teaching has become a trend and obligation of learning for students. English teachers

began applying various teaching techniques to provide students with a variety of basic language skills, including listening, speaking, reading, and writing skills.

The use of the latest teaching techniques in language learning as well as the widespread use of English that has increased has led to the emergence of the need to learn good communication skills (Tanveer, 2007). This ability to communicate has a very close relationship with the ability to speak (speaking). However, learning the ability to speak is not as easy as it seems. The ability to speak a foreign language (speaking) is a complex ability. To become an expert in it, learners need to meet several conditions. These requirements are in the form of language knowledge along with basic science, and speaking skills in various situations and conditions, where students must have confidence, self-respect, and self-enthusiasm. Therefore, it can be said that to master the ability to speak (speaking), learners are not only influenced by cognitive factors but also affective factors (Andres, 2003)

This is also supported by Krashen in Mason (www.timothyjpmason.com) who mentioned that affective factors can help or slow down the process of mastering students' speaking skills in the process of learning English as a foreign language. Learners with low levels of negative affective tend to acquire more knowledge of the language compared to those with high levels of negative affective. Therefore, affective factors have a great influence on the success of learners in learning.

Furthermore, Brown (2000) states that there are three types of affective factors that affect learners in the learning process, namely motivation to excel, self-confidence, and self-anxiety. Brown also added that language proficiency can be achieved if there is a learning environment that makes students have low levels of self-anxiety and low levels of self-resistance.

From various studies that have been carried out, the self-anxiety factor is considered one of the most influential affective factors for learners in English-speaking activities in the classroom.

This self-anxiety can cause various difficulties for learners to give an appropriate response in speaking activities (Brown, 2000). This can certainly hinder the mastery of the ability to speak fluently, fluently, and gratefully in various life contexts.

Furthermore, Cahyani and Anuyahong (2017) mentioned that the level of student anxiety is at the intermediate level. The anxiety experienced by students is caused by a lack of self-confidence caused by their fear of being laughed at by their classmates.

In addition, Cahyani also said that when they spoke in the classroom they felt shaky and their focus was split.

Another study conducted by Rajitha and Alamedu (2020) found that external factors such as linguistic elements, grammar, pronunciation, and peers are some of the triggers of English-speaking anxiety in the classroom. Likewise, internal factors such as fear, lack of self-confidence, and shyness are also factors that are no less important in encouraging students' English-speaking anxiety.

As stated by Peng (2014) and cited by Liu (2018), the anxiety that comes with learning a second or foreign language is said to be triggered by the dread of speaking. Also stated by Liu (2006) some non-native English speakers even experience mental blocks. Anxiety over learning a foreign language has long been studied. Researchers and academics discovered that worry has a crippling impact on the process of learning a second language, which can negatively impact performance over time and even prevent the growth of language proficiency.

This online learning strategy is a learning strategy that uses technology. Furthermore, learning in the era of the industrial revolution 4.0 is identified with learning using technology. This also affects the use of learning strategies used by educators (Muis, 2019).

The educational system needs to collaborate with technology in education and increase the teacher's awareness of the application in teaching (Al-Takhynah 2018). Technology in education is not a stranger. Technology has grown so widely across the world. Many technologies have been developed to assist the students in education as reference materials and tools such as courseware, e-learning, web-based learning, mobile application, blended learning, and so on. So, this technology has also taken numerous innovations to add value to education and evaluate digital reference materials (Samsudin et al. 2017).

Online learning strategies for teaching and learning activities that are not bound by the time, place and rhythm of lecturer attendance, and can use electronic media and communication facilities. There are three types of online learning, namely first indirect learning (asynchronous), in this learning strategy students read complete material or materials and do quizzes or tests. The second type is synchronous learning, which is a class that meets online on a predetermined website and the time is adjusted by mutual agreement with all students and lecturers. They will all log in to the site along with all students and faculty. Third, blended learning, namely the combination of asynchronous and synchronous, (Prawiradilaga, 2016).

New online teaching strategies produce many obstacles for the teachers. It is not easy to apply because the teachers are still learning about e-learning. They encountered some obstacles when they implemented it. Moreover, teachers have their perception to implement online learning. Teacher perception becomes an important thing. Satrianingrum and Prasetyo (2020) stated that teacher's perception of the impact on student's is the lack of availability of facilities and infrastructure, difference environments when studying in the classroom and studying at home, which affect the enthusiasm of students. Teachers and students feel a burden on internet quotas, especially if they are in an area that is disturbed by signals, monitoring of child development is limited, teachers feel as free as in class.

Obstacles in online learning were identified after conducting interviews and observations, such as: using e-learning tools, teacher knowledge, time management, and student motivation. The first obstacle was using e-learning tools. Operated gadgets at the start of the pandemic was bothersome. This could be seen from the confusion of teachers and students in using E-learning tools while teachers were challenged to make learning interesting. How to get children to submit assignments. Because they could not manage online learning class. There were even students who did not had cell phones. Akhdar (2006) explained that there were two obstacles, physical or non-physical, that hinder the use of computers in teaching. Online learning should be applied to teachers, because some people are still confused about how to apply it, so there are problems to implement it in teaching. One of the problems with the device was the internet connection. The ability to operate tools was necessary for students. Wong and Looi (2011) investigated the effect of mobile devices on student's learning in operating these devices.

Based on these previous research studies, this study seeks to examine whether ethnic backgrounds and online learning will also affect students' English-speaking anxiety in the classroom. Looking for solutions to other problems that affect and also solutions.

2 METHODOLOGY

This study applied a cross-sectional with a descriptive quantitative-qualitative approach. the participants were selected from Konjo and Java ethnicities. 20 students from the Konjo ethnic were selected from the Midwifery Academy of Tahirah Al Baeti Bulukumba. And 20 students from Java ethnic were selected from

STAI Ma'arif Magetan East Java in the third semester. The data in this study is collected by using A questionnaire of FLCAS developed by Horwits (1986). It was shared through the whats Up group of the English-speaking class using Google Forms. There are 29 questions to measure the students' anxiety in learning English speaking. the data then were analyzed statistically using SPSS 22. in order to answer the hypothesis, Spearman's rho test was applied.

H0=There is a correlation between Students' ethnicity and student's anxiety in Speaking English

H1= There is no correlation between Students' ethnicity and student's anxiety in Speaking English

In order to collect the qualitative data, some students are choosen to be the informan (5 Konjo, 5 Jawa). All the informants are interviewed by using semi-structured interview. The data are then analysed using thematic analysis.

3 RESEARCH RESULTS AND DISCUSSION

3.1 Level of Students' Anxiety in Speaking English

The data were obtained from a questionnaire about speaking anxiety and analyzed using descriptive statistics to determine the level of students' speaking anxiety in English in public. After analyzing the classification of students' speaking anxiety questionnaire, the data was processed using SPSS. 20 for windows to determine the level of students' speaking anxiety in a public speaking activity.

Table 1: Level of Student's Anxiety in Speaking English.

Level of Anxiety	Java	%	Konjo	%
High (80 - 100)	3	15	2	10
Medium (60 - 79)	11	55	15	75
Low (< 60)	6	30	3	15
Total	20	100	20	100

The results of the analysis are presented in a table which shows the level of anxiety of the Konjo and Javanese students in speaking English. The highest number is at moderate anxiety level (Konjo=75%, Jawa=55%), followed by low anxiety level (Konjo=15%, Jawa=30%) and lastly high anxiety level (Konjo=10% , Jawa 15%).

The finding is that students usually motivate themselves with the words 'let's do it' when they are afraid of being laughed at. This is supported by Al-Hassani (2022) that EFL learners need sufficient time to practice English skills in class and must be motivated to speak English with anyone inside and outside the classroom. Likewise with students who always practice their speaking skills in foreign languages, this can be useful for them when they feel afraid of being laughed at (Al-Sobhi and Preece, 2018). In this case, Al Ahdal (2014) states that the ability to speak in real life is very helpful in communicating, both when using the native language and the target language. But when they learn English, they find that the two languages are very different. So, they make a conscious effort to learn it.

