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SEKAPUR SIRIH KETUA STKIP KUSUMA NEGARA

Assalamualaikum Wr. Wb

Puji syukur kita panjatkan ke hadirat Allah SWT, Tuhan Yang Maha Pengasih lagi Maha Penyayang, atas limpahan rahmat, taufik, dan karunia-Nya sehingga Tim Redaksi Jurnal Ilmu Pendidikan (JIP) STKIP Kusuma Negara dapat menyelesaikan dan menerbitkan **Volume 17 Nomor 01 Periode Februari–Juli 2025** dengan baik dan lancar.

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Ucapan terima kasih kami sampaikan kepada semua pihak yang telah berkontribusi, baik secara langsung maupun tidak langsung, dalam proses penyusunan dan penerbitan jurnal ini. Semoga segala bentuk dukungan dan kerja sama yang diberikan mendapat balasan berupa pahala yang berlipat ganda dari Allah SWT.

Wassalamualaikum Wr. Wb

Jakarta, Juli 2025
Ketua STKIP Kusuma Negara,

Assoc. Prof. Dr. H. Herinto Sidik Iriansyah, M. Si

KATA PENGANTAR

Puji syukur kami panjatkan ke hadirat Allah SWT atas limpahan rahmat dan karunia-Nya, sehingga **Jurnal Ilmu Pendidikan (JIP) STKIP Kusuma Negara Volume 17 Nomor 01 Periode Februari–Juli 2025** dapat diterbitkan dengan baik dan tepat waktu.

Penerbitan jurnal ini merupakan bagian dari komitmen STKIP Kusuma Negara dalam mendukung pengembangan dan diseminasi ilmu pengetahuan di bidang pendidikan. Jurnal ini tidak hanya menjadi wadah bagi dosen di lingkungan STKIP Kusuma Negara, tetapi juga terbuka bagi akademisi, peneliti, dan praktisi pendidikan dari berbagai perguruan tinggi serta lembaga penelitian lainnya. Dengan demikian, JIP berfungsi sebagai ruang kolaborasi dan pertukaran gagasan ilmiah lintas institusi.

Kami berharap artikel-artikel yang dimuat dalam edisi ini dapat memberikan kontribusi nyata bagi pengembangan ilmu pendidikan, menjadi inspirasi bagi para pendidik dan peneliti, serta mendorong lahirnya inovasi dalam praktik pendidikan di Indonesia.

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ARTIFICIAL INTELLIGENCE INTERVENTION FOR DIGITAL LITERACY AND DIGITAL AMNESIA AMONG ISLAMIC EDUCATION STUDENTS AT UNIVERSITAS TERBUKA IN SOCIETY 5.0

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Abstract

This study examines the impact of Artificial Intelligence (AI) interventions on digital literacy, digital amnesia, and the readiness of Universitas Terbuka (UT) students in the Islamic Education Study Program to face the challenges of the Society 5.0 Era. Using a mixed methods approach with a sequential explanatory case study design, quantitative data from 100 students were analyzed using simple linear regression, while qualitative data were processed inductively. The findings reveal that AI interventions significantly enhance digital literacy by 81% (high category) and reduce digital amnesia by 65.7% (moderate category). AI interventions also prepare students for the Society 5.0 Era through active participation, the use of AI applications, positive interactions with tutors, technology utilization, and student collaboration. The study recommends strengthening technological infrastructure, providing tutor training, and developing AI-based learning materials to optimize learning at UT, enabling students to better face the challenges of the Society 5.0 Era.

Keywords: Artificial Intelligence, Digital Amnesia, Digital Literacy, Society 5.0

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INTRODUCTION

The development of information and communication technology has brought significant changes to various aspects of human life, including education. Universitas Terbuka (UT), as the largest distance education institution in Indonesia, plays a crucial role in ensuring that its students are not only able to keep up with technological advancements but also capable of optimizing them in the learning process. One of the greatest challenges faced by UT students in today's digital era is how they can develop strong digital literacy while avoiding the phenomenon known as digital amnesia.

Digital literacy, which includes the ability to access, use, read, create, and communicate digital information (Hagel, 2015), has become an essential skill for students facing the challenges of Society 5.0 (Veronika, 2023). This era is characterized by the integration of advanced technologies such as Artificial Intelligence (AI), the Internet of Things (IoT), and big data into all aspects of life (Anshori, 2020). To remain competitive in this increasingly technology-driven

society, students of Universitas Terbuka must possess adequate digital literacy skills.

However, as students become increasingly immersed in digital environments, a new cognitive risk begins to emerge—digital amnesia. Technological advancements bring not only benefits but also new challenges, one of which is digital amnesia. This term refers to the tendency of individuals to rely excessively on technology for storing and accessing information (Dirin, 2019a), which can weaken their cognitive ability to independently recall and understand that information (Yan, 2020). When students depend more on digital devices than on meaningful comprehension, their critical thinking and problem-solving abilities may be adversely affected.

In this context, Artificial Intelligence (AI) offers a potential solution to address these challenges. AI can be used to enhance students' digital literacy (Liu, 2021) while also helping to mitigate digital amnesia (Călinescu, 2022) by providing adaptive learning tools, virtual learning assistants, and analytical platforms tailored to individual learning needs. However, the extent to which AI interventions can be effectively implemented in a distance education environment such as Universitas Terbuka remains an open question. Can AI truly enhance the digital literacy of UT students—particularly in the Islamic Education Study Program—without exacerbating the phenomenon of digital amnesia? How can AI be used to balance the benefits of digital tools with the preservation of students' cognitive capacities?

These questions point to a significant research gap. First, there is a lack of studies that simultaneously examine the relationship between digital literacy and digital amnesia in the context of distance learning. Second, few empirical studies have explored the dual role of AI in both improving digital literacy and reducing cognitive dependency on digital technologies. Third, there is a noticeable absence of research focusing specifically on students in the Islamic Education Study Program at Universitas Terbuka, a group that faces unique challenges in integrating modern technology with religious educational values. This research is therefore designed to address these gaps by analyzing the role of AI in enhancing digital literacy among students in the Islamic Education Study Program at Universitas Terbuka while also exploring how AI can help overcome digital amnesia in order to prepare students for active, independent, and productive participation in the Society 5.0 era.

From a novelty perspective, this study provides an interdisciplinary and context-specific approach. It is among the first to integrate the topics of digital literacy, digital amnesia, and artificial intelligence into a single, holistic educational framework, particularly in the realm of Islamic distance education. Moreover, this research aims to develop AI-based learning strategies that not only improve students' technological competencies but also maintain their ability to think critically and retain information. Thus, the outcomes of this study are expected to contribute meaningfully to the development of more effective educational strategies in the digital era and to strengthen the cognitive and digital competencies of Universitas Terbuka students in facing the challenges of the future.

RESEARCH METHOD

Research Design and Rationale

This study employs a mixed methods approach combining both quantitative and qualitative research (Creswell, 2014), specifically using a sequential explanatory design. The rationale behind this choice is to enable a comprehensive understanding of the research problem by starting with a broad measurement of variables (quantitative), followed by deeper exploration through participants' experiences (qualitative). This design is particularly suitable for answering the central research question regarding the effectiveness of AI intervention in enhancing digital literacy and reducing digital amnesia among students. The initial quantitative phase identifies trends and relationships, while the subsequent qualitative phase helps explain the "why" and "how" behind those findings, providing richer contextual insight (Tashakkori, 2010).

A case study method is used within the qualitative phase to allow in-depth analysis of a specific group of students undergoing AI-based learning interventions. This design is deemed appropriate because it facilitates detailed exploration of both individual and group-level experiences, which are crucial for understanding the nuanced impact of AI on cognitive and digital behavior in an open and distance learning environment.

Data Generation and Collection Procedures

Data generation in this study follows the sequential explanatory structure, where quantitative data are collected first, followed by qualitative data collection to elaborate on the initial results. The quantitative phase includes the administration of a structured questionnaire aimed at measuring: (1) students' levels of digital literacy; (2) symptoms of digital amnesia; and (3) the initial perceived impact of AI tools in learning activities.

After the quantitative findings are analyzed, the qualitative phase proceeds to deepen the interpretation of those results through observations, semi-structured interviews, and documentation analysis. The interviews aim to explore students' and lecturers' perceptions, experiences, and behavioral changes related to AI usage in the learning process.

Participants in this study include students and lecturers from the Islamic Education Study Program at Universitas Terbuka. A purposive sampling technique is used to ensure that selected individuals have relevant experience and knowledge about the integration of AI in distance education. The qualitative case study focuses particularly on a group of students involved in a specific AI intervention, selected based on their active participation and availability for follow-up interviews.

Data Source, Informants, and Key Informants

The data for this study were obtained from students enrolled in the Islamic Education Study Program at Universitas Terbuka. Quantitative data were collected through questionnaires distributed to 100 second-semester students, while qualitative data were gathered through in-depth interviews with 20 students, selected purposively based on their active engagement in AI-based learning activities. The research was conducted during the period of June to July 2024.

In this study, the informants refer to the students who participated in the survey and interviews, providing information about their experiences in using AI to enhance digital literacy and reduce symptoms of digital amnesia.

The key informants consist of course instructors and academic program coordinators, selected for their in-depth understanding of curriculum design, learning strategies, and the integration of technology in the teaching and learning process at Universitas Terbuka. These key informants provided contextual and strategic insights that supported the interpretation and analysis of the research findings.

Data Analysis Procedures

The analysis of data follows the mixed methods structure, where quantitative and qualitative data are analyzed separately but integrated in interpretation.

Quantitative analysis uses simple regression statistical methods to determine the effect of AI intervention on two main variables: students' digital literacy and digital amnesia. This helps quantify the relationship and provide a generalizable overview of patterns in the student population.

Qualitative analysis is conducted through thematic analysis to interpret and elaborate on the quantitative results. Data from interviews, observations, and documentation are coded to identify recurring themes related to students' experiences with AI. For instance, a conceptual theme such as "AI as a cognitive extension" may emerge, while operationally this could refer to students' reduced efforts in memorizing information due to reliance on digital tools.

An example: If the regression analysis reveals a statistically significant improvement in digital literacy but also a rise in indicators of digital amnesia, the qualitative phase might uncover underlying causes—such as students using AI for quick answers without critical engagement. Throughout this process, relevant literature (e.g., Creswell, 2014; Tashakkori, 2010) serves as a guide to ensure methodological consistency and validity.

Ethical Considerations

All participants will be informed about the purpose and procedures of the study, and their consent will be obtained prior to data collection. Confidentiality and anonymity will be maintained throughout the research process. Participation is voluntary, and respondents have the right to withdraw at any stage. Ethical clearance is obtained in accordance with the guidelines of Universitas Terbuka's research ethics committee.

RESULTS AND DISCUSSION

Based on the data collected, the findings reveal that Digital Literacy vs. Digital Amnesia: AI Intervention among Universitas Terbuka Students in the Islamic Education Study Program in the Society 5.0 Era encompasses three key aspects. First, AI intervention plays a significant role in enhancing the digital literacy of students in the Islamic Education Study Program, helping them acquire essential skills to navigate the digital era. Second, AI intervention assists in overcoming digital amnesia, enabling students to rely less on technology for information recall and fostering better cognitive engagement. Third, the intervention significantly impacts students' readiness to face the challenges of the Society 5.0 Era by equipping them with the necessary technological competence and adaptability. Each of these findings will be discussed in detail in the subsequent sections.

AI intervention in improving the digital literacy of Universitas Terbuka students in the Islamic Education Study Program

AI intervention has a highly significant impact (81%) on improving the digital literacy of students in the Islamic Education Study Program at Universitas Terbuka. The strong/high influence category indicates that students respond very positively to AI intervention (Ocaña-Fernández, 2019), which is likely due to the relevance of AI to the learning needs in the digital era (Sappaile, 2024). This also reflects the students' readiness to adapt to new technologies in supporting the teaching and learning process (Singh, 2016).

Table 1. The Extent of AI Intervention's Impact on Enhancing Students' Digital Literacy

Model Summaryb				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.810[a]	.657	.653	6.721

a. Predictors: (Constant), AI Intervention in Learning

b. Dependent Variable: Digital Literacy Skills

The calculation results for the path coefficient of AI intervention's impact on improving the digital literacy of Universitas Terbuka students in the Islamic Education Study Program indicate a path coefficient value in the Beta column (Standardized Coefficients) of 0.810 for the path coefficient between X (AI intervention) and Y (digital literacy). The calculation details are as follows:

Table 2. Path Coefficient of AI Intervention's Impact on Students' Digital Literacy

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	33.230	5.149		6.453	.000
	AI Intervention in Learning	.678	.050	.810	13.693	.000

a. Dependent Variable: Digital Literacy Skills

Based on the coefficients table, the AI intervention in improving students' digital literacy yielded a calculated t-value (t_{hitung}) of 13.693 and a p-value of 0.000, which is smaller than the significance level (α) used, i.e., 0.000 < 0.05. This indicates that the AI intervention variable (X) has a direct positive impact on the students' digital literacy skills variable (Y).