3.2 The Correlation Analysis

Table 2: Correlation Analysis (Spearman's Rho Test).

Correlations		Ethnicity	total	
Spearman Rho-test	Ethnicity	Correlation Coefficient	1.000	
		Sig.(2-tailed)	-	
		N	40	
	total	Correlation Coefficient	117	1.00
		Sig.(2-tailed)	-	471
		N	40	40

The table indicates the result that there is no correlation between students' ethnicity and students' anxiety in speaking English. it is found the p-value was 0,471 which is higher than the significant p value 0,01. Therefore, H0 was accepted and H1 was rejected.

The findings from the table for the participants in this study consisted of 25 Konjo ethnic students in Bulukumba, South Sulawesi Province and 25 Javanese ethnic students in Magetan, East Java. Using the Foreign Language Classroom Anxiety Scale (FLCAS) questionnaire and qualitative descriptive method to measure students' anxiety levels, the findings above clearly show that there is no correlation between student ethnicity and students' anxiety in speaking English as a foreign language. The ability of students of Konjo, Javanese, and any other ethnicity to speak foreign languages themselves is measured from the first impression when they learn it (Fatmawaty & Haryani, 2017) and the feeling of comfort and confidence in expressing it. Usually students who feel comfortable communicating in a foreign language will more quickly adapt to the sense

of language from the foreign language and master it more quickly. Meanwhile, ethnic origin did not show any effect on students' anxiety in learning English.

Based on the statistical analysis it was also found that most of the students from Konjo and Jawa shared a moderate level of anxiety in speaking English. In addition, the results of the Spearman Rho test with a final significant score of 0.471 were higher than a significant value of 0.01, so it can be concluded that there is no relationship between ethnicity and students' anxiety levels in learning speaking English.

Based on the results of statistical analysis, Students from Konjo ethnic has higher value of anxiety level comparing to Java students. It can't be denied that Konjo is a minority community in South Sulawesi province, so their knowledge and interest of English as a foreign language is low. different with Java ethnic, as a majority community their knowledge and interest of English learning is high. it effect to the students' anxiety in learning English. it is found that there is no correlation between the ethnicity of the students and their speaking anxiety. Mayasari (2013) also found that there is no correlation between student's anxiety with student's speaking performance results. It is in line with Kempler et.al (1998) that there is no effects of age, education, and ethnicity on verbal fluency. On the contrary with Suardi, et. al (2018) which found that the significance related anxiety and gender differences which male anxiety is affected by their thought while female anxiety is affected by their feeling in a seminar presentation. Last, it is not in line with Horwitz et al (1986) who found that communication apprehension, test anxiety, and fear of negative evaluation effected student's achievement.

It is important for every student to have motivation in public speaking. However, not a few have negative problems with each other, such as shyness and lack of confidence. Even though speaking in English must often be practiced or trained (Irawan, 2016). According to Nadila et al., (2020), sometimes students are quite mature in their knowledge of English, however, they are not yet skilled in speaking English. So that this is one of the causes of a feeling of lack of confidence.

Activities that can be done to develop English language skills can be started with simple things. For example, listening to English music, watching TV or movies and listening to English radio, following shows with English as the introduction, speaking English all the time, reading books and newspapers in English, and setting the language on the device in English. Meanwhile, to improve English speaking

skills, activities are more focused on practicing speaking (Pratiwi, 2014).

In theory, students have gotten and understood a lot, but to apply and practice sometimes is still very difficult in terms of speaking. To improve speaking skills, students can make simple sentences with their vocabulary, then practice in front of a mirror (Mangaleswaran & Aziz, 2019). This activity can increase self-confidence and psychologically increase positive thinking.

According to Nur et al., (2021), not a few students feel afraid when speaking English directly, the reason is because of their thoughts. Haven't practiced it yet, but already thought it would fail, be laughed at, and even be criticized by the audience. the most appropriate solution is to expel negative thoughts and give suggestions to yourself that you will succeed in this speaking exercise.

Another activity to improve English speaking skills is to find friends to practice more. Students can practice continuously. Students can practice alone or with friends. Practicing alone is fine, but it's even better to have a practice partner who can correct each other when mistakes occur. Choose friends who have the same goals as so that the practice goals of increasing self-confidence can be realized.

According to Koran (2015), the good thing about learning to speak is don't be afraid to make mistakes. Mistakes are the best teacher. Without ever making a mistake, you will never know how to be right. With mistakes, you can learn from them so you don't do the same thing again. Never be afraid to be wrong when you speak, and don't get angry or angry if someone criticizes you. Because criticism can evaluate to improve oneself so that one can be even better in the future. the more students practice and practice, the greater the opportunity to minimize existing mistakes.

In addition to the technical factors above, there are several things that affect students' ability to practice speaking in English, especially during actions on zoom screens, and creativity in online learning, especially in assignments via social media, such as Facebook, Instagram, Tiktok. and others. Based on interviews with students from these two tertiary institutions, it was found that different cultures and the influence of habits, and interests in using technology influence the courage to speak English on zoom screens or video actions on social media.

Social media is an alternative that educators can use besides the e-learning model which has been widely used as a form of remote learning (Asrawijaya, 2020). Social media is an alternative that educators can use besides the e-learning model

which has been widely used as a form of remote learning (Mulyono & Suryoputro, 2020). Students as users of social media can practice learning to improve their skills in English, both in communication and interaction (Shahzadi, 2021).

Online english learning users have a positive impact on a person's skills if they are able to use social media to understand the characteristics of someone in their environment. Through social media, language activities and student communication can also be monitored by educators. In this way, the use of social media can be used as a medium to understand students' language skills (Asrawijaya, 2020). With good guidance and direction according to the skills they have, students will be assisted in identifying and improving the skills they have, students will be assisted in identifying and improving their skills in the language through social media (Syafiq et al., 2021).

The Javanese are known to have shy personalities, but that shyness disappears when they appear on social media (Budi, 2021). For teenagers in Java in particular, the use of social media and other virtual facilities has become part of everyday life. Students have no difficulty operating or having fun/playing around for entertainment using social media. This is different from the condition of students from Konjo whose level of familiarity within using social media is not as active as students from Java. The orientation of students from Konjo in using social media is pure entertainment.

In interviews, several children from Javanese ethnicity admitted that when using social media it was not only for entertainment, but they had an interest in knowing foreign languages, especially English. The great desire to know is caused by the influence of the environment, family, and awareness of the importance of English for the future. They believe that the ability to speak English can help to improve self-quality in the future, especially in terms of needs in the industrial world.

Awareness in the era of globalization, where changes continue to occur day by day both in the field of knowledge and in the field of technology, seems to be more recognized by students from the Javanese ethnicity. Progress - continuous progress needs to be accompanied by awareness to improve quality and quality, one of which is by improving English skills and utilizing the internet to help improve their abilities.

Most students from Konjo use English only when they are studying English in class, without practicing it directly in daily communication. So the courage to speak English is very low. They are more likely to be afraid of being laughed at if they mispronounce or use

words. This is a factor causing the level of Speaking Anxiety in Online English Learning to be higher than students from Java.

Students who are better at having the courage to perform in online English learning are mostly students from Java. Besides having motivation, fun, and interest, other supporting factors, such as the family environment, really support their development. Meanwhile, students from Konjo, apart from their lack of interest in using social media in speaking classes and lack of support from the surrounding environment, cause students to be less courageous in practicing English conversations in class, especially in online learning.

Based on the narrative of the student from Konjo, he explained that when they spoke English with their friends, sometimes people would think that they were arrogant students who deliberately communicated in English just to show their intelligence. This is one of the barriers for students to improve their speaking skills.

The problem of Speaking Anxiety in Online English Learning in general almost happens to students at these two tertiary institutions. In general, they still have a fear of always practicing using English. Shame overcame their courage in stringing words using English. In addition, embarrassment arose due to responses from the surrounding environment that did not support their desire to always communicate in English. However, these factors are more likely to be faced by students from Konjo.

4 CONCLUSION

Based on the findings, it can be concluded that fewer of students from Konjo ethnic have high level of anxiety than Java ethnic. on the contrary, More students from Konjo ethnic have low level of anxiety comparing with Java ethnic. It indicates that students from Java ethnic is more brave to speak when learning English than Konjo ethnic. However, the results show that ethnicity of the student is not significantly correlates to their english speaking's anxiety. Therefore, H0 was accepted and H1 was rejected

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Practicality of Inquiry-Based Citizenship Education Learning Model in Increasing Social Concern Students in Higher Education

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Keywords: Citizenship Learning Model, Inquiry, Social Concern, Higher Education.

Abstract: This study aims to look at the practicality of the Inquiry-Based Citizenship Education Learning Model in improving students' social care attitudes in tertiary institutions. The process of developing this model refers to the ADDIE development model. Based on the discussion of the research results, it can be concluded that the practicality of the Inquiry-Based Citizenship Education Learning Model and its supporting products has been achieved with an average learning implementation in the sample class of 3.58 with the criteria of all aspects in the learning model implemented. It means that all aspects observed are in the All Implemented criteria.

1 INTRODUCTION

Education in tertiary institutions is a conscious and planned effort to create a vibrant learning atmosphere for students and develop their potential for spiritual, and spiritual strength, self-control, personality, intelligence, noble character, and the skills needed by themselves, society, nation, and state. It can be interpreted that education contains an intentional act to make a complete human being (Ansari, 2015).


The purpose of education is not solely to transfer knowledge to students but also to shape character (Bull & Allen, 2018). Character-building activities aim to form students with moral values that do not conflict with applicable norms (Andriany, 2017). Next, Handoyo & Tijan (2010) stated that learning on campus also shapes student character in various social actions so that students have knowledge, attitudes, skills, and noble moral values.


So that character education learning can be effective and efficient according to B, a lecturer must choose a learning model that will be applied so that character education learning can be effective and efficient. The learning model referred to includes the Discovery Learning learning model, where the emphasis on this model is that students are more


active in finding learning outcomes while the lecturer plays an active role in facilitating students to learn; the Inquiry Learning model, where the emphasis on this model is that students learn to respond to learning while the lecturer plays an active role in facilitating students to learn; the Problem-Based Learning model where the emphasis on this model students play an active role in solving problems while the lecturer plays an active role in facilitating students in solving problems; and many other learning models.

While courses that emphasize character building are Citizenship Education courses (Heckman & Kautz, 2013), Citizenship Education (often abbreviated as Civics) is a field of study that discusses civic values. Citizenship Education in several countries is one of the courses that can shape the personality and character of students. Specifically, six countries are in question: Australia, Hong Kong, Japan, Taiwan, Thailand, and the United States of America (Morris et al., 2013). Citizenship Education has a strategic role in increasing national insight and the spirit of nationalism (Soekarno & Mujiwati Sri, 2015).

Citizenship Education processes students to become scientists and professionals who have a sense of nationality and love for the motherland, are

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civilized and democratic, have competitiveness, are disciplined, and actively participate in building a peaceful life based on the Pancasila value system (Ministry of Education and Culture, 2020). Citizenship Education is a compulsory subject at all levels of education in schools and tertiary institutions in Indonesia because education policy in Indonesia places Citizenship Education as one of the subjects focusing on the formation of citizens who understand and can carry out their duties as well as the rights and obligations to become citizens. Intelligent, skilled, and polite Indonesian nation according to the mandate of the 1945 Constitution (Republic of Indonesia, 1945). At the same time, the purpose of Citizenship Education in tertiary institutions is to assist students in developing their potential to master the knowledge, attitudes, and skills of citizenship and the values needed in the framework of applying knowledge, potential, and expertise and participating in the life of society, nation, and the world (Morris et al., 2013).

Based on the results of the researchers' observations in the preliminary research on Bung Hatta University students in Padang City, it appears: (1) There are still students who do not want to help their friends when they are in trouble, and this statement is supported by the results of the study Oktariani et al. (2020) which states that the attitude of social care of students is very influential on the development of the character of the students themselves. Social awareness that needs to be developed is an attitude of respecting the opinions of others and an attitude of caring about what other people feel. Then there is also research by Wahyuni & Reswita (2017), which states that the emotional maturity of students will be stable if their existence is respected and accepted by other students, meaning that the attitudes and behavior of students in the campus environment must show mutual respect for one another. (2) Lack of concern for disaster-stricken areas (Soekarno & Mujiwati Sri, 2015). (3) Lack of respect for the opinion of his friends, and this statement is supported by research results by Chang et al. (2019) which state that students of different races tend to be less valued for their opinions, and this statement is also supported by research results Mwangi et al. (2018).

Likewise, the situation of students at Bung Hatta University is motivated by various things, one of which is the lack of students' understanding of the 1945 Constitution article 28F that every citizen has freedom of expression (Republic of Indonesia, 1945), the lack of students' understanding of the existence of a plural Indonesian nation, namely different languages, different religions, different ethnicities and races (Ali Imron & Nugrahani, 2019) so that they are still bound by idealism and maintain their

respective egos (Hefner, 2020). (4) Students are less involved in community activities and are more likely to act individually because they are preoccupied with gadgets. The situation of students like this is supported by research results by Schwartz et al. (2018) at universities in the United States which state that students tend to be more individual and do not want to be involved in discussion groups on or off campus. Students choose groups of friends who are equal to their lives, while groups whose economic level is at a lower level, on average, students do not want to hang out. According to Rifat et al. (2017), students should use Gadgets or information and communication technology tools to accelerate social action and disseminate information to their friends to do good (Pratiwi et al., 2019).

Caring is an attitude or behavior of students that can be observed as actual behavior in helping others who require help (McElmeel, 2002). Even social care is a participation or participation of students in building relationships with the surrounding environment (Ministry of Education and Culture Language Center, 2016). Social care is an attitude of openness with humans in general which is shown by a sense of care for every person who needs help (Bloom, 2017).

Forms of social care are (1) Concern for joy and sorrow, meaning concern that arises without differentiating between good and bad situations and feeling what others feel. (2) Personal and shared concern, meaning concern that arises because of personal impulses in helping someone and also concern that is carried out together in feeling what others experience. (3) Urgent concerns, namely concerns that are in the common interest that must be prioritized to be carried out (Tal Saban & Kirby, 2019).

Based on the above, the Citizenship Education lecturer has a vital role in facilitating students recognize and understand forms of social care so that students have high awareness and concern in feeling what other students and the general public feel (Matto & Bennion, 2017; Jaber et al., 2018). Then, to understand more deeply related forms of social care, students can be trained by carrying out learning activities, namely discussing moral issues.

In order for learning objectives to be easily achieved, a lecturer must adopt a learning model or can also develop an Inquiry learning model that will be used during the learning process (Mulyana et al., 2018). One of the learning failures is not achieved effectively and efficiently when lecturers are still bound by conventional learning methods, namely still bound by lecture teaching methods, where lecturers still dominate the learning process, so students sit quietly listening to the lecturer's lectures

(Margunayasa et al., 2019). Research by education experts says that conventional teaching methods are no longer effective (Good et al., 2020). Lecturers must have creativity in choosing a suitable learning model so that students are more active in the learning process (Walker & Warfa, 2017).

Based on the problem regarding students' level of social awareness, Citizenship Education lecturers need to change their learning model from conventional to student-centered. The learning model developed in this study is the Inquiry learning model by modifying the syntax and adding learning activities for discussing moral issues to increase the social care values of students at Bung Hatta University, which was eventually named the Inquiry-Based Citizenship Education Learning Model.

2 METHODOLOGY

This research uses a type of research and development commonly called Research and Development (R & D). This R&D research is a research method that can be used to produce and test the effectiveness of a particular product (Sugiyono, 2017; Dale & Borg, 1965). Developing the Inquiry-Based Citizenship Learning Model in strengthening students' social awareness in tertiary institutions adapts the ADDIE development model, which consists of 5 stages: analysis, design, development, implementation, and evaluation (Kurt, 2017; Brown and Green, 2011). This ADDIE development model has 5 (five) phases or stages that are mutually sustainable.