The path coefficient of AI intervention's impact on improving students' digital literacy was calculated, followed by significance testing using analysis of variance (ANOVA). The results of the significance test for the impact of AI intervention on enhancing students' digital literacy are as follows:

Table 3. Significance Testing of AI Intervention's Impact on Students' Digital Literacy

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8469.530	1	8469.530	187.510	.000[b]
	Residual	4426.510	98	45.168		
	Total	12896.040	99			

a. Dependent Variable: Digital Literacy Skills

b. Predictors: (Constant), AI Intervention in Learning

Based on the results of the significance testing of AI intervention's impact on improving students' digital literacy, it was found that the p-value is smaller than the significance level (α) used (0.05), specifically 0.000 < 0.05. Therefore, the hypothesis of this study is accepted. This indicates that AI intervention has a significant impact on improving students' digital literacy.

This indicates that the path coefficient of the AI intervention's impact on improving the digital literacy of Universitas Terbuka students in the Islamic Education Study Program is significant and explains the direction and strength of the influence. In other words, based on the path coefficient, it is evident that there is a positive relationship between the AI intervention in learning and students' digital literacy skills. This means that as the level of AI intervention in learning increases, students' digital literacy skills also improve.

The magnitude of the AI intervention's impact on students' digital literacy in the Islamic Education Study Program at Universitas Terbuka is 81%, which is categorized as strong/high influence. For further clarification, please refer to the figure below:

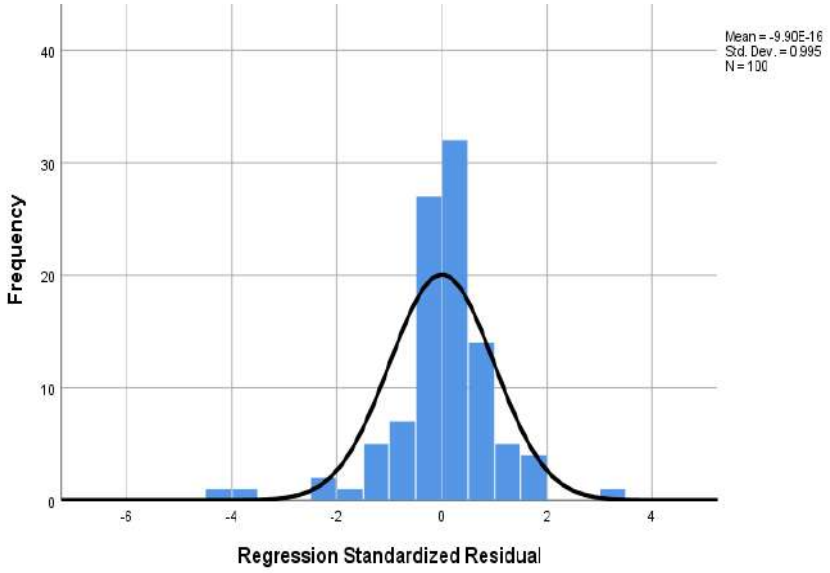

Figure 1. The Impact of AI Intervention on Students' Digital Literacy

Based on the results of the above tests, it is concluded that AI intervention in learning has been proven to significantly influence students' digital literacy skills

(Koranuva, 2020). Therefore, the hypothesis stating that "AI intervention can enhance the digital literacy of Universitas Terbuka students in the Islamic Education Study Program" is validated (Prastyo, 2024; Joseph, 2024; Muawanah, 2024). Consequently, the research objective to analyze the role of AI intervention in improving the digital literacy of Universitas Terbuka students in the Islamic Education Study Program can be realized/achieved.

AI Intervention in Assisting to Overcome Digital Amnesia Among Universitas Terbuka Students in the Islamic Education Study Program

The impact of AI intervention in overcoming digital amnesia is 65.7%, categorized as moderate/fairly strong (Ali, 2024). This percentage indicates that while AI is effective in helping students address digital memory loss, its influence is not as significant as in the aspect of digital literacy (Shanmugasundaram, 2023). This may be due to the complexity of the digital amnesia phenomenon, which requires not only technological solutions but also deeper psychological and educational approaches (Robert, 2024; Călinescu, 2024).

The extent of the impact of AI intervention in overcoming digital amnesia among students of Universitas Terbuka in the Islamic Education Study Program can be observed in the following calculation results:

Table 4. The Extent of AI Intervention's Impact in Overcoming Students' Digital Amnesia

Model Summary[b]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.682[a]	.466	.460	8.385
a. Predictors: (Constant), AI Intervention in Learning				
b. Dependent Variable: Digital Amnesia				

The calculation results for the path coefficient of AI intervention's impact in overcoming digital amnesia among students of Universitas Terbuka in the Islamic Education Study Program yielded a path coefficient value in the Beta column (Standardized Coefficients) of 0.903 for the path between X (AI intervention) and Y (digital amnesia). The detailed calculation is as follows:

Table 5. Path Coefficient of AI Intervention's Impact on Students' Digital Amnesia

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	52.420	5.552		9.442	.000
	Digital Amnesia	.480	.052	.682	9.241	.000
a. Dependent Variable: AI Intervention in Learning						

Based on the coefficients table of AI intervention in reducing students' digital amnesia, the calculated t-value (t_{hitung}) is 9.241, and the p-value is 0.000, which is smaller than the significance level (α) used, i.e., 0.000 < 0.05. This indicates that the AI intervention variable (X) has a direct positive influence on the digital amnesia variable (Y) among students.

The calculated path coefficient of AI intervention in reducing students' digital amnesia was further tested for significance using analysis of variance (ANOVA). The following are the results of the significance test for the impact of AI intervention in reducing students' digital amnesia:

Table 6. Significance Testing of AI Intervention's Impact on Students' Digital Amnesia

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6005.072	1	6005.072	85.401	.000[b]
	Residual	6890.968	98	70.316		
	Total	12896.040	99			

a. Dependent Variable: AI Intervention in Learning

b. Predictors: (Constant), Digital Amnesia

Based on the significance testing results of the impact of AI intervention in reducing students' digital amnesia, it was found that the p-value is smaller than the significance level (α) used (0.05), specifically 0.000 < 0.05. Therefore, the hypothesis in this study is accepted. This indicates that AI intervention has a significant impact on reducing students' digital amnesia. For further clarification, please refer to the figure below:

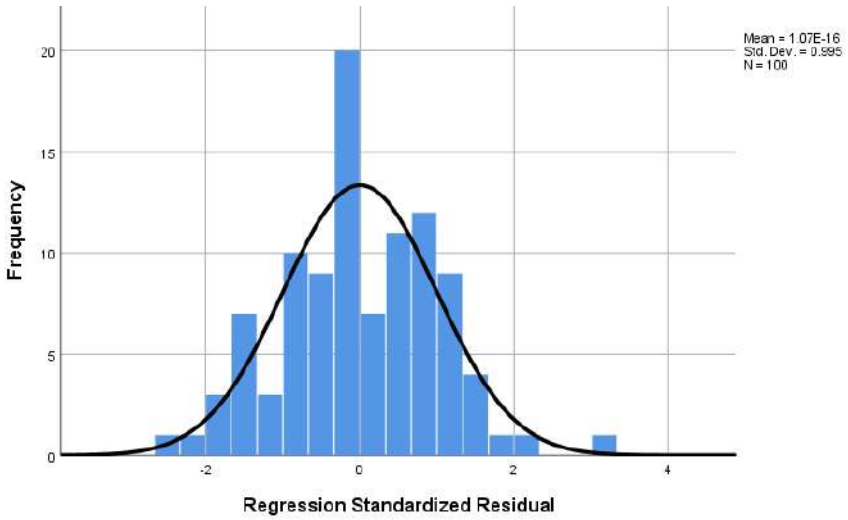

Figure 2. The Impact of AI Intervention on Students' Digital Amnesia

Based on the results of the above testing, it is concluded that AI intervention in learning has been proven significant in reducing students' digital amnesia (Dirin, 2019b; Yan, 2020; Tkachenko, 2024). Therefore, the hypothesis stating that "AI intervention can reduce digital amnesia among Universitas Terbuka students in the Islamic Education Study Program" is validated. Consequently, the research

objective of analyzing AI intervention in assisting to overcome digital amnesia among Universitas Terbuka students in the Islamic Education Study Program can be realized/achieved.

The Impact of AI Intervention on the Readiness of Universitas Terbuka Students in the Islamic Education Study Program to Face the Challenges of the Society 5.0 Era

Based on the data collected using an observation method with a checklist technique administered to 100 UT students, the following data were obtained:

Table 7. The Use of AI in Learning for UT Students

	Yes	No	Explanation
Students actively participate in discussions involving AI	60	40	60 out of 100 students actively participated in discussions involving AI, while 40 students were less engaged. This indicates that student participation varies, with some being more active than others.
Students utilize AI applications in assignments or presentations	55	45	The use of AI applications is limited to certain tasks. Students commonly use ChatGPT, Google Assistant, Grammarly, Canva, Mendeley, Cap Cut.
There is positive interaction between students and tutors regarding AI	50	50	The interaction between students and tutors regarding AI remains focused on technical aspects, without in-depth discussions about its benefits or impacts, highlighting the need for improvement.
Students demonstrate enthusiasm toward the use of AI	65	35	Based on the observation, 65 out of 100 students showed enthusiasm toward the use of AI, while 35 did not. This indicates a generally positive response, although interest is not yet consistent among all students.
The use of AI appears to facilitate understanding of the taught materials	58	42	58 out of 100 students felt that the use of AI helped them understand the material, while 42 students experienced difficulties. This suggests that AI is beneficial for many, but

	Yes	No	Explanation
			some still struggle with its application.
Students are able to explain how to use the AI tools employed	45	55	Only 45 out of 100 students were able to explain how to use the AI tools, while 55 students still needed assistance. This indicates that many students still require guidance in using AI effectively.
There is the use of AI-related tools (hardware/software)	70	30	70 out of 100 students reported using AI-related tools (hardware/software), while 30 students did not. This shows that most students use laptops or similar devices, though not all have access or use them regularly.
Students provide feedback on the effectiveness of AI usage	55	45	Feedback varies, requiring further analysis.
There is collaboration among students in using AI	40	60	Collaboration is still minimal, with students often working individually.
Tutors provide clear guidance on the use of AI	75	25	Guidance is generally good but occasionally lacks detail.
Average (%)	57%	42,7%	

These results provide a general overview of the challenges and opportunities in implementing AI among UT students and can serve as a basis for developing better strategies for integrating AI into learning (Owoc, 2021; Rahayu, 2023). The overall calculation shows that, on average, 57.3% of students are engaged in various aspects of AI usage in learning, while 42.7% are not fully active or face obstacles.

The results of the checklist-based observation were followed by direct interviews conducted with 20 Universitas Terbuka students. To enhance student participation in discussions involving AI, it is essential to create an inclusive and supportive classroom environment (Salas-Pilco, 2022),where students feel safe to share their opinions. Tutors should provide emotional support and gradually encourage shy students to speak (White, 2022; He, 2024). Implementing collaborative learning techniques can help students share ideas in small groups before speaking in front of the class. AI can also be utilized to facilitate discussions, such as by generating group-specific questions. Providing positive feedback to participating students and offering effective AI usage training can boost their confidence (Brandon, 2021; Delfino, 2019). Additionally, icebreaker activities involving AI can help students feel more at ease before the discussion begins (Verma, 2011).

Furthermore, AI intervention can enhance the readiness of UT students to face the challenges of the Society 5.0 Era. On the second indicator, data revealed that

some students use AI applications to support their assignments and presentations. However, there is also an awareness of the importance of maintaining creativity and avoiding over-reliance on technology. The data indicates that students need to balance the use of AI applications, such as Grammarly and ChatGPT, with the development of creativity and critical thinking (Vincent-Lancrin, 2020; Reddy, 2022; Rong, 2022). They should set boundaries for AI usage, such as limiting it to grammar checks or generating initial ideas (Bonner, 2023). Additionally, students are encouraged to independently explore ideas before utilizing AI and to participate in creativity training programs (Eapen, 2023; Ivcevic, 2024). Reflecting on AI usage is also essential to evaluate its impact on the learning process and outcomes achieved (Pretorius, 2023; Bozkurt, 2023).