The stages of analysis were carried out to see how important it is to develop an Inquiry-Based Citizenship Education Learning Model for learning Citizenship Education in universities today. Needs analysis includes 1) curriculum analysis; 2) Citizenship Education lecturers as users of the products being developed; 3) Analysis of students; 4) Literature review.

The design stage is the creation of product planning (planning). This stage includes (1) product target, (2) product target audience, and (3) product element description and how they will be applied

(Gall et al., 2006). The product developed in this research is the Inquiry-Based Citizenship Education Learning Model. The target audience is Citizenship Education lecturers. The resulting product components consist of syntax, reaction principles, social systems, support systems, and instructional and accompanying impacts. The use of this model is expected to increase student social awareness.

At the development stage, three steps are carried out as follows: (a) designing prototypes, (b) conducting formative evaluations, and (c) revising prototypes.

The implementation phase is carried out through limited trials. Limited trials are an initial qualitative evaluation of the product to be produced (Gall et al., 2006). At the beginning of this evaluation, the emphasis was on the content aspect, not the outcomes. Hence, the tools prepared qualitatively were in a suitable category and could be applied.

Following the ADDIE model, the evaluation stage includes obtaining empirical evidence on the results of implementing the model developed for students, then diagnosing and revising according to the results. At this stage, an expanded trial was carried out as an experiment. At this stage is to determine whether the product to be produced meets the objectives of its performance (its performance objectives). Expanded trials were conducted as investigations (Hardyanto & Surjono, 2016; Borg & Gall, 1983: 790). This study conducted field tests using a quasi-experimental design in a randomized control group pretest-posttest design.

Three things determine the practicality of this model for learning Citizenship Education: implementing the model in learning, the lecturer's response as a practitioner in using the learning model, and the student's response. Limited trials and expanded trials are part of this study. The expanded trial was carried out through a pretest-posttest control group design by conducting experiments. The first group is the experimental group that uses the Inquiry-Based Citizenship Education Learning Model, and the second group is the control group using the learning model commonly used by lecturers. The research design is described in Table 1 as follows:

Table 1: Research Design.

Group	Pretest	Treatment	Posttest
Experiment Class	T1	X	T2
Control Class	T1		T2

Information:

X : Learning Model of Inquiry-Based Citizenship Education

T1 : Pretest

T2 : Posttest (Lufri and Ardi, 2015)

The data analysis technique used to test practicality uses descriptive analysis by looking for the average value and percentage of achievement of the assessment on the prototype to be then given an interpretation of the assessment. The interpretation the validation and practicality test results refer to Table 2, which is modified from Widyoko (2017).

Table 2: Interpretation of Research Product Practicality Results.

Average Score	Interpretation
$X > 4,2$	Very Practical
$X > 3.4 - 4.2$	Practical
$X > 2.6 - 3.4$	Pretty Practical
$X > 1.8 - 2.6$	Less Practical
$X < 1.8$	Impractical

3 RESEARCH RESULTS AND DISCUSSION

The practicality test used in the learning process was obtained based on practitioners' assessments, observations, interviews with lecturers and students, responses/impressions from lecturers and students to the books and models used, and the implementation process of the models in the learning process.

Observation data was obtained by filling out observation sheets/field notes. Meanwhile, to get responses/impressions from lecturers and students, the interview stage was carried out specifically for students. A response questionnaire/impression of students was given while participating in the learning process.

The practicality of the Inquiry-Based Citizenship Education Learning Model found three things: the implementation of the model in learning, the response of lecturers as practitioners in using the model, and student responses. The learning model is declared practical when it is easy to use. The details of the results of practicality are explained as follows.

The practicality of this model is seen from the implementation of learning, the practicality of the learning model according to the lecturer, and the practicality of the learning model according to students. First, Table 3 shows the implementation of the Inquiry-Based Citizenship Education Learning Model.

Based on Table 3, the average implementation of learning in the sample class is 3.58, with the criteria for all aspects of the learning model being carried out. It means that all aspects observed are in the All Implemented criteria.

Furthermore, Table 4 shows the practicality of the learning model according to the lecturer.

Table 3: The Implementation of the Inquiry-Based Citizenship Education Learning Model.

Observed Aspects	Average	Criteria
1	2	3
Apperception and motivation	3.72	All Done
Submission of competencies, activity plans, and assessments	3.56	All Done
Application of the principle of model reactions	3.48	All Done
Application of the model syntax	3.47	All Done
Utilization of model support systems	3.69	All Done
Student involvement in learning	3.69	All Done
Instructional impact models	3.44	All Done
Closing	3.56	All Done
Average	3.58	All Done

Table 4: Practicality of Inquiry-Based Citizenship Education Learning Model According to Lecturers.

No.	Rated aspect	Average	Criteria
1	Ease of implementation of the Inquiry-Based Citizenship Education Learning Model	3.83	Practical
2	Benefits of Inquiry-Based Citizenship Education Learning Model	4.00	Practical
3	Use of Student Books, Student Activity Sheets, and Lecturer Books in learning	4.14	Practical
4	Time Allocation	3.25	Pretty Practical
5	Language	4	Practical
	Average	3.84	Practical

Table 5: Practicality of Inquiry-Based Citizenship Education Learning Model According to Students.

No.	Rated aspect	Aiken-V score	Criteria
1	Ease of implementation of the Inquiry-Based Citizenship Education Learning Model	3.54	Practical
2	Benefits of Inquiry-Based Citizenship Education Learning Model	3.43	Practical
3	Use of Student Books and Student Activity Sheets in Learning	3.62	Practical
4	The Role of the Lecturer in Learning	3.59	Practical
5	Language	3.60	Practical
Average		3.56	Practical

According to the practicality test results shown in Table 4, it can be seen that the average practicality of the Inquiry-Based Citizenship Education Learning Model is 3.84 with very high criteria or very easy to implement. When viewed from each of the observed aspects, all have a considerable average value of 3.84. It means that all practitioners who assess the practicality of the Inquiry-Based Citizenship Education Learning Model state that this model is practical or easy to implement.

Furthermore, the lecturer's response shows the practicality of the Inquiry-Based Citizenship Education Learning Model. The lecturer's response to the model can be seen from the ease of implementing the model. The lecturer stated that the Inquiry-Based Citizenship Education Learning Model was easy to implement. The ease of implementing this model is because all the components of the model are available and ready to be used, especially the Student Activity Sheet (LKM) in the student book. Based on discussions with lecturers after learning, it was revealed that the LKM in student books helped lecturers apply the Inquiry-Based Citizenship Education Learning Model.

In addition to the ease of implementation, practicality is seen from the benefits of the Inquiry-Based Citizenship Education Learning Model. This model helps train students to make observations, formulate problems, solve problems, develop alternative solutions, analyze data, draw conclusions, and communicate their group work results. In Table 5, data on the practicality of the Inquiry-Based Citizenship Education Learning Model is shown according to students.

The results of the practicality tests by students shown in Table 5 show that the average practicality value of the Inquiry-Based Citizenship Education Learning Model is 3.56 with applicable criteria or easy to implement. It means that all students who assess the practicality of the Inquiry-Based Citizenship Education Learning Model state that this model is practical or easy to implement. Practicality is determined from the use of student books. Student books assist lecturers in guiding students to make observations; assist lecturers in guiding students to

solve problems, develop alternative solutions, analyze data; draw conclusions; and communicate the group's work results.

Subsequent practicality is determined from the allocation of time and language. Based on the time allocation available in tertiary institutions, it turns out that the Inquiry-Based Citizenship Education Learning Model can be implemented according to the time available. The practicality of the Inquiry-Based Citizenship Education Learning Model is also determined based on student responses after learning. Namely the student's response to the ease of following the Inquiry-Based Citizenship Education Learning Model; the benefits of the Inquiry-Based Citizenship Education Learning Model, the use of student books in learning; the role of lecturers in learning; as well as the language in student books, showing that the Inquiry-Based Citizenship Education Learning Model is convenient. The results prove that the Inquiry-Based Citizenship Education Learning Model is easy for students to follow. In addition to student responses to the Inquiry-Based Citizenship Education Learning Model, the questionnaire also asked about the role of lecturers in learning. Following student responses, it is evident that lecturers can perform the role of facilitator and mentor during learning.