Positive interactions between students and tutors regarding AI were observed, with tutors providing guidance and sharing their experiences. However, students expressed a desire for more concrete examples to enhance their understanding. The interview results indicate that students should request tutors to provide more concrete examples of AI utilization during learning, even though interactions between students and tutors are already positive (Escalante, 2023; Hutt, 2024). Tutors can continue offering guidance and sharing personal experiences, but incorporating practical examples would better assist students in addressing challenges when using AI.

Students' enthusiasm for using AI is relatively high; however, they recognize the importance of gaining a deeper understanding to effectively utilize AI in learning. The interview results indicate that both students and tutors need to enhance their deeper understanding of effectively using AI in learning (Kashive, 2020; Markus, 2024). While enthusiasm for AI is high and new applications can accelerate the learning process, deeper learning will ensure the optimal utilization of AI to improve material comprehension.

The use of AI generally helps students better understand the material, although there is still a need for direct guidance from tutors in certain cases. The interview results indicate that students should utilize AI for additional explanations and quick access to information, but they must also rely on tutor guidance to grasp deeper concepts. This combination will help them better understand challenging materials.

The readiness of Universitas Terbuka (UT) students to face the challenges of the Society 5.0 Era through AI utilization is also reflected in the interview results**.** Based on the research data, only 45 out of 100 students were able to explain how to use the AI applications they employed. This indicates that while some students possess a basic understanding, a majority (55 students) still require further guidance in effectively navigating AI features. Students also acknowledged that several features remain unexplored, and additional training would be beneficial to enhance their comprehension. Moreover, many reported that some features remain unclear and that they often feel confused by application updates. Follow-up actions may include organizing additional training sessions facilitated by tutors to help students understand new features of frequently used AI applications. Regular briefings on application updates should also be provided to ensure that students stay informed and up to date. Additionally, creating forums or discussion groups is essential as a platform where students can share tips, experiences, and challenges in using AI applications. Additional resources such as online tutorials or instructional videos should be made available to help students independently explore new features (Bye,

2017). Lastly, surveys or evaluations can be conducted to gather feedback from students on the training provided and their future needs regarding AI usage.

Both students and tutors need to ensure the availability of devices (Owoc, 2021), such as laptops and smartphones, to effectively access AI applications. Additionally, maintaining a stable internet connection is crucial, as internet speed can significantly impact the learning process. Tutors are expected to provide support in optimizing the use of AI to make learning more effective.

Students should continue providing positive feedback regarding the use of AI in learning (Hutt, 2024), as AI helps them complete tasks more quickly and efficiently. However, they must remain critical of the information generated by AI, considering the potential for inaccuracies. It is therefore essential to verify information from other sources. Additionally, students should actively seek feedback from tutors, as such input can help them better understand how to effectively utilize AI and improve their learning approaches. In this way, they can enhance their learning outcomes while optimizing AI usage.

Students need to enhance collaboration in utilizing AI by engaging in more group activities that involve discussions and shared learning (Ito, 2021; Kueper, 2024). Although they already share experiences and discuss AI applications, more structured collaboration could help deepen their understanding. Tutors are also encouraged to facilitate more group activities involving AI, allowing students to learn from one another and develop collaborative skills. This approach will enrich and broaden their learning experiences, making them more comprehensive.

Overall, AI intervention has significant potential to enhance the readiness of UT students in facing the challenges of the Society 5.0 Era. However, further efforts are needed in providing training, fostering collaboration, and deepening the guidance provided by tutors to ensure that the utilization of AI becomes more optimal and effective in the learning process.

CONCLUSION

Based on the findings and discussions of this research, it can be concluded that AI intervention has a significant impact on various aspects of learning for students in the Islamic Education Study Program at Universitas Terbuka. *First*, AI intervention has a significant impact of 81% on improving students' digital literacy, categorized as a strong/high influence. *Second*, AI helps in overcoming students' digital amnesia with a significant impact of 65.7%, categorized as moderate/fairly strong influence. *Third*, AI intervention also enhances students' readiness to face the challenges of the Society 5.0 Era. This is reflected in students' active participation in discussions involving AI, the use of AI applications in assignments and presentations, and positive interactions between students and tutors. Students demonstrate high enthusiasm for using AI, ease in understanding materials, and the ability to explain the use of AI applications. Additionally, students utilize AI-related tools, provide positive feedback on the effectiveness of AI, and collaborate in its usage. Clear guidance from tutors further supports the optimization of AI usage in learning.

These conclusions indicate that AI intervention has great potential in enhancing digital literacy, addressing digital amnesia, and preparing students to face the challenges of the Society 5.0 Era, although further development is needed in training, collaboration, and tutor guidance.

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Development of ESD - Oriented Google Sites Learning Media to Improve Critical Thinking Skills of Elementary School Students

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Abstract

This study aims to develop a product in the form of ESD-oriented Google Sites learning media to improve critical thinking skills of grade IV students of SDN 05 Indralaya. The type of research used in this study is development with the ADDIE model. The subjects used in this study were class IV A of SDN 05 Indralaya. Data collection techniques used were interviews, questionnaires, tests, observations and documentation. The results of the validation of material experts obtained a percentage of 98.21% with a very feasible category. The validation of media experts obtained a percentage of 90.38% with a very feasible category. The validation of practitioner experts obtained a percentage of 99.07% with a very feasible category. The results of student responses at the individual stage obtained a percentage of 96.53% with a very practical category and at the small group stage obtained a percentage of 97.22% with a very practical category. The N-Gain score obtained was 0.855 with a very high category, thus it can be concluded that the resulting product is feasible to use in learning activities.

Keywords: Climate Changes, Critical Thinking, ESD, Google Sites, Learning Media.

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INTRODUCTION

Critical Thinking can be interpreted as a more detailed thinking process that requires students to improve their ability to present innovative ideas that contribute new perspectives to problem solving, analyze a problem, and find solutions (Ariani, 2020). The critical thinking skills of students in Indonesia are still relatively low. The 2018 Program for International Student Assessment (PISA) showed that Indonesia's literacy scored 382 with a ranking of 64 out of 65 countries in the world. PISA questions include six levels, with level 6 as the highest, but of the six levels, Indonesian students only managed to answer at levels 1 and 2 (Marudut et al., 2020). One of the important 21st century skills is critical thinking skills, where students are required to be able to provide innovative ideas, analyze problems and find solutions to a problem. This makes critical thinking skills very necessary for students, one of which is in elementary school.

Critical thinking can be instilled as early as possible by utilizing learning media, because appropriate learning media can help teachers channel information to students properly in accordance with current developments and curriculum demands. The curriculum in the education system plays an important role, because the education process is directed through guidance from a curriculum. The development of the digital era has an impact on changes in the curriculum as a form of adjustment to the times (Uslan et al., 2021). Education for sustainable development (ESD) or Education for Sustainability is a concept developed to systematically understand and transform education systems that promote and instil sustainability in the minds, hearts and actions of the future generation (Suratmi, et al., 2022) An important aspect in the independent curriculum is the integration of the Education for Sustainable Development (ESD) approach which provides opportunities for students to understand and apply sustainable development concepts from an early age. The implementation of ESD at the elementary school level, especially in Indonesia, still faces various challenges, including the lack of learning media that support critical thinking skills in students, so it is vital to develop ESD-oriented learning media to improve these skills, especially among elementary school students (Azzahra, et al., 2023). Education for sustainable development (ESD) is essential as a global education paradigm to help develop attitudes, skills and knowledge (Suratmi, et al., 2022).

Learning media that is appropriate to the century and curriculum demands is very much needed, such as Google Sites learning media. Google Sites is one of the many products presented and developed by Google to create a website (Tambunan & Siagian, 2022). Research on the development of Google Sites learning media has been widely conducted, including by Fadillah Salsabila & Aslam in 2022, in 2023 by Yulia Darniati et al., Hana Lestari, et al. in 2021, one of which was conducted by Wahfidin et al., (2023) with the title "Development of Google Sites-Assisted Learning Media in Thematic Learning Theme 4 Subtheme 1 Class V SDN 11 Pontianak City", with the conclusion that based on the score from the validator, it was decided that Google Sites media was suitable for application during the teaching and learning process in thematic subjects in class V because it was included in the valid and practical category (Wahfidin et al., 2023). The novelty of the research studied by the researcher lies in the Google Sites learning media which is oriented towards ESD (Education for Sustainable Development) and is applied to the Merdeka curriculum.

Researchers found facts in practice, that in SDN 05 Indralaya has never realized the development of Google Sites learning media and is not yet ESD-oriented, this is a driving force for researchers to carry out the development of learning media that can be applied and help in the teaching and learning process in the classroom not only that researchers focus on designing a learning media, namely ESD-oriented Google Sites media that has never been developed before. This media aims not only to improve critical thinking skills and student motivation, but also to instill sustainability values in students from an early age. Google sites are the easiest way for individuals who need information quickly and collaborate with other individuals in adding information that can support learning (Aditama, 2022). The purpose of writing this journal is to describe the procedure for developing Google Sites learning media, describe the feasibility, student responses and test the effectiveness of using Google Sites learning media.

RESEARCH METHOD

This research was conducted at SDN 05 Indralaya with 23 fourth grade students as research subjects. The research method used is research and development. Research and development are an activity that seeks to produce new goods or improve existing goods. This research was conducted in the odd semester of the 2024/2025 academic year. The research procedure refers to the ADDIE model which consists of five stages, namely Analysis, Design, Development, Implementation and the last is Evaluation. The researcher designed and developed an ESD-oriented Google Sites learning media product starting from the analysis, design, development, implementation and evaluation stages. The following is a schematic diagram of the stages of the ADDIE model.

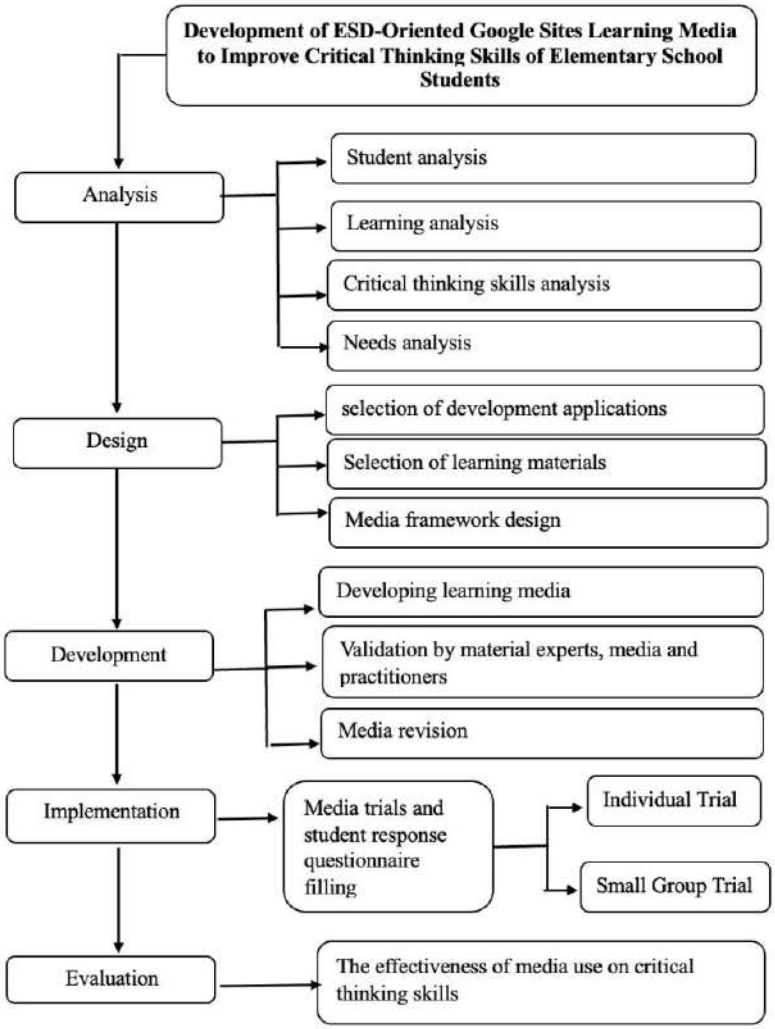

Figure 1. Modification Scheme of ADDIE Model

Data collection techniques used in this study are Observation, Interview, Documentation, Validation Sheet, Student Response Questionnaire and Test. Observation and interviews were conducted at the analysis stage, documentation was conducted at each stage, validation sheets and student response questionnaires were used at the development and implementation stages, tests were used at the evaluation stage. Data collection techniques by observation

include the following indicators, including student involvement in learning, use of learning methods, availability of learning media, application of ESD concepts, student involvement in group discussions, use of learning media and student responses to learning. Observations were conducted directly in class IV A SDN 05 Indralaya.

The next data collection technique is interviews. Interviews with teachers were conducted related to aspects of the curriculum, learning process, critical thinking, school facilities and student characteristics. These aspects consist of several questions that were submitted directly to the class IV A teacher.

Documentation in this study is used in the form of images (photos). This photo was taken using the researcher's smartphone camera. The purpose of documentation in this study is as evidence of supporting data and completeness in the research conducted. The next data collection technique is validation by material experts, media experts and practitioner experts. The grid for validation by material experts, validation by media experts and validation by practitioner experts can be seen in the following Table 1.

Table 1. Validation Sheet Grid for Experts

No.	Aspect	Indicator
1.	Curriculum	Compliance material with curriculum.
		Compliance material with achievement learning.
		Compliance material with objective learning.
2.	Think critically	Practice ability think critical participant educate.
		Give explanation simple.
		Build skills base.
		To conclude.
		Give explanation carry on.
		Setting strategy and tactics.
3.	Material	The material provides convenience in the learning process.
		Serving material.
4.	Language	Using communicative language.
		Grammatical correctness.
		Accuracy spelling.
5.	Appearance	Election background.
		Proportion layout.
		Election fonts.
		Size letter.
		Text color.
		Composition picture.
		Size picture.
		Quality picture.
		selection.
		quality.
6.	Use	Compliance with user.
		Can used independent and guided.
		Instruction uses.

Referring to the grid in the table above, the validation of material experts includes aspects of curriculum, critical thinking, materials and language. Validation of media experts includes aspects of appearance and use. Validation of practitioner experts includes all existing aspects. Then the data collection technique is through student response questionnaires. The grid of student response questionnaires can be seen in the following Table 2.

Table 2. Student Response Questionnaire Grid

No.	Aspect	Indicator	Question No.
1.	Contents of the material	Compliance Contents materials and images.	1
		Convenience in understand material.	2
		Help in develop ability Study.	3
2.	Presentation	Convenience in use.	4
		Instructional Media easy accessed.	5
		Attractive media display.	6
		Clear writing.	7
3.	Linguistics	Language used easy understood.	8
		Sentences used arranged with Good.	9
4.	Reaction user	Feeling happy when using media.	10
		Feeling of enthusiasm when using media.	11
		Not bored when using media.	12

The student response questionnaire is used to see the practicality of the developed learning media. The next data collection technique is a test. The following is a test grid that can be seen in the following Table 3.

Table 3. Test Grid

	Aspect	Indicator	Indicator question
1.	Analyze factor reason change climate.	Give explanation simple.	Given six images, participants educate can analyze picture What only those included reason change climate.
2.	Analyze impact change climate.	Build skills base.	Given a number of statements, participants educate can analyze statement which one is not including impact change climate/ season
3.	Conclude related issues with change climate.	Conclude	Given text reading, participants educate can conclude Contents reading the.
		Conclude Give explanation carry on.	Given An image, participants educate can show correct statement based on picture the.
4.	Analyze role participant educate in prevent change climate.	Setting strategy and tactics.	Given example case about related issues with change climate/ season participant educate can decide What just efforts that can done for prevent related issues with change climate/ season.

Observation Data, Interviews, Documentation, Validation Sheets, Student Response Questionnaires and Tests that have been collected will be analyzed so that they become an answer in a table. This study uses two analysis techniques, namely qualitative and quantitative analysis. Qualitative data analysis techniques,

data are obtained from the results of observations, interviews, documentation and score interpretation. While in quantitative data analysis techniques, data are obtained from material expert validation questionnaires, media expert validation, practitioner expert validation, student response questionnaires and tests.

RESULTS AND DISCUSSION

Results

Analysis Stage

This stage is carried out by analyzing the characteristics of students, student needs and learning. The aim is to determine what products will be developed by researchers. Data collection techniques used at this stage consist of observation, interviews and documentation. Interviews were conducted with class IV A teachers to explore problems, student characteristics and school facilities.

a. Analysis Characteristics Learners
   Based on school documents and interviews with class IV A teachers, it was obtained that the number of class IV A students at SDN 05 Indralaya was 23 students with 9 female students and 14 male students. Class IV A students were aged 10-12 years, which means that students were at the concrete operational stage. The results of interviews with teachers obtained information that class IV A students had varying learning styles, namely 4 students with an audio learning style, 7 students with a kinesthetic and audio-visual learning style and 12 students with a visual learning style. The teacher obtained the results of the students' learning styles from the initial diagnostics at the beginning of the school year so that the interviews conducted by the researcher with the class teacher can be said to be valid.
b. Analysis skills think critically
   Study This measure skills think critical through a number of indicators, such as give explanation simple, build skills basis, conclude, give explanation carry on as well as set strategy and tactics. Each question being tested customized with indicator think critically, with focus on the material climate and its changes. Seasons and climate in Indonesia. There are ten multiple-choice questions given to students, with one indicator consisting of two test questions consisting of pretest and posttest given to students at the field trial stage, this test aims to see the comparison of student scores before and after using google sites learning media, previously the questions have been validated to expert lecturers or supervisors to see the quality of the questions. The following Table 4 presents the results of the initial test of the use of critical thinking skills of students.

Table 4. Skills Results Think Critical

No.	Indicator	Percentage (%)	Category
1.	Give explanation simple.	36	Low
2.	Build skills base.	32	Low
3.	To conclude.	41	Low
4.	Give explanation carry on.	45	Low
5.	Setting strategy and tactics.	48	Low

No.	Indicator	Percentage (%)	Category
	Average	43	Low

Analysis results in a way overall get the average participant educate own percentage by 43% with category low.

c. Analysis learning
The curriculum implemented by SDN 05 Indralaya is Merdeka curriculum. Materials used by researchers as material making learning media is Climate and Its Changes (Seasons and Climate in Indonesia) material.

Table 5. Learning Achievements and Objectives

Achievements Learning	Learning objectives
Related issues with preservation source Power natural as a mitigation effort change climate.	Through activity observing Google Sites learning media, Participants educate can analyze factor reason change climate with correct (C4). 1. Through activity observe material on Google Sites learning media, participants educate can analyze impact change climate with right (C4). 2. Through activity discussion, participants educate can conclude related issues with change climate (C5). 3. Through activity observe material on Google Sites learning media, participants educate can analyze role participant educate in prevent change climate with correct (C4).

d. Analysis learning media needs
Based on analysis that has been done implemented previously, then Can concluded that learning media is needed that utilizes technology such as Google Sites learning media. Based on matter said, researchers in the study This will developing ESD -oriented Google Sites learning media for increase skills think critical participant educate.

Design Phase

Stage design This researcher as developer need designing in accordance with what is being researched. Stage design This aiming use to design developed products researcher based on analysis that has been done implemented researcher. Activities carried out at this stage This namely researcher to design products that include various matter namely choose what type of media will be developed, select material the main thing that will made in media, designing media framework as well to design instrument data collection.

a. Election application
Election application must in accordance with analysis that has been done implemented at the stage analysis. Selected applications use develop learning media This namely Google Sites.

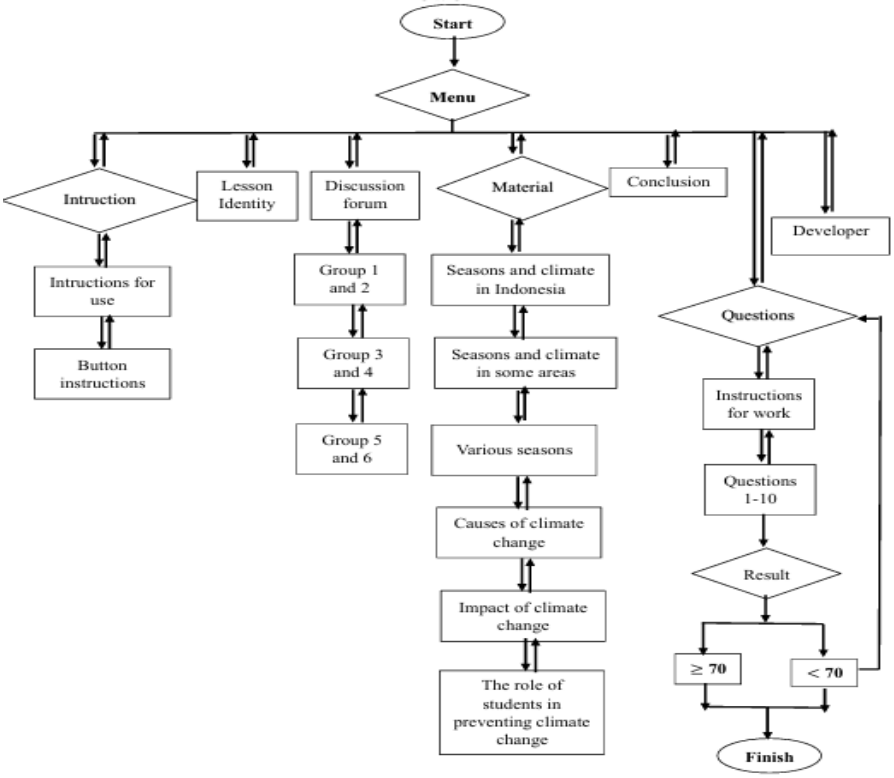

Figure 2. Google Sites Learning Media Flowchart

b. Election material
   Selected material is Climate and Its Changes (Seasons and Climate in Indonesia) material in grade IV. This material chosen Because relatedness with education sustainable or ESD which means material This can help participant educate in understand education sustainable. Participants educate class IV is also in the stage operational concrete which participants educate Still related with object concrete that must be caught by the five senses.
c. Designing media framework
   Developed learning media consists of from eight part, namely part the beginning contains the cover and main menu, the section instruction containing instruction Usage and instructions knob or existing features, parts Lesson identity contains information regarding Lessons such as materials, topics, CP and TP, discussion forum section contains instruction and 6 discussion forums for 6 groups discussion, section material consists of from the materials to be studied by participants educate, the Conclusion section contains the Conclusion regarding learning, part questions containing instruction workmanship question as well as question consists of out of 10 questions choice double and part developer consists of from identity developer.

Stage Development

Stage This involving making as well as validation products that have been developed previously. Researchers at the stage This will create Google Sites learning media that utilizes Google Sites *platform* for explain Climate and Its

Changes (Seasons and Climate in Indonesia) material. after product has finished created, Next steps is evaluating validation through evaluation by experts' materials, media and practitioner.

a. Creating Google Sites Learning Media
   In this Step researcher implement the plan that has been designed previously. This Google Sites Media made through Google Sites platform, Canva and Google Groups.

Table 6. Storyboard Prototypes

Description	Draft Layout
Slide 1. Cover Media Material section Is the cover or home page of the Google Sites learning media containing a background with a rainy atmosphere and two children playing in the rain using raincoats or jackets, the text Climate and its changes. Seasons and climate in Indonesia, the start button to start. When the start button is clicked, it will go to the menu display.	
Slide 2. Menu This is the Menu section that contains the instructions menu, Lesson identity menu, discussion forum menu, material menu, Conclusion menu, questions menu and developer menu, with a background of bright sky and beautiful highway. In the menu, students can go to the desired page or slide.	

b. Google sites learning media validation results
   Result of expert validator assessment materials, media and practitioner has obtained as following.

Table 7. Results of Validation Questionnaire Recapitulation

No.	Component Evaluation	Score obtained	Max score	Percentage (%)	Category
1.	Subject Matter Expert	55	56	98.21	Excellent
2.	Media Expert	47	52	90.38	Excellent
3.	Practitioner Expert	107	108	99.07	Excellent
	Total	209	216	96.76	Excellent

source: processed from results validation materials, media and practitioners

Based on results recapitulation questionnaire validation expert regarding ESD -oriented Google Sites learning media, it was found percentage by 96.76%.

Percentage interpreted in category eligibility so percentage the enter in "Excellent" category.

Implementation Stage

At this implementation stage, a concrete process occurs to apply the learning tools that have been prepared by the researcher. This means that the learning tools that have been designed and validated by experts will be tested on class IV A students of SDN 05 Indralaya. This testing is carried out in two stages, namely individual trials and small group trials. Individual trials are carried out individually in class IV A at SDN 05 Indralaya, this trial involves 3 students. The selection of students is carried out by considering different levels of cognitive ability. The purpose of this individual trial is to find out the shortcomings that may exist in the ESD-oriented Google Sites learning media, the product is implemented by students using the product individually. The second trial stage involves small group trials. At this stage, the researcher selects 6 students, who have diverse cognitive abilities. This small group trial aims to identify shortcomings that may exist in the ESD-oriented Google Sites learning media. The product is implemented by students using the product in groups. After the trial was conducted, students were asked to fill out a student response questionnaire on the ESD-oriented Google Sites learning media. This step was taken to evaluate student responses to the products that had been developed by the researcher. After obtaining the assessment results from students during individual and small group trials, the researcher then compiled a recapitulation of the assessment in the form of a table. The results of this recapitulation can be seen in the Table 7 below.