The three tables above show a summary of the results of the practicality test, the results of the practicality test of the Inquiry-Based Citizenship Education Learning Model seen from the implementation of learning, the practicality of the learning model according to the lecturer, and the practicality of the learning model according to students shows that this model is practical. In the opinion of Nieveen (Plomp, 2010) that the level of practicality is seen from the opinion of practitioners of the learning model, it is concluded that it is practical if (1) practitioners state that the model can be applied in the field and (2) the level of implementation of the learning model is included in the "good" category. Based on this, the Inquiry-Based Citizenship Education Learning Model fulfills practical aspects.

4 CONCLUSION

This research is a research on the development of the Inquiry-Based Citizenship Education Learning Model along with the model's supporting systems/products in the form of lecturer books and student books. Based on the discussion of the research results, it can be concluded that the practicality of the Inquiry-Based Citizenship Education Learning Model and its supporting products has been achieved with the average implementation of learning in the sample class is 3.58 with the criteria that all aspects of the learning model are carried out. It means that all aspects observed are in the All Implemented criteria. The Inquiry-Based Citizenship Education Learning Model prototype and the lecturer's and student's book are already practical according to observers, lecturers, and students. It illustrates that the learning model can be carried out well. In learning, there are no significant problems or runs in everyday situations.

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Exploring the Practices of English Club at a Private Islamic School in Pontianak

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Keywords: English Club, Joyful Teaching Activities, English Language Teaching, Interesting Traditional and Digital Media.

Abstract: This case study aimed to explore how the English club with an integration of traditional and digital media was implemented at an Islamic private senior high school in Pontianak, West Kalimantan, Indonesia. The school is located in Northern Pontianak, Pontianak, West Kalimantan, Indonesia. The case study utilized participant observations and interviews to gather the data involving five selected students using purposeful sampling to gain rich and relevant data. The field notes of the observations and transcripts of the interviews were analyzed using thematic analysis. The results of the data analysis were then triangulated to provide valid findings of this study. Two tools are sufficient to have a successful triangulation. The results of the data analysis reveal that the English club, with its three phases, a variety of joyful teaching activities, interesting traditional, and digital media could help build the students' motivation and capacity for speaking and vocabulary mastery even though the English club was conducted after school. Public and private schools are recommended to have an English club with an integration of interesting traditional and digital media to help build the students' motivation and capacity in the English language in an exciting way.

1 INTRODUCTION

English subject is a compulsory subject at the secondary educational level. The government established this to allow Indonesian people to communicate with foreign people and to compete globally, considering that English is an international language used to communicate worldwide. However, learning at school with limited practice duration and limited used of interesting digital media is insufficient (Andersen, Humlum, & Nandrup, 2016; Chan, Churchill, & Chiu, 2017). Students need English tutoring outside school to master and improve their English skills. To cope with this issue, the researchers established a new extracurricular activity at an Islamic senior high school in Pontianak, namely the English club. The English club activities could include reading, writing, listening, speaking, and vocabulary activities. The interactions between

members could be practicing English by learning vocabularies, discussing phenomena, and expressing themselves. Then, the joyful English Club activities could include games and interesting digital media, such as relevant videos, slideshows, and songs from the internet and traditional media, such as colored paper that the students' needs (Cronqvist, 2021; Ekawati&Muhroji, 2017; Malu & Smedley, 2016).

Some research about English club had been done. For example, a study about English club that succeeded to build motivation and improving the English proficiency of the students in the context of a senior high school in Rokan Hulu (Donal & Niati, 2018). In the same context, another study revealed that the students had positive perceptions towards English club where they could learn speaking skills in a joyful manner (Melviza, Ys, & Erdiana, 2017). Similar studies in higher education also showed that the English club could help the students learn

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speaking skills in a joyful manner as well (Abdala, 2021; Eni Suriyah&Mazulfah, 2022). Unlike these previous studies, the researchers would like to initiate an English club in a different context, an Islamic private senior high school in Pontianak, West Kalimantan, Indonesia where English was not a priority and the implementation of traditional and digital media need improvement. Accordingly, this study would like to explore how the English club with an integration of interesting traditional and digital media was implemented at an Islamic private senior high school in Pontianak, West Kalimantan, Indonesia. Hopefully, this study could be a reference to develop a better English club in Pontianak, West Kalimantan, Indonesia.

2 METHODOLOGY

This is a case study that investigates a certain phenomenon that occurs in a case (Creswell, 2012; Yin, 2018). Up to this point, this study explored a single case, an Islamic private senior high school. Using purposeful sampling, the researchers selected the school as it is an Islamic private senior high school, which has made this study different from the previous studies. Another important point is that the school has a partnership program with the researchers' institution, that is, IKIP PGRI Pontianak, which would allow the researchers to gain approval and support from the school to initiate an English club. The school is located in Northern Pontianak, Pontianak, West Kalimantan, Indonesia. A feature of a case study is using multiple tools to gather data (Yin, 2018).

To do so, this case study used participant observations and semi-structured interviews. The first tool is participant observations that allow the researchers to observe and participate in the teaching sessions along with the students who participated in the English club (see Brancati, 2018). Here, the main researcher acted as the tutor who taught the English club for five sessions from August to September 2022. The teaching sessions were recorded and written on the field notes to be analyzed. To reduce bias, the main researcher involved a teacher, Ms. Maja (alias), from the school as a collaborator to provide a second perspective during the observations. The second tool is a semi-structured interview where the researchers provided a few questions to be answered by the students and, if needed, generated specific questions during the interviews (Magaldi&Berler, 2020). A pilot study was conducted at another school to ensure the questions

were understandable before reaching the study participants. Completed the pilot study, the researchers conducted the interviews. Five students who could provide rich data about English club were selected purposefully. Another teacher from the school, Mr. Sama (alias), monitored the interview sessions to ensure the interview was done properly. The interview sessions were recorded and transcribed to be analyzed.

The researchers used thematic analysis to analyze the textual data from the field notes and interview transcripts. The data were coded and categorized under major themes that were identified inductively from the texts of the field notes and interview transcripts (Nowell, Norris, White, & Moules, 2017). The researchers then triangulated the results of the data analysis from the two tools to provide valid findings to be presented further in the following section. To be noted, two tools are sufficient for a successful triangulation (Flick, 2018; Fusch, Fusch, & Ness, 2018).

3 RESULTS AND DISCUSSIONS

This section will elaborate the findings of how the implementation of the English club at an Islamic private senior high school in Pontianak, West Kalimantan, Indonesia was. The findings are presented based on the results of the data analysis of the field notes of the participant observations and the transcripts of the interviews. Here, the exploration of the implementation of the English club is divided into three phases: the planning, teaching, and evaluation.

3.1 Planning Phase

The planning phase is an initial phase of the English club. Here, the main researcher along with other tutors conducted pre-observations to identify the students' needs and found that the students had limited capacity in English language. As a result, the main researcher along with the other tutors initiated an English club as an extracurricular activity under the school permission to help the students to learn English language outside the school hours.

In this phase, the main researcher also planned the English club activities, including lesson plans, traditional and digital media, and joyful teaching activities to help build the students' motivation and capacity in English. Certainly, the tutors and the participants paid attention to health protocols to avoid unnecessary issues during the pandemic of Covid-19.

3.2 Teaching Phase

The main researcher with the other tutors carried out the practices of the English Club after school from 10.00 - 11.00 WIB. The implementation of the English Club was conducted in five meetings, namely the first meeting on Friday, 6 August 2021, second meeting on Saturday, 7 August 2021, the third meeting on Wednesday, 18 August 2021, the fourth meeting on Saturday, 4 September 2021, and the fifth meeting on Saturday 11 September 2021. In brief, the implementation of the English club commonly began with praying and saying greetings. Then, the tutor built the students' knowledge related to the material that will be given and discussed the material that had been given in the previous meeting.

The tutor continued the teaching activity by presenting the material by using interesting traditional media such as colored paper and digital media such as videos, slideshows, and songs to help the students' learning. During the teaching activity, the tutors also utilized games so that students would not feel bored. Next, the tutor closed the teaching activity by giving a quiz that had been prepared in an oral or written form. After implementing the English Club, the main researcher carried out an evaluation related to the implementation of the English Club as a benchmark to find out the shortcomings of the implementation of the English Club.

3.3 Evaluation Phase

An evaluation phase is a phase to see the results of the implementation of the English club that include the obstacles and the views of the students who participated in the English club. The main researcher interviewed five students from class 10 about the obstacles they faced while participating in the English Club. The responses will be presented in Table 1.

Table 1: Obstacles in the implementation of the English club.

Participants	Responses
S3	The materials and media used were difficult for me
S4	I find learning and understanding English challenging because sometimes the tutors give the material via laptop, so I cannot see clearly. This activity is held after school, so sometimes I do not focus on studying anymore.

Table 1 shows the obstacles encountered by the tutors in the implementation of the English club. The

first obstacle is the students found the materials and media used by the tutors were difficult to be understood. This is a common obstacle since English language had not been the students' favorite subject and, surely, the students had difficulties to cope with the teaching activities and media used, in this case, digital media that is presented on a laptop as these experiences and media were rarely used. The second obstacle was the schedule of the English club, which took place after school where the students felt unease about learning further. Having another extra activity after school could be a problem for the students as they had to change their habits to learn for another round. To deal with the second obstacle, the main researcher and other tutors already planned joyful teaching activities, such as games, quizzes, interesting traditional and digital media, to build the students' motivation and capacity in English.

Nevertheless, the English club benefited the students. This is indicated by the students' responses to the interview sessions presented in Table 2.

Table 2: Perceptions of the students regarding the implementation of the English club.

Participants	Responses
S2	English Club is a valuable activity because it can help students learn English outside of school hours.
S1	I became more daring to speak in English because at the English Club, we are allowed to speak in English without fear of making mistakes.
S5	We are allowed to speak English in front of the class, free to ask questions about English, so I feel that this English club, although short, can provide motivation and improve my English skills, especially speaking in English (speaking).
S3	My vocabulary increased after joining the English Club. Previously I did not know the names of animals, colors, and occupations in English. Now I know and memorize them.

Table 2 reveals that the English club could be considered a valuable activity that allowed the students to learn English after school. The English club also allowed the students learned English without fear of making mistakes, providing motivation for the students to learn English and, at the same time, building the students' capacity in speaking skills and vocabulary mastery. In brief, the researchers believe that it is reasonable for the English club to be implemented at this private Islamic school as it brings more benefits for the students, in this case, to build motivation and English proficiency

where the learning took place after school with a variety of activities and interesting traditional and digital media to help the students joyfully learning the English language.

3.4 Discussions

This study found that the implementation of the English club could be considered successful to a certain degree. This could be seen from the students' perceptions regarding the English club where the English club with its joyful teaching activities and interesting traditional and digital media, and the guidance from the tutors could help the students learn English language mainly in the capacity of vocabulary mastery and speaking skills. At the same time, English club could also build the students' motivation to help them learn the English language. Motivation is important as motivation could be a booster for the students to learn the English language that could be beneficial for their life even after the students completed their studies (Muslim, Hamied, & Sukyadi, 2020; Rodríguez & Cobos, 2021). This finding is in line with the previous studies that found out that English club could build motivation and proficiency of the students in the context of a senior high school (Donal&Niati, 2018) and in the context of higher education (Abdala, 2021; Eni Suriyah&Mazulfah, 2022). The difference with the previous studies is that this study investigated the implementation of the English club with an integration of interesting traditional and digital media at a private Islamic school in Northern Pontianak, Pontianak, West Kalimantan, Indonesia where similar studies were still limited. Nevertheless, this study also had a limitation where this study only based its findings from participant observations and interviews without having consideration from other tools such as tests and questionnaires.

4 CONCLUSIONS

This study aimed to explore how the English club with an integration of interesting traditional and digital media was implemented at an Islamic private senior high school in Pontianak, West Kalimantan, Indonesia. The results of the data analysis reveal that the English club with its three phases, interesting traditional and digital media, and joyful teaching activities could help build the students' motivation to learn the English language and capacity in vocabulary mastery and speaking skills. The researchers suggested that public and private senior high schools

should initiate an English club with an integration of interesting traditional and digital media to help their students learn the English language without being afraid of making mistakes or having low grades. A further study should add a proficiency test to provide solid evidence to see the effectiveness of the implementation of the English club regarding the students' English proficiency.

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The Effectiveness of Geometry Learning Tools in Increasing the Level of Thinking of Junior High School Students

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Abstract: This study aims to obtain a learning device for junior high school geometry based on Van Hiele's theory to improve students' thinking levels from the level of analysis to the level of informal deduction. The researcher uses the Four D-Model development method which consists of several stages, namely: define, design, develop; and (d) disseminate. The definition stage includes examining student characteristics, reviewing curriculum content, and analyzing tasks and learning objectives. The draft I of the learning tool was made at the design stage based on the results of the define stage. This draft consists of a Lesson Plan, Student Books, Student Worksheets, and an evaluation instrument. Then in the develop stage, the activities carried out were to validate Draft I and test the readability of Draft I (trial I). These results were used to revise Draft I and produce Draft II. At this development stage, a second trial of Draft II was also carried out. Trial II was used to determine the practicality and effectiveness of the resulting learning tools. The results of the development of these learning tools are a set of junior high school geometry learning tools based on Van Hiele's theory, namely Student Books, Lesson Plans, Student Worksheets, and evaluation instruments that can improve students' thinking levels from the analysis level to the informal deduction level. This learning tool is needed by teachers in remedial learning to improve students' thinking from level 1 to level 2.


1 INTRODUCTION

Geometry is a mathematical part that discusses the concept of mathematics related to planes and spaces. One of the basic goals of teaching mathematics is to improve the students' geometric thinking levels (Al-Ebous, 2016). Having Al-Ebous also argues that geometry is one of the materials in the mathematics curriculum that can develop spatial abilities and reasoning (Al-Ebous, 2016). According to the theory of Van Hiele that someone in learning geometry must go through five levels of thinking that are hierarchical. The fifth levels are visualization, analysis, informal deduction, deduction, and rigor (Erdogan, 2020). Crowley explained the five levels of thinking as follows: Level 0 (visualization), students only understand the geometric form of objects but do not understand the parts of the geometry object component; Level 1 (analysis), students can

recognize different forms of geometry and their properties, but not yet understand the relationship of the properties of the forms of geometry; Level 2 (informal deductive), at this stage students can identify and classify the properties of geometry and use the relationship between the properties of geometry; Level 3 (deductive), at this stage students can make more meaningful geometry forms and can construct logical evidence; and level 4 (rigor), at this stage students can understand the axiomatic system in a geometry system and be able to verify the impact of the axiomatic system. The five stages of thinking this is hierarchical and sequential (Moru et al., 2020). It means that a student who learns geometry is expected to increase their level of thinking as the level rises. According to the theory of cognitive development from Piaget, ideally, the levels of thinking of junior high school students in learning geometry have reached the level of informal deduction, although the

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axiomatic system has also been introduced. Based on several research results (Luneta, 2015)(Fuys et al., 1988)(Clements & Battista, 1992) found students in learning geometry are still in level 0 and level 1. This indicates that geometry learning at the junior high level needs serious attention. According to Van Hiele, the level of thinking students in learning geometry from a certain level can be increased to the next level depending on the learning experience (Kusuma et al., 2021). This means that the increase in the level of thinking students is influenced by the design of learning. Middle school geometry learning tools that aim to increase the student thinking level of a certain level to the next level based on Van Hiele's theory is still very lacking. Though these tools are needed to help students understand higher geometry concepts.