Table 8. Results recapitulation questionnaire response participant educate

No.	Component Evaluation	Score obtained	Maximum score	Percentage (%)	Category
1.	Individual Trial	139	144	96.53	Excellent
2.	Small Group Trial	280	288	97.22	Excellent
	Total	419	432	96.99	Excellent

source: processed from results questionnaire response participant educate

Based on the results of the recapitulation of student responses to the ESD-oriented Google Sites learning media, a percentage of 96.99% was obtained. This percentage, if interpreted into the practicality category, is included in the "Excellent" category.

Evaluation Stage

This evaluation stage aims to assess the extent to which the developed learning media is able to improve students' critical thinking skills. This evaluation process can occur at each stage described previously, where it is called the formative evaluation stage. The goal is for improvement needs, at the development stage the assessment results from expert validators, including material experts, media and practitioners stated that ESD-oriented Google Sites learning media are suitable for application in learning activities, but with the note that improvements are needed in several aspects so that the resulting product can be better. field trials involving 13 students in class IV A SDN 05 Indralaya who were not included in individual or small group tests with the aim of avoiding material bias that might occur due to

previous trials. at this stage, researchers carry out learning activities in full according to the learning plan that has been prepared in the learning module. The following are categories of completion of the objectives of the IPAS learning in the Table 9 below.

Table 9. Categories of criteria for completion of science learning objectives

Mark	Category
90-100	Very Good
80-89	Good
70-79	Enough
0-69	Need Guidance

Data source: SDN 05 Indralaya documents

Based on the table above, researchers can group the pretest and posttest scores obtained by students based on the categories in Table 9. The results of the students' pretest and posttest are based on the learning objective completion criteria which can be seen in the following Table 10.

Table 10. Pretest and Posttest Results

No.	Name	Pretest	Category	Posttest	Category
1.	AAG	70	Enough	100	Very Good
2.	ASR	20	Need Guidance	80	Good
3.	DTS	50	Need Guidance	90	Very Good
4.	FR	40	Need Guidance	90	Very Good
5.	HA	50	Need Guidance	90	Very Good
6.	LSA	40	Need Guidance	100	Very Good
7.	MAB	40	Need Guidance	100	Very Good
8.	MAS	50	Need Guidance	90	Very Good
9.	MRR	40	Need Guidance	100	Very Good
10.	AM	50	Need Guidance	90	Very Good
11.	KA	60	Need Guidance	90	Very Good
12.	MRAW	60	Need Guidance	90	Very Good
13.	MDAH	40	Need Guidance	90	Very Good
Amount		610		1200	
Average		46.92		92.31	
Lowest Value		20		80	
highest score		70		100	
Value ≥70		8%		100%	
Value <70		92%		0%	

Data source: processed from pretest and posttest results

It can be seen in the table above that the average pretest score was 46.92 with 8% of students achieving a score of ≥70. The average posttest score of students was 92.31, reflecting an increase from the pretest score with 100% of students achieving a score of ≥70. Based on this, overall, it shows that the use of ESD-oriented Google Sites learning media is effective in helping students achieve a score of ≥70 in the posttest activity.

After analyzing the pretest and posttest scores, the researcher then analyzed the effectiveness of ESD-oriented Google Sites learning media on students' critical thinking skills. The assessment was measured using N-Gain based on students' pretest and posttest scores, as shown in Table 11.

Table 11. N-Gain Score Calculation

No.	Name	Results		N-Gain	Information
		Pretest	Posttest		
1.	AAG	70	100	1	High
2.	ASR	20	80	1	High
3.	DTS	50	90	0,800	High
4.	FR	40	90	0.833	High
5.	HA	50	90	1	High
6.	LSA	40	100	1	High
7.	MAB	40	100	1	High
8.	MAS	50	90	0.800	High
9.	MRR	40	100	1	High
10.	AM	50	90	1	High
11.	KA	60	90	0.750	High
12.	MRAW	60	90	1	High
13.	MDAH	40	90	0.833	High
Average		46.92	92.31	0.855	High

Data source: processed from pretest and posttest scores

Table 10 shows that the N-Gain score from the pretest and posttest activities of students is 0.855 which is included in the high category. Based on this, it can be concluded that ESD-oriented Google Sites learning media is effective to be applied during learning activities, this is because this media can help students understand the concept of Climate and Its Changes (Seasons and Climate in Indonesia) material.

Discussion

Researchers developed a product in the form of learning media called ESD-oriented Google Sites learning media, which aims to improve critical thinking skills of students in elementary schools. The development of this learning media is based on the needs of students and teachers. The trial of this learning media was carried out on grade IV A students of SDN 05 Indralaya. The process of developing Google Sites learning media uses the ADDIE model which includes five stages, namely analysis, design, development, implementation and evaluation. The stages in the ADDIE model play an important role in ensuring the quality and effectiveness of ESD-oriented Google Sites learning media.

This research starts from the analysis stage with the aim of finding what products will be developed by the researcher. At this stage, the researcher conducts an analysis of the characteristics of students, analyzes learning that includes learning achievements and learning objectives, analyzes critical thinking skills which also include indicators of critical thinking and the need for learning media. This activity was carried out through interviews and observations with teachers at SDN 05 Indralaya in September 2024.

The second stage carried out by the researcher is design (design stage). In this stage, the researcher designs a product that contains various things, namely choosing what type of media will be developed, choosing the main material to be included in the media and designing the media framework. The researcher decided to use the platform, namely Google Sites, as a means of developing media. Google sites were chosen because they are easy to use and can be used without limitations of space and time. It can create enthusiasm in students in the learning process, because the media is interesting and not boring.

The material chosen by the researcher is the Climate and Its Changes material in the Science subject. The selection of this material aims to instill the value of sustainability in education today and in the future. Based on this, learning media is needed that can form awareness of sustainable education for students. After selecting the application or platform and material, the researcher then designed the framework of ESD-oriented Google Sites learning media in the form of a flowchart and storyboard layout.

The third stage carried out by researchers is development. At this stage, researchers make products and validate products that have been developed. The context of Google Sites learning media is made according to the design that has been determined in the previous stage. After the product is complete, the next step is validation by material experts, media and practitioners. The results obtained by researchers after carrying out validation with material expert validators were 98.21%. Selsabila and Pramudiani (2022) stated that the percentage value between 98.21% is included in the feasible category. The results of the media expert validation were 90.38% with a very feasible category.

Reflecting that every aspect of the Google Sites learning media has received a positive assessment, both in terms of appearance and use. Indicating that the media format, fonts, images and videos are appropriate and do not interfere with other components and provide an attraction to students. The last validation from the practitioner validator got 99.07% with a very feasible category. Reflecting that all aspects of the Google Sites learning media have met the standards, both in terms of material and design. Based on this, it can be concluded that the ESD-oriented Google Sites learning media is very appropriate or feasible to be used in the learning process.

The fourth stage carried out by researchers is implementation. At this stage, researchers tested the Google Sites learning media that had been validated and revised based on input from expert validators. The trial was carried out involving class IV A students of SDN 05 Indralaya. The trial was divided into two stages, namely individual and small group trials. The results of student assessments in the individual trial were 96.53%, which according to Warahmah et al., (2022), is included in the very practical category. The next trial, namely the small group trial, the percentage was 97.22%, also included in the very practical category. This finding is relevant to a study conducted by Fadillah Salsabila & Aslam (2022) entitled "development of Google Sites web-based learning media in elementary school science learning". The percentage of student responses obtained was 92% in the very practical category.

This research ends with an evaluation (evaluation stage). This stage can occur in every stage that has been explained previously, this is called the formative evaluation stage. The goal is for improvement needs. The development stage, the

results of the assessment from expert validators including material experts, media and practitioners, concluded that the ESD-oriented Google Sites learning media is feasible to be applied in learning activities with the note that improvements are needed in several aspects so that the resulting product can be better.

This field trial stage is included in the evaluation stage because at this stage the researcher can see whether the learning media developed by the researcher is effective in improving students' critical thinking skills. In this field trial, it was found that the N-Gain score was 0.855. According to Darniati et al., (2023) the N-Gain score is included in the high category. This means that the ESD-oriented Google Sites learning media developed by the researcher is effective in improving students' critical thinking skills. This finding is in line with the views of Ma'rifah and Mawardi (2022) and Azizah et al., (2021) who stated that the use of learning media can improve students' critical thinking skills. Based on this, it can be concluded that the ESD-oriented Google Sites learning media is effective in improving students' critical thinking skills.

CONCLUSION

ESD -oriented Google Sites learning media developed with the ADDIE model for increase skills think critical participant educate Grade IV SD on the topic of Climate and Its Changes. The development process covering analysis characteristics and needs participant education, media design, development products validated by experts material (98.21%), media experts (90.38%), and practitioners (99.07%). All of them in very worthy category. Implementation done through trial individuals (96.53%) and groups small (97.22%), which shows that this media is very practical for used in learning. Evaluation effectiveness done through trial field against 13 participants educate, produce N-Gain score of 0.855 in category high. This result proves that Google Sites ESD -oriented learning media is effective in increase skills think critical participant educate as well as feasible and practical for applied in activity learning.

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The Effect of Reading Literacy and Emotional Intelligence Toward Students' Learning Outcomes at Silih Nara Elementary School Aceh Tengah District

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Abstract

The research aims and focuses on analyzing the effect of reading literacy and Emotional Intelligence toward the learning outcomes of fifth-grade students at SD Negeri 7 Silih Nara, Aceh Tengah Regency. The research methodology used is quantitative study which conducted in the fifth-grade students of SD Negeri 7 Silih Nara, Aceh Tengah Regency. The research instrument used in this research was test. The data was collected from the test of reading literacy and test of Emotional Intelligence. The data was analyzed by using inferential analysis T-test The inferential analysis utilized multiple regression analysis and hypothesis test with T-test, and F-test (ANNOVA). Data processing was performed by using SPSS Version 23. There were two result findings found based on the result of T-test and F-test (ANNOVA). The first result finding of T-test showed that reading literacy has significant effect toward the students' learning outcomes that showed by sig value was 0.000 (<0.05), but emotional intelligence does not have the effect toward the students' learning outcomes (0.163 (>0.05)). The second result finding of F-test (ANNOVA), the reading literacy and emotional intelligence analyzed together has significant effect toward students' learning outcomes. The Sig value obtained was .000[b]. It means that hypothesis was accepted.

Keywords: Emotional Intelligence, Reading Intelligence, Learning Outcomes.

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INTRODUCTION

Based on Law Number 20 of 2003, education is not merely a teaching and learning process, but a comprehensive effort to fully develop students' potential. The goal of education is to shape individuals who are not only intellectually capable but also possess strong character, noble morals, and are prepared to face future challenges. Therefore, education serves as a vital long-term investment for the nation's progress.

National education in the 21st century carries a noble purpose: to create a prosperous and dignified Indonesian society on the global stage. To achieve this goal, education must focus on developing high-quality human resources equipped with knowledge, skills, and noble values. Graduates are expected to contribute actively to nation-building and to face the challenges of the era with confidence and

competence (Indahri, Y, 2021). Therefore, to reach that purpose, the students should be prepared their competences to face the challenge.

To achieve quality education and favorable outcomes, it is not enough to rely solely on policy concepts and written government regulations without practical application. The Indonesian Minister of Education and Culture (Kemendikbud) has implemented the 2022 curriculum, widely known as the "Merdeka Curriculum." This curriculum emphasizes essential content and provides students the freedom to choose subjects according to their interests (Goleman, D, 2020). Consequently, in the learning process, students are not only expected to develop cognitive intelligence but also to enhance and nurture their emotional intelligence to face future challenges in learning and life (Aristiani, A, 2021).

In addition, students must motivate themselves to enhance their skills and develop a strong desire to read learning materials from various sources (Abidin et al., 2018). Learning today can take place anytime and anywhere due to the abundance of learning resources, both in print and electronic media. This means that teachers are no longer the primary source of knowledge (Aini et al., 2021).

In connection with a study conducted by Central Connecticut State University on March 2016 on reading interest, Indonesia ranked 60th out of 61 countries. This indicates the reading interest and culture among Indonesians are very low. This aligns with findings from the International Educational Achievement study, which revealed that reading literacy of Indonesian elementary school student ranked 38th out of 39 countries. These findings are further supported by data from the Central Statistics Agency (BPS), which states that most Indonesians prefer watching television and listening to the radio over reading magazines or newspapers (Kemendikbud, 2017).

In improving the human resources quality, government promotes school literacy through various programs, including efforts to foster students' reading interest. One such initiative is the "15-minute reading program," where students read non-academic books before lessons begin. The reading materials emphasize local cultural values, character education, and the development of noble morals. Schools are also encouraged to provide well-stocked libraries to attract students and implement programs like "one student, one book" (Adam, A, 2018). These programs aim to boost students' interest in reading, as extensive reading is believed to enhance their knowledge, broaden their horizons, and ultimately improve their academic performance (Faradina, N, 2017).

Some prevoius study were done related to the factors which influence the students' learning outcomes. The first study was done by Nazraini, L., & Anas, N (2022). The result of her research showed that the students' learning outcomes were influenced by internal factors such as; intelligence and students' reading interest. The second research was held by Amri, S., & Rochmah, E (2021), the finding found that students' reading literacy was higher influenced the students' learning outcomes. They said that the students who have high reading lliteracy, have high learning outcomes.

Based on the author's observations at SD Negeri 7 Silih Nara, it was found that students at this school exhibit a notably low interest in reading, as evidenced by their average exam scores. This lack of reading interest has led to limited knowledge and a shallow understanding of academic material. In addition, students' emotional intelligence levels are also low, resulting in diminished motivation to engage in learning, difficulties in self-regulation, and challenges in building positive

relationships with peers and teachers. Many students also experience feelings of inferiority, leading to a lack of confidence in expressing and developing their personal potential. Furthermore, fifth-grade students often rush through their studies and demonstrate weak analytical skills.

The purpose of the study is to examine the influence of: (1) reading literacy on the social studies learning outcomes of Grade V students at SD Silih Nara, Central Aceh Regency; (2) emotional intelligence on the social studies learning outcomes of Grade V students at SD Silih Nara, Central Aceh Regency; and (3) reading literacy and emotional intelligence simultaneously toward the social studies learning outcomes of fifth grade students at SD Negeri 7 Silih Nara, Central Aceh Regency.

RESEARCH METHOD

This study is descriptive quantitative research aimed to describe the characteristics of students' literacy, emotional intelligence, and learning outcomes. Additionally, it seeks to statistically examine whether there is a significant relationship between literacy and emotional intelligence with students' social learning outcome. Regression analysis would be employed to measure the extent to which each variable influences learning outcomes (Syahrizal, H., & Jailani, M.S, 2023). The research population consists of all students of SD Negeri 7 Silih Nara, totaling 57 individuals. Since population is fewer than 100, total sampling is used as the sampling technique. Data collection technique was gotten from observations, questionnaire, test and documentations as research instruments. For questionnaire, the measurement scale applied was the Likert scale. Questionnaire was designed to investigate the items of Reading Literacy (pre-reading, while-reading, and post-reading) and Emotional Intelligence which consisted of 4 items such as recognizing own feelings, recognizing others' feelings, the ability to motivate own self, and the ability of emotional control). The questionnaire used in the study was analyzed by validity and reliability tests. While test was used to measure the students' learning outcome. Then, all data analysis was performed inferentially, utilizing multiple regression analysis. Prior to applying regression, prerequisite tests such as normality, homogeneity, and multicollinearity tests were conducted. For hypothesis test, T-test and F-test were employed. Data processing was measured by using SPSS Version 23.

RESULTS AND DISCUSSION

Result

The collected data from the questionnaire and interview form were analyzed descriptively, and the data from the result of students' social learning outcome test was analyzed quantitatively by using SPSS version 23. Based on the data analysis, the findings found as follows:

Variable Descriptive

According to the results of questionnaire and interview form about the variable Reading Literacy (X_1) and Emotional Intelligence (X_2), there were found that the level of respondents' achievement both of the variables could be described deeply.

The Reading Literacy Variable

The result of the students' answer from the questionnaire, it was found that the level of respondents' achievement in reading literacy could be shown in the table below:

Table 1. Conclusion of the Frequency Distribution of Reading Literacy Variable

No	Statements	Mean Score	TCR
1	Pre-Reading Activities	23,65	78,83
2	Reading Activities	18,77	74.33
3	Post-Reading Activities	11,47	76,49
	Total Score	20,63	**76,55**

Based on Table 1 above, it showed that the result of the respondents' achievement in Reading Literacy variable, which consists of three indicators, was explained as follows: The first indicator, pre-reading activities, consists of six (6) statement items with an average score of 23.65 and a respondent achievement level of 78.83, which falls under the "adequate" category. The second indicator, reading activities, also consists of six statement items, obtaining average score of 18.77 with a respondent's achievement level of 74.33, which is classified as "adequate." The third indicator, post-reading activities, consists of three statement items, achieving an average score of 11.47 with a respondent's achievement level of 76.49, which also falls under the "adequate" category. Overall, the Reading Literacy variable obtained an average score of 20.63 with a respondent achievement level of 76.55, classified as "adequate."

The Emotional Intelligence Variable

The result of the Emotional Intelligence variable showed the respondent achievement level could be seen in the table bellows:

Table 2. Conclusion of the Frequency Distribution of Emotional Intelligence Variable

No	Statements	Mean Score	TCR
1	Recognizing Own Feelings	3,37	67,48
2	Recognizing Others' Feelings	3,15	68,77
3	The Ability to motivate own self	3,47	68,77
4	The Ability of Emotional Control	4,28	64,21
	Total Score	3,56	67,30

Based on the table 2 above, it could be discussed that the Emotional Intelligence variable, which consists of four indicators—recognizing own feelings, recognizing others' feelings, the ability to motivate own self, and the ability of manage emotions—has an overall average score of 3.56, with a respondent achievement level of 67.30, which falls within the "sufficient" criterion. The lowest criterion is in the ability to manage emotions, with a score of 64.21, also falling under the "sufficient" criterion, while the highest respondent achievement level was found in the indicator of the ability to motivate own self, with mean score was 3.47 and TCR score was 68.77, which also falls within the "sufficient" criterion.

Inferential Test

The data which found from the students' social learning outcome test was analyzed by using SPPSS version 23. However, before the data was analyzed by using inferential test, both variables of reading literacy and emotional intelligence should be analyzed the normality and homogeneity test firstly.

Normality Test

Based on the data analysis, it was found that the normality of the variables could be pointed in the following table:

Table 3. the Result of Normality Test

Variables	Asymp. Sig (2-tailed)	Explanation
Reading Literacy (X_1)	0.055	Normal
Emotional Intelligence (X_2)	0.169	Normal

The table above showed that both independent variables (Reading Literacy and Emotional Intelligence) and dependent variable (students' learning outcome) have the normality test of the data distribution.

Homogeneity Test

According to the result, it was gotten that the homogeneity of the variables showed in the table below:

Table 4. the Result of Homogeneity Test

Variables	Levene Statistic	df1	df2	Sig	Explanation
Reading Literacy (X_1)	2.953	1	1.12	0.88	Homogen
Emotional Intelligence (X_2)	3.874	6	79	0.275	Homogen

The table above pointed that both variables (reading literacy and emotional intelligence) and students' social learning outcome have homogeneity.

Multiple Regression Equation

After the data were analyzed the normality and homogeneity tests, then the next step was the data was analyzed by using Multiple Regression Equation Analysis. Based the analysis, the result could be shown in the following table:

Table 5. The Result of Multiple Regression Equation Analysis

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig
	B	St. Error	Beta		
(constant)	51.194	6.411		7.985	.000
X1	.642	.053	.859	12.134	.000
X2	.004	.048	.006	.091	.928

The formula of Multiple Regression Equation Analysis was:

$$51\ 1945 + 0{,}642X_1 + 0{,}004X_2$$

The constant value obtained was 51.194, it means if independent variables are zero (constant), dependent variable would have a value of 51.194. The regression coefficient of variable X_1 was positive (+) at 0.642, which indicates if variable X_1 increases, the dependent variable (Y) will also increase, and vice versa. The regression coefficient for variable X_2 was positive (+) at 0.004, meaning that if variable X_2 increases, dependent variable (Y) will increase too on the contrary.

Hypothesis Test

T-Test

To prove effects of each independent variable, namely Reading Literacy (X_1) and Emotional Intelligence (X_2), on the dependent variable, Learning Outcomes (Y), the results could be shown on the table below:

Table 6. T-Test

No	Variables	T-Value	Sig	Explanation
1	Reading Literacy	12.134	0.000	Significant
2	Emotional Intelligence	0,91	0.928	Not Significant

According to the table above, it could be explained the significance value (Sig) for the Literacy variable was 0.000 (< 0.05), which indicates it has significant effect on students' learning outcomes. Meanwhile, for the Emotional Intelligence variable, the Sig value is 0.928 (> 0.05), which suggests that it does not have significant effect on students' learning outcomes.

F-Test

In order to measure the effect of independent variables (X_1, X_2) simultaneously toward dependent variable (Y), a simultaneous test was conducted using SPSS Version 23 with the following multiple linear regression equation:

Table 7. Table of Anova

Model	Sum of Square	DF	Mean of Square	F	Significance
Regression	1008.813	2	504.407	77.282	.000[b]
Residual	352.450	54	6.527		
Total	1361.263	56			

According to the ANOVA table above, it was shown Sig value was 0.000 (<0.05), it means independent variables (Literacy and Emotional Intelligence) have significant effect simultaneously on dependent variable (students' learning outcomes). It means null hypothesis (Ho) was rejected, and alternative hypothesis (Ha) was received.

Discussion

Based on the results of analysis and hypothesis testing described above, regarding the influence of independent variables on the dependent variable, it was found that

among the three proposed hypotheses, only the first hypothesis—related to the reading literacy variable (X1)—was empirically supported. In contrast, the second hypothesis concerning the emotional intelligence variable (X2) showed no significant effect on learning outcomes, meaning the hypothesis was rejected. However, the third hypothesis, which examined the combined effect of reading literacy and emotional intelligence, revealed a significant influence on learning outcomes. Therefore, it can be concluded that emotional intelligence alone does not significantly impact the students' learning outcomes, but it does when combine with reading literacy.

The hypothesis testing revealed that reading literacy (X1) has a positive and significant influence on students' learning outcomes. This conclusion is based on statistical tests using the *t*-test and significance test, which showed a significance value of $0.000 < \alpha$ (0.05), with an influence magnitude of 12.134. This indicates that for every 1% increase in reading literacy, student learning outcomes are expected to improve by 12.134%. Thus, the more reading literacy is enhanced, the greater the improvement in students' learning outcomes.

The results of the above analysis align with the findings of Mantahir, A., & Hamsiah, M.M (2019), who stated that literacy-based learning positively influences student achievement; in other words, literacy can enhance academic performance. This is also consistent with the study by Nuryanti, R (2019), which found that literacy programs contribute to improved learning outcomes. Their research, conducted within the context of Indonesian language instruction, demonstrated that students' literacy skills can significantly impact their academic performance across various subjects.

This is in line with the opinion of Sari, M.Z., et al (2020), who stated that the relationship between reading literacy and student learning outcomes is highly influential. The higher the level of reading literacy, the better the students' academic performance is likely to be.

The second result showed that the results of hypothesis testing indicate that the emotional intelligence variable (X2) does not have a significant influence on students' learning outcomes; in other words, the proposed hypothesis is rejected. This conclusion is based on the results of the *t*-test and significance test, which showed a significance value of 0.163 (> 0.05) for the emotional intelligence variable. Therefore, it can be concluded that emotional intelligence does not significantly affect students' academic performance.

This result is related to the statement of Anwar, A., et al (2023), emotional intelligence is the ability of an individual to recognize their own feelings and those of others, to self-motivate, to manage emotions effectively, and to build relationships with others. According to (Sulastyaningrum., et al 2019), students' emotional intelligence can assist them in coping with learning challenges and in interacting positively with their surrounding environment.

The last result showed that based on the results of hypothesis testing using the F-test, it was found that the reading literacy variable (X1) and the emotional intelligence variable (X2) together have a significant influence on students' learning outcomes. The significance value obtained was 0.000 (< 0.05), indicating that the independent variables—literacy and emotional intelligence—jointly have a significant effect on the dependent variable, which is student academic performance. Although emotional intelligence (X2) did not show a significant effect when tested individually, its influence becomes significant when analyzed in

combination with reading literacy, as shown by the joint significance value of 0.000 (< 0.05).

From the explanation above, it can be seen that the independent variables—reading literacy and emotional intelligence—have a significant influence on students' learning outcomes when analyzed collectively. However, when each independent variable is tested separately, the results show that emotional intelligence does not significantly affect the students' learning outcomes, leading to the rejection of the emotional intelligence hypothesis. In contrast, the reading literacy variable demonstrates a significant and positive effect on students' learning outcomes, confirming the validity of its hypothesis.