Characteristics of the concept of geometry is abstract and hierarchical. This means that to understand the C concept is needed a good understanding of the concept of A and B. Because all concepts in the mathematical system include mutually related geometry and hierarchical. For this reason, the ability to think about the characteristics of the concept are learned. In the 2013 Mathematics Curriculum, it has presented junior high school geometry teaching materials about the concepts of two parallel lines cut by transversal lines and their applications in proving the theorem that is simple. For example, prove: "The number of sizes of the corners of a triangle is 180° ".

To prove the theorem, students must be able to understand the relationship between traits in the concept of two parallel lines cut by transverse lines. This shows that students in learning the concept of geometry is expected to have achieved a full stage of thinking 2 (informal deductive) and thinking phase 3 (formal deduction) although relatively simple. Thus, both based on Piaget's theory and the characteristics of junior high school teaching materials turned out to be the level of thinking of junior high school students in learning geometry is expected to have reached the level of thinking 2 and the thinking level 3. Based on this and the results of the research described above that most of the junior high school students in learning geometry are still in level 0 and level 1, it is deemed necessary to have a geometry learning tool to increase the student thinking level from level 1 to level 2. Based on the study of several references, researchers have not found research results that produce special learning tools like this. This learning tool is specifically used for remedial purposes in small groups. This learning tool is designed on a constructivist basis, so that the geometric concepts

learned are more meaningful. Therefore this study aims to develop Junior Geometry Learning Tools based on Hiele's theory of Van to increase the student thinking level of the analysis level to the informal deduction level through a development research.

2 METHOD

This research is a development and research. Things to note in development research are the quality of products produced. Plomp and Nieveen provide product quality criteria namely valid (reflecting the state-of-the art and consistent internal assessment), have added value, practical and effective (Palupi & Khabibah, 2018)(Nieveen, 1999). The product is said to be valid if the material components are based on state-of-the art knowledge (validation of content) and all components are consistently related (construct validation). The product is said to be of practical quality if according to other teachers or experts are useful and easy to implement by teachers and students.

Categorized as effective, if it reflects student experience and expected student learning outcomes. Therefore the focus of this development research is a quality product produced by valid, practical and effective criteria. This learning tool is said to be valid, if the validator has declared it as such and feasible to use, even though there is a revision. This learning tool can be declared to meet practical criteria, if the respondent (user) of the learning device tends to provide a positive response. This learning device can be declared effective, if it can increase the student thinking level of the analysis level to the level of informal deduction. The learning tool development model used in this study is the Four D-Model proposed by Thiagarajan and Semmel (Thiagarajan, 1974), namely (a) the definition stage, (b) the design stage, (c) the development stage and (d) the stage of dissemination. The activities carried out at the definition stage are examining the content of junior high school geometry in the curriculum and the characteristics of students in geometric thinking. While the activities at the design stage are compiling and making learning tools based on the results of activities at the defining stage. The results of the activities at the design stage are in the form of an initial prototype (Draft I) of learning tools. The next activity at the development stage is to carry out trial I and trial II. Trial I to determine the readability of Draft I and trial II to determine the effectiveness of the learning tools developed. The results of the development in the first trial resulted in Draft II. Then

this Draft II was developed in the second trial and resulted in a final draft that met the specified criteria. The data in this study are quantitative and qualitative. The data collection techniques used in this study consisted of (a) Van Hiele Geometry Test (VHGT) developed by Usiskin (Usiskin, 1982). This test is used to classify students' thinking stages in understanding geometric concepts; (b) Interview. Test-based interview activities (VHGT) to confirm the data obtained from the test results (VHGT); (c) The researcher used a questionnaire to obtain data on student responses in writing to test the practicality of the learning tools developed. Data analysis in this study used descriptive data analysis. Meanwhile, specifically for qualitative data, it refers to the qualitative data analysis of the Miles and Huberman model, namely: data reduction, data display and conclusions/verification.

3 RESULTS OF RESEARCH

The results of the development of these learning tools are as follows:

3.1 Results of the Defined Phase

The results that the researchers obtained at this stage were: (a) the results of the study of curriculum content and mathematics textbooks for grade 7 semester 2 for the 2013 Curriculum, showed that the description of the concept material for the types of rectangles was not detailed and did not comprehensively explain the relationship between the properties of the types of rectangles and how to define each type of quadrilateral; (b) the results of the survey and initial test of the trial development of this learning tools at SMPN 12 Palu from 15 students tested, which yields the results of 14 students in the visualization level of thinking, 4 students in the analytical thinking level and 1 student in the informal deduction level. This shows that learning geometry at the junior high school level needs attention. According to Piaget's theory of cognitive development, junior high school students in learning geometry should have reached the level of informal analysis and deduction thinking; (c) the geometric concepts obtained from the concept analysis are the concept of the types of quadrilaterals regarding their properties, the relationship between the properties of the types of quadrilaterals and the definition of the types of quadrilaterals. The types of quadrilaterals are parallelogram, rectangle, square, rhombus, kite, and trapezoid; (d) the results of the task analysis developed are Student Worksheets and

independent assignments contained in the Student Book; (e) the learning objectives to be achieved are as follows: determine the properties of each type of quadrilateral; determine the relationship between certain types of quadrilaterals and other types of rectangles; define the concept of a certain type of quadrilateral based on its properties.

3.2 Results of the Design Phase

The result of development at this design stage is called Draft I or the initial prototype. This initial prototype is packaged in Student Books, Lesson Plans, Practice Questions, and Student Worksheets. The Student's Book contains teaching materials for quadrilaterals, especially the properties of types of rectangles, the relationship between the properties of types of rectangles, and definitions of types of rectangles. The material on the types of rectangles contained in the Student Book includes parallelograms, rectangles, squares, rhombuses, kites, and trapezoids. These teaching materials are presented or packaged on constructivist grounds. This means that the properties of the types of quadrilaterals, the relationship between the properties of the types of rectangles, and the definition of each type of quadrilateral that students must learn are expected to be found by students themselves. Meanwhile, the steps of the Lesson Plan are packaged based on the syntax of the Van Hiele learning model which consists of five phases, namely: (a) the information phase; (b) the directional orientation phase; (c) the affirmation phase; (d) free orientation phase and; (e) integration phase. The design of this learning tool is based on Van Hiele's theory, namely the theory of thinking levels and Van Hiele's learning model.

The characteristics of this learning tool are specifically to improve the thinking level of junior high school students in learning geometry from the analysis level to the informal deduction level. While the teaching materials include rectangular shapes. The quadrilaterals in question are parallelograms, rectangles, squares, rhombuses, kites, and trapezoids.

3.3 Results of the Develop Phase

At this development stage, three things are produced, namely: (a) validation results from the validator; (b) the results of trial I (readability test), and; (c) the results of the second trial (effectiveness test and practicality test). Based on the results of the development at the design stage, it was then validated

by two mathematics lecturers teaching geometry and three junior high schools.

Table 1: Validation Results.

No.	Analyzed Area	Average Validator Rating				Average
		Student Book	Worksheet	Lesson Plans	Practice Questions	
1	Contents	3.40	3.70	3.47	3.60	3.54
2	Construction	3.50	3.50	3.60	3.70	3.58
3	Language	3.60	3.70	3.60	3.60	3.63
Total		10.50	10.90	10.67	10.90	10.75
Average		3.50	3.63	3.56	3.63	3.58
Conclusion		Valid	valid	valid	valid	Valid

Based on Table 1 above, it turns out that all the learning tools developed meet the valid criteria, although there are still revisions and the revision results produce an initial prototype (Draft I). Meanwhile, in the first trial results, several words/terms and sentences were found in the Student Book and Student Worksheets that needed to be revised. The results of this revision resulted in Draft II. Then this Draft II was tested (trial II) on class IIB students of SMPN 12 Palu. This second trial, involved four test subjects whose thinking level was at the analysis level, namely IT subjects, AZ subjects, MA subjects, and EP subjects. Trial II was carried out for five meetings of learning activities. The results of this second trial are listed in Table 2 below.