CONCLUSION

Based on the result findings showed above, the researcher could conclude that Reading literacy has a significant impact on the students' learning outcomes at SD Negeri 7 Silih Nara, Central Aceh Regency. Reading literacy plays a vital role in the learning process and directly influences students' academic performance. This skill encompasses not only technical reading abilities but also the capacity to comprehend and analyze information. Students with strong literacy skills tend to achieve better academic results. Factors such as access to reading materials, book borrowing habits, and school support contribute to the development of literacy. Enhancing reading literacy enables students to expand their knowledge and critical thinking skills, making it essential to foster a strong reading culture among students. While emotional Intelligence (EQ) does not have a significant effect on the learning outcomes of students at SD Negeri 7 Silih Nara, Central Aceh Regency. While emotional intelligence is considered important in education, its direct impact on academic performance is not always significant. Although it supports students in managing stress and building interpersonal relationships, other factors—such as motivation, teaching methods, and a supportive learning environment—may have a greater influence on learning outcomes. Therefore, it is essential to consider a comprehensive range of factors that affect academic achievement. However, 3). Emotional intelligence and reading literacy together have a significant effect on the learning outcomes of students at SD Negeri 7 Silih Nara, Central Aceh Regency. Both reading literacy and emotional intelligence contribute jointly to students' academic performance. Reading literacy enhances comprehension and the ability to analyze information, while emotional intelligence helps students manage their emotions and interact effectively with others. The combination of these two factors creates a more conducive learning environment, which in turn supports improved academic achievement.

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The Influence of Parents' Democratic Parenting Patterns on Students' Memorizing the Qur'an

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Abstract

This study aims to investigate the effect of democratic parenting on students' achievement in memorizing the Qur'an. It specifically explores how parenting styles characterized by support and autonomy contribute to children's motivation, concentration, and consistency in Qur'anic memorization. Employing a quantitative approach with a survey method, data were obtained from 87 students of Islamic boarding schools and their parents using structured questionnaires. The data were analyzed through simple linear regression to determine the relationship between parenting style and memorization outcomes. The findings reveal that democratic parenting has a statistically significant positive influence on students' success in memorizing the Qur'an. Parents who practice open communication, provide emotional support, and engage their children in decision-making processes tend to enhance the consistency and intrinsic motivation of their children in memorization. These results underscore the importance of external factors, particularly parenting styles, in reinforcing students' internal perseverance and religious commitment. The study suggests that educational institutions and religious educators implement targeted parenting programs to promote effective democratic parenting practices in support of students' religious learning, particularly in Qur'anic memorization.

Keywords: Democratic Parenting Patterns, Memorizing the Koran, Parenting Patterns, Role of Parents

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INTRODUCTION

Islamic religious education has very important aspects (Nabila, 2021), not only including a conceptual understanding of Islamic teachings, but also includes activities that must be carried out in daily activities. Apart from that, another important aspect of Islamic religious education is memorizing the Koran. Memorizing the Koran is one step to get closer to Allah and to know more about His teachings (Azlansyah & Sriyanto, 2021). Memorizing the Qur'an is not just memorizing verse by verse but also understanding the meaning of each verse of the Qur'an in order to achieve the noble goal of memorizing the Qur'an itself (Firmansyah, 2019); (Kosim, 2020); (Najizah, 2021); (Siradjuddin et al., 2021).

The aim of memorizing the Al-Qur'an is to establish the Al-Qur'an as a very valuable reading and can bring rewards in every letter for those who read it (Sholihah & Kartika, 2018). This statement explains that the main purpose of

memorizing the Qur'an is to gain reward and gain a position with Allah. After understanding the purpose of memorizing the Al-Qur'an, memorizers of the Al-Qur'an must also pay attention to the process of memorizing the Al-Qur'an which requires persistence, patience and high dedication in the process (O'Brien et al., 2020; Geffen, 2021). However, apart from the process of memorizing the Qur'an, memorizers of the Qur'an also need supporting factors, namely internal factors or within a person and external factors or factors from outside a person. Such that emphasized by (Nasution et al., 2024) that memorizing the Al-Qur'an requires several supporting factors.

The first supporting factor is internal factors or factors within a person. Internal factors are psychological factors originating within the individual (Mutakin, 2021). Factors that originate from within a person include emotional, cognitive, self-perception and motivation (Hanif & Barokah, 2025). This factor can significantly influence a person's interest and focus, especially when it comes to memorizing Al-Qur'an. The second factor is external factors or factors from outside a person (Herman et al., 2022; Hidayat & Nizar, 2021; Kadek, 2022; Syafrin et al., 2023; Tiarma Fitri Br. Malau et al., 2024). External factors also play an equally important role. Specifically, the important role of external factors is that they are able to have a strong influence, especially on the development of a person's interests, however, their influence is not always consistent (Febryanti et al., 2024). Likewise, memorizing the Al-Qur'an really requires the important role of external factors, one of which is parental parenting. Parents are the first and foremost container for the growth and development of children (Saetban, 2020). Children, first learn to know and understand life, both individually and socially, through parenting patterns (Firdausi & Ulfa, 2022).

Parenting is an interaction between parents and children, where parents have the opportunity to guide children towards maturity according to community norms through education, guidance and discipline (Wibowo & Oktafira, 2024). Hurlock groups parenting patterns into several types, one of which is democratic parenting patterns. Democratic parenting is a parenting style that prioritizes a balance between freedom and (Fathia et al., 2023). Parents who use this parenting style will give children the opportunity to express their ideas and make their own choices but still provide the help and support they need. On the other hand, democratic parenting has a different impact on children (Dhiu & Fono, 2022) including in terms of discipline, motivation, and involvement in religious matters such as memorizing the Al-Qur'an. Apart from that, democratic parenting is an effective parenting pattern and has a big influence on a child's abilities (Novita & Nopriansyah, 2024).

Several studies have confirmed that effective parenting is characterized by a democratic style in which parents provide emotional support, consistent guidance, and clear direction, all of which contribute to the development of children's potential and character (Adpriyadi & Sudarto, 2020). This is consistent with the findings of Maulida, (2023), who reported a significant positive influence of democratic parenting on students' achievement in mathematics at SDN Sudimara Timur. Similarly, (Liandari et al., 2020) found a significant relationship between parenting style and the ability of children to memorise the Qur'an at Sekolah Tahfidz Al-Qur'an Ruhama, Bogor. (Wirareja & Sa'adah, 2023) also showed that parental involvement influences children's success in Qur'anic memorization.

Although previous research has explored the influence of parenting styles on Qur'an memorization, few studies have specifically examined the role of democratic parenting in supporting memorization outcomes at Islamic elementary schools. This study aims to address that gap by focusing on democratic parenting and its contribution to students' Qur'anic memorization achievements at MI Tahfizh Al-Furqon Ponorogo. The novelty of this study lies in its attempt to systematically analyse the link between democratic parenting and varying memorization results among students in a formal Islamic education setting, an area that remains under-researched.

Democratic parenting is selected as the central focus because it is considered a critical factor in shaping the consistency and motivation of children in memorizing the Qur'an. A supportive home environment, characterized by mutual respect, positive communication, and parental involvement, is believed to play an essential role in enabling students to meet or exceed their memorization targets. Therefore, this study seeks to provide empirical evidence on how this parenting style supports memorization outcomes and contributes to students' religious development.

Although previous studies have explored the impact of parenting patterns on students' Qur'an memorization, this study focuses on analyzing democratic parenting patterns that support students' memorization efforts, which has not been widely explored in the context of MI in Indonesia. Democratic parenting, which emphasizes open communication, emotional warmth, and structured guidance, is believed to significantly contribute to the development of discipline and motivation in children two traits essential in memorizing the Qur'an. Effective parental democratic parenting is a key factor in the success of students' Qur'an memorization. Therefore, this study aims to analyze how this factor is managed and contributes to the achievement of Qur'an memorization goals in MI Tahfizh Al-Furqon Ponorogo. This research is important because it highlights how parenting style, particularly democratic approaches, can be optimized as an educational support strategy. MI Tahfizh Al-Furqon Ponorogo is a unique institution that integrates formal primary education with intensive tahfizh (Qur'an memorization) programs. The school is known for producing students who achieve high memorization targets at an early age. This uniqueness makes it a valuable case for examining how parenting, especially of the democratic type, influences memorization outcomes. By focusing on this context, the study seeks to provide new insights and practical implications for both educators and parents in similar educational environments.

MI Tahfizh Al-Furqon Ponorogo was selected as the research site because it offers a distinctive educational programme that integrates Qur'anic memorization with formal elementary education. Students at this school are expected to achieve structured memorization goals each semester, starting from the early grades. Preliminary observations reveal that students demonstrate various levels of achievement: some meet the targets, others fall short, while several surpass the expected memorization milestones. These differences raise questions regarding the external factors that influence students' performance, particularly parental support and parenting style (Sholihah & Kartika, 2018). For this reason, the study holds practical significance for educators and parents in understanding how parenting can contribute to achieving memorization targets more effectively.

RESEARCH METHOD

This study employed a quantitative approach using a survey method. As stated by (Susanto et al., 2024), the survey method enables researchers to obtain a precise and representative depiction of the characteristics of a given population. The survey was designed to assess the correlation between democratic parenting styles and students' Qur'an memorization achievements.

The research was conducted at MI Tahfizh Al-Furqon Ponorogo, a private Islamic elementary school located in Ponorogo Regency, East Java, Indonesia. The institution was purposively selected due to its strong emphasis on structured Qur'an memorization as a core element of its curriculum, making it a relevant setting to explore the influence of parenting styles on students' memorization outcomes.

The target population consisted of all parents of students enrolled at MI Tahfizh Al-Furqon, totaling 183 individuals. The sample size was determined using the Slavin formula at a 5% margin of error, where "n = sample size"; "N = total population"; and "e = margin of error (0.05 in this case)". Substituting the values into the formula:

$$n = \frac{N}{1 + N(e)^2} \quad (1)$$

$$n = \frac{183}{1 + 183(0{,}05)^2} \quad (2)$$

$$n = \frac{183}{1 + 183(0{,}0025)^2} \quad (3)$$

$$n = \frac{183}{1 + 183(0{,}0025)} \quad (4)$$

$$n = \frac{183}{1 + 0{,}4575} \quad (5)$$

$$n = \frac{183}{1{,}4575} \quad (6)$$

$$n = 125{,}57 \quad (7)$$

The sampling in this study was a random sampling technique, where each parent of the student was given the same statement. The statement comes from two variables of parents' democratic parenting style (X) and the dependent variable is memorizing the Al-Qur'an (Y). The relationship between these variables can be illustrated through the following Figure 1.

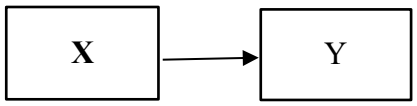

Figure 1. Constellation Model Between Variables

The questionnaire/questionnaire is a data collection technique in this research which is in Likert scale format to measure two variables. The variables of parental democratic parenting (X) and memorizing the Al-Qur'an (Y) were determined using a 4-point scale modified from a 5-point scale. According to (Hadi, 1991), this modification was carried out to eliminate the weakness of the 5-point scale, namely that there is an ambiguous middle answer category and respondents tend to choose it without consideration. So, the Likert scale used in this research uses four alternative answers, namely score 4 = SS (Very Often), score 3 = S (Frequently), score 2 = KK (Sometimes), and score 1 = TP (Never). Apart from that, this research also used several procedures before distributing the questionnaire. The procedures carried out by the researcher are described as follows: (1) validity test and reliability test of the research instrument, 2) distribution of questionnaires for testing the questionnaire on parents' democratic parenting style and memorizing the Al-Qur'an which consists of 25 statements, (3) distribution of questionnaires that have been validated and reliable to parents of students, (4) Data collection, checking the completeness of the instrument to ensure that all statements are answered and there is no missing data. Next, data tabulation was carried out to calculate the frequency of answers to each statement item related to the variables of parents' democratic parenting style (X) and memorizing the Al-Qur'an (Y). The data tabulation is as follows.

Table 1. Validity Test Results

Variable	Valid	Invalid	Reliable	No Reliable
Parenting Democratic	11	4	15	0
Memorizing Al Qur'an	10	0	10	0

Source: Researcher data processing, (2025)

Based on the following Table 1, there are 15 statements from the variable democratic parenting and 10 statements from the variable Memorizing the Al-Qur'an. The instrument regarding parents' democratic parenting style has 15 questions which are then checked using SPSS, there are 11 valid questions, and the other 4 questions are invalid. However, 4 questions were incorrect, 3 of which had their sentence structure corrected to make them clearer and easier to understand so they could still be included in the questionnaire. So, the final instrument that can be used as a questionnaire for the democratic parenting variable is 14 valid and reliable statements. The instrument for memorizing the Al-Qur'an contains 10 valid and reliable statements so that it can be used as a research questionnaire.