Table 2: Final test results in trial II.

No	Trial Subject	Number of Correct Answers for Each Question			Level Category
		1-5	6-10	11-15	
1	IT	3	2	2	Level 2
2	AZ	3	1	0	Level 1
3	MA	3	1	2	Level 2
4	EP	3	1	1	Level 2

After triangulating the method with interviews, the results remained the same as in Table 2 above. Thus, it can be concluded that the developed learning tools can improve the subject's thinking level from level 1 (analysis) to level 2 (informal deduction), although one subject (subject AZ) is still at the analysis level. Furthermore, the practicality test of using the resulting product (learning tool) is shown in Table 3 below.

Table 3: Student responses to the application of learning tools during trial II.

No.	Statements in the questionnaire responded by the students	Σ
1	Presentation of material in Student Books and Student Worksheets is interesting	19
2	Presentation of material in the Worksheet Students can find the concept being studied.	19
3	The content of the Student Worksheet is in accordance with the Student Book	19
4	The teaching method used by the teacher is fun and interesting.	19
5	The learning method used by the teacher can raise students' interest in learning.	19
6	The learning method used by the teacher can improve understanding of the concepts being studied.	19
7	Learning process activities can improve thinking skills.	19
8	Learning process activities increase the attitude of respect and cooperation in groups.	19
9	The language in the Student Books, Student Worksheets and Practice Questions is understandable.	19
10	The questions in the Problem Practice challenge the thinking process.	19
Total		190
Percentage (%)		100.00
Total Percentage of Positive/Negative criteria (%)		(Positive) 0.94 (Negative) 19.05
Number of Students Filling Out Questionnaire		19

Based on Table 3 above, in general, the students' responses to the learning tools and processes during the second trial obtained the average student response in the positive category reaching 19.05% and in the negative category reaching 0.95%. This shows that the learning tool meets the criteria of practicality. Thus, it can be concluded that the SMP geometry learning tools, especially the quadrilaterals that have been developed, have met the valid, practical and effective criteria. The dissemination stage for the

development of learning tools is carried out at this seminar and positive suggestions are highly expected.

4 DISCUSSION OF RESEARCH RESULTS

At the stage of defining the development of these learning tools, especially the results of the analysis of the K-13 curriculum, it turns out that in the curriculum the content of the material does not explain the properties of the types of rectangles in detail and comprehensively. In the Mathematics Package Book for grade VII for K-13, there is also no correlation between the properties of the quadrilaterals; so students understand the concepts of quadrilateral types not comprehensively. As a result, students find it difficult to find interrelationships between concepts of the quadrilateral type. This is by the opinion of the researchers, that students are not accustomed to doing formal proofs in learning geometry at school, but more informal geometry learning is needed (Alex & Mammen, 2016). Therefore, it is necessary to present the material in an orderly, systematic, and comprehensive manner, so that students have complete knowledge and understanding of the types of quadrilaterals. For this reason, it is also necessary to have a concept map between the concepts of the types of quadrilaterals as a means for students to understand the properties and definitions of the concepts of the types of quadrilaterals.

Based on the results of the initial test, most of the students of SMPN 12 Palu in learning geometry 14 were at the visualization level, 4 students were at the analysis level and 1 person was at the informal deduction thinking level. According to intellectual development theory, junior high school students should be able to think formally. This means that students' understanding of geometric concepts should be more abstract and not at the visualization level. Students should be able to understand more abstract geometric concepts, whether presented in the form of definitions or theorems of the relationship between concepts. Therefore, based on the characteristics of students who are still in visualization thinking and the ideal competencies that junior high school students should have, it is appropriate that the development of this learning tool was developed through this research. According to intellectual development theory, junior high school students should be able to think formally. This means that students' understanding of geometric concepts should be more

abstract and not at the visualization level. Students should be able to understand more abstract geometric concepts, whether presented in the form of definitions or theorems of the relationship between concepts. Therefore, based on the characteristics of students who are still in visualization thinking and the ideal competencies that junior high school students should have, it is appropriate that the development of this learning tool was developed through this research. According to De Villiers (Alex & Mammen, 2016), the revision of the curriculum on geometry material in elementary schools will determine the success of students in learning geometry in junior high schools.

Related to this, the design of learning tools developed, especially Student Books and Student Worksheets are designed with the aim of increasing students' thinking stages from the analysis level to the informal deduction level. Construction of Student Books and Student Worksheets on a constructivist basis. This means that the core concepts being studied can be found by students themselves through activities in learning.

At the development stage, the learning tools developed were validated by mathematics education lecturers and junior high school mathematics teachers. Aspects that are validated include aspects of material content, construction, and language aspects. The validation results show that the developed learning tools meet the valid criteria, although there are several revisions. Most of the revisions are related to language aspects, especially terms/words, and sentences. This is also related to the results of trial I, it turns out that there are terms/words or fragments of sentences that students do not understand, so revisions are needed. Then revisions were made and then the revised draft was tested in the second trial to determine the effectiveness of the developed learning tools. This is by Van Hiele's opinion that the language used in learning geometry is very important (Al-ebous, 2016). Therefore, the language factor in the form of writing, symbols or verbal in learning geometry greatly affects students' understanding of the concepts being taught.

The results of this second trial indicate that the learning tools developed meet the effective criteria. It is evident that the four experimental subjects experienced an increase in the thinking level from the analysis level to the informal deduction level, although there was one experimental subject that did not experience an increase in the thinking level. This shows that the learning tools developed are quite effective in increasing the thinking level of junior high school students in learning geometry from the analysis level to the informal deduction level. At the

transition level of thinking from the analysis level to the informal deduction level, conceptualization skills are needed. Some research results show that conceptualization is a cognitive process that is often experienced by students when solving problems (Noor & Alghadari, 2021)(Aghadari, 2021).

The weak mastery of geometric concepts experienced by students is due to the lack of student's ability to solve problems (Noviana & Hadi, 2021)(Aghadari, 2021). The low level of thinking ability of students is caused by the learning strategies used in schools. Therefore, learning geometry should place more emphasis on problem solving, reasoning and spatial abilities (Hassan et al., 2020)(Cahyanita et al., 2021). In addition, language also plays an important role in learning geometry. A teacher in teaching geometry must use language that is in accordance with the development of students' thinking (Pasani, 2019). Students at the abstraction thinking level have understood the concept definition well. This means that students have been able to understand the meaning of the definition, even though the representation is different from the definition presented formally. A student in constructing the meaning of a concept depends on his ability to understand the definition of the concept. Therefore, the role of definition is very important in constructing the meaning of a concept (Haj-Yahya, 2021).

The results of the practicality test of using learning tools also indicate a positive thing. Because most of the students' responses to learning tools in the second trial process were in the positive category with an average of 19.05% and only an average of 0.95% in the negative category. This means that students are quite good at responding to the learning tools used and it means that the learning tools developed meet the practical criteria.

Thus the geometry learning tool for junior high school level developed through this research has met the valid, practical, and effective criteria for improving students' thinking level from the analysis level to the informal deduction level.

5 CONCLUSION

Based on the results of this development research, a geometry learning device for junior high school level based on Van Hiele's theory has been obtained which can improve students' thinking levels from the analysis level to the informal deduction level. These learning tools are Student Books, Lesson Plans, Student Worksheets, and Practice Questions. The specifications of this learning tool are as follows: (a)

this learning tool is based on Van Hiele's theory, both the theory of the thinking levels and Van Hiele's theory of learning; (b) constructivist-oriented learning tool activities. This means that the geometric concepts learned are constructed by students through learning activities; (c) this learning tool specifically aims to improve students' thinking level from the analysis level to the informal deduction level on the material of quadrilateral concepts in junior high school. The concepts of quadrilaterals that are the focus of the study are the properties of quadrilaterals, the relationship between the properties of the types of quadrilaterals, and the definition of each type of quadrilateral; (d) this learning tool is used for remedial purposes, both individually and in small groups.

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