The collected data were analyzed using descriptive statistics to provide a comprehensive overview of the research findings. Subsequently, several statistical tests were conducted to ensure the validity of the data analysis. The Kolmogorov-Smirnov test was employed to examine whether the data followed a normal distribution. A linearity test was applied to assess the presence of a linear relationship between the independent and dependent variables. Furthermore, a simple regression test was conducted to determine the influence of the independent variable, namely parents' democratic parenting style, on the dependent variable, which is students' Qur'an memorization achievement.

RESULTS AND DISCUSSION

This study uses a quantitative survey method involving two variables, namely democratic parenting patterns of parents (X) and the ability to memorize the Qur'an of students (Y). The population in this study were all parents of students at MI Tahfizh Al-Furqon Ponorogo, totaling 183 people. The determination of the number of samples was carried out using the Slavin formula with a margin of error of 5% (0.05), so that the number of samples was 126 respondents. The sampling technique used was random sampling, so that each member of the population had an equal opportunity to be selected.

Data collection was carried out by distributing questionnaires with a Likert scale, which had been tested for validity and reliability. The instrument for the democratic parenting variable consists of 14 valid and reliable statements, while the instrument for the Quran memorization variable consists of 10 statements that are also valid and reliable. Data analysis was carried out using SPSS, including descriptive statistical tests and classical assumption tests to ensure the feasibility of the data in further analysis.

Results

The normality test aims to see whether there are confounding factors in the regression model has a normal distribution (Sahir, 2022). Through the Kolmogorov Smirnov formula, the criteria for decision making is that the data is normally distributed if significance value > 0.05 (Solihah et al., 2023).

Table 2. Normality Test

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		126
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	1.03646761
Most Extreme Differences	Absolute	.069
	Positive	.060
	Negative	-.069
Test Statistic		.069
Asymp. Sig. (2-tailed)		.200[c,d]
a. Test distribution is Normal.		
b. Calculated from data.		
c. Lilliefors Significance Correction.		
d. This is a lower bound of the true significance.		

Source: Researcher data processing, (2025)

The results of the normality test above, primary data has a sig value of 0.200 > 0.05, meaning that the data is distributed normally with the reception area as in the histogram graph in Figure 2.

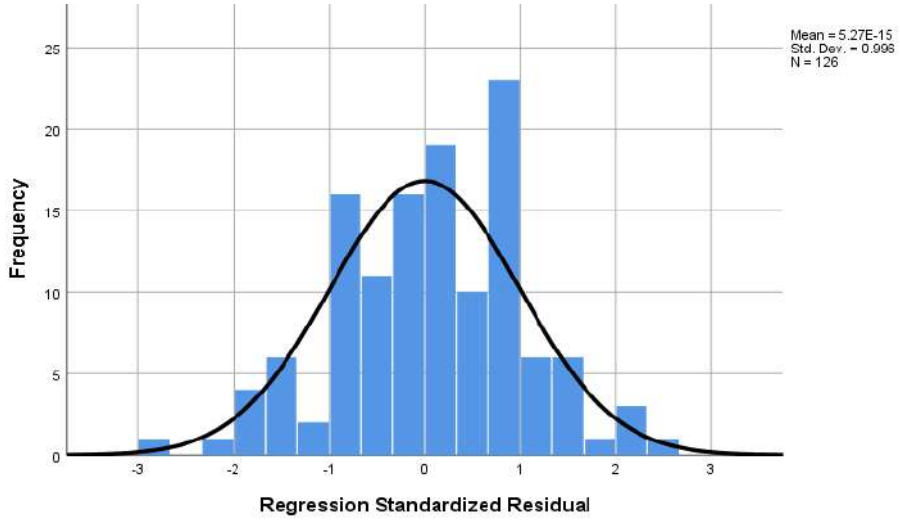

Figure 2. Histogram and Frequency Data on Parents' Democratic Parenting Patterns and Memorizing the Al-Quran

Linearity Test to determine whether transitions in variables cause linear transitions in other variables (Rozaq et al., 2023). This test uses the Test for Linearity with a crucial level of 0.05. If the crucial value of Linearity is <0.05, then the two variables have a linear relationship, and vice versa (Hisbullah & Izzati, 2021).

Table 3. Linearity Test

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
Memorizing the Al-Qur'an* Parents' Democratic Parenting Patterns	Between Groups	(Combined)	87.905	9	9.767	9.706	.000
		Linearity	70.352	1	70.352	69.912	.000
		Deviation from Linearity	17.553	8	2.194	2.180	.034
	Within Groups		116.730	116	1.006		
	Total		204.635	125			

Source: Researcher data processing, (2025)

Based on the results of the linearity test, a significance value of 0.000 was obtained, which is smaller than the threshold of 0.05. This indicates that there is a statistically significant linear relationship between the variables of parents' democratic parenting style and students' Qur'an memorization ability. Therefore, the data meet the assumption of linearity, meaning the relationship between the two variables follows a consistent linear pattern. This condition is essential to ensure the validity of further parametric analyses such as regression testing.

Table 4. Hypothesis Test Results

Coefficients[a]

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.

	B	Std. Error	Beta		
(Constant)	21.252	2.054		10.345	.000
Parents' Democratic Parenting Patterns	.321	.040	.586	8.060	.000
a. Dependent Variable: Memorizing the Al-Qur'an					

Source: Researcher data processing, (2025)

The t-statistical test results obtained were 8,060 > 1.65704 (t-table) at the degree freedom with an error rate of 5%, because the t-count value is greater than t-table then it is said that the null hypothesis is rejected, and the alternative hypothesis is accepted. So through the T test it can be stated that there is an influence of democratic parenting parents (X) by memorizing the Koran (Y). Additionally, calculations using the T test, a sig value was obtained. 0.000 < probability value 0.05. This matter states that the variables studied have a strong influence statistically.

Table 5. Results of Calculation and Testing of the Coefficient of Determination

Model Summary[b]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.586[a]	.344	.338	1.041
a. Predictors: (Constant), Parents' Democratic Parenting Patterns				
b. Dependent Variable: Memorizing the Al-Qur'an				

Source: Researcher data processing, (2025)

The results of the coefficient of determination test, namely the R Square value of the variable parental democratic parenting (X) towards memorizing the Al-Qur'an (Y), obtained a value of 0.344. Shows that parents' democratic parenting style contributes 0.344 x 100% = 0.344 which is equivalent to 34.4% in influencing memorizing the Koran. In other words, most of the variations in memorizing the Al-Qur'an can be influenced by parents' democratic parenting patterns, the remaining 65.6% is influenced by other variables not examined by researchers.

Discussion

Democratic parenting is a parenting approach that balances giving children freedom and implementing clear and directed boundaries. Parents with this parenting pattern provide space for children to express their opinions, participate in decision-making, and have control over the learning process, including memorizing the Quran. However, this freedom remains within the corridor of mutually agreed rules, such as setting study times, memorization targets, and periodic evaluations. The effectiveness of this parenting pattern in the context of memorizing the Qur'an can be seen from the increase in intrinsic motivation, discipline time, and the child's higher enthusiasm for learning. Children who are raised democratically tend to feel appreciated and have responsibility for achieving their memorization targets.

The results of the SPSS calculation show that there is an influence of parents' democratic parenting style on memorizing the Al-Qur'an by 34.4%. This can be seen from parental involvement. Parents have a major role in children's lives. They are responsible for the life, development, education and upbringing of children. Parenting is a way for parents to educate children to have good manners, good

behavior, religious values, independence, respect, discipline and attention to the surrounding environment (Fatimah, 2024). Parenting patterns have been proven to have an influence on children's abilities, as in research (Mentari et al., 2021) that parenting styles have an influence on learning outcomes.

Learning outcomes are greatly influenced by parental parenting (Utami et al., 2022). The parenting style applied at school will have a wider impact, not only on student development, but also on societal harmony and ethical values (Sari et al., 2025). Parental parenting styles can also influence a child's progress, both physically, cognitively, socially and emotionally. The parenting style that has an influence on emotional intelligence according to (Nurjaya et al., 2025) is the parents' democratic parenting style.

Democratic parenting according to Diana Baumrind is a parenting style that involves parents encouraging children to be independent and make their own decisions but still providing clear and consistent boundaries. The aim of democratic parenting is to shape children into individuals who not only obey the rules, but also understand the reasons behind these rules (Erdaliameta et al., 2023). In this way, children will grow up to be individuals who are responsible, independent, and have a good understanding of moral and social values. Apart from that, the democratic parenting style applied by parents will show a warm, responsive and communicative attitude, so that it can have a good effect on the child's development. Through democratic parenting, parents can also improve their children's learning achievements (Kia. & Murniart., 2020).

Likewise, in efforts to memorize the Al-Qur'an, democratic parenting is needed to improve children's memorization of the Al-Qur'an. This can be realized by implementing a democratic parenting style carried out by parents by giving children the right to choose the time and memorization method that suits the child's wishes. There are several steps that parents can take to help children learn to memorize the Al-Qur'an, namely parents can invite children to memorize the Al-Qur'an, parents provide encouragement and motivation when children find it difficult, parents give appreciation for every achievement the child has achieved, and parents create a space that supports children in memorizing the Al-Qur'an (Syatina et al., 2021).

Apart from that, parents also need to provide an understanding of the importance of memorizing the Al-Quran as a means of getting closer to Allah SWT and improving self-quality. This understanding will foster intrinsic motivation in children, so that they memorize the Koran not only because of their parents' demands, but also because of awareness of the benefits for themselves and their relationship with Allah SWT. Democratic parenting patterns provide a real contribution to the achievement of students' memorization of the Qur'an. Children who are raised with this approach tend to be more confident, consistent in learning, and motivated without pressure. For example, parents who make it a habit to discuss with their children about memorization schedules, give simple rewards for achieving targets, or provide spiritual examples in everyday life will create a home environment that supports success in memorizing the Qur'an.

These findings indicate that democratic parenting patterns are not only important in shaping children's character in general but are also effective in supporting religious learning such as memorizing the Qur'an. Therefore, this study is important to conduct in order to provide a theoretical and practical basis for parents and Islamic educational institutions in designing parenting patterns that are

in accordance with children's needs and spiritual demands. Although providing flexibility, democratic parenting still emphasizes the importance of clear boundaries so that children remain directed and do not lose focus. The boundaries in question include setting special times for *murojaah* and memorization deposits, reducing access to distractions such as gadgets during study time, and routine evaluation of memorization progress. These boundaries are not intended to limit children's creativity, but to form productive routines and build disciplined character.

CONCLUSION

Based on the research findings, it can be concluded that parents' democratic parenting style has a positive influence on students' ability to memorize the Qur'an at MI Tahfizh Al-Furqon Ponorogo, with a contribution of 34.4%. This indicates that the greater the implementation of democratic parenting, the higher the students' achievement in Qur'anic memorization. This parenting style is characterized by the freedom given to children in determining their memorization schedule and methods, while still being accompanied by consistent supervision and guidance from parents. A supportive family environment, along with motivation and attention to the child's spiritual development, plays a crucial role in facilitating successful memorization. The implications of these findings highlight the importance of collaboration between educational institutions and parents in creating a conducive learning ecosystem, particularly in religious education. Schools may consider developing programs that actively involve parents, such as training on democratic parenting practices based on Islamic values. However, this study is limited in terms of its geographical scope and sample size, which focused solely on a single institution. Therefore, further research is recommended to broaden the coverage, including comparative studies across various madrasahs or regions, to gain a more comprehensive understanding of how parenting styles influence students' religious learning outcomes, especially in the mastery of Qur'anic memorization.

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Improving Elementary School Students' Learning Outcomes Through the Implementation of the Discovery Learning Model

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Abstract

This research aims to improve students' academic achievement in Catholic Religious Education. The study involved fourth-grade students of SDN Mananga Aba. The study used Classroom Action Research. Multiple-choice test questions were used as data collection instruments. Data analysis included descriptive analysis (i.e., individual completion, class completion), analysis of observation results of teacher and student activities. The results showed an increase from cycle I to II, both in the percentage of class completion (33 to 92) and the average value (63 to 85), as well as the average teacher activity (65 to 97) and students (96 to 96). These achievements indicate that discovery learning improves student learning outcomes. This increase occurred because the researcher made improvements to learning in Cycle II, especially in the teacher's ability to apply discovery learning syntax, and was supported by increased student initiative, motivation, and collaboration during the learning process. The findings of this study have important implications for teachers. They should make greater use of innovative learning models, especially discovery learning, to improve the quality of the learning process and the achievements of elementary school students in Catholic Religious Education.

Keywords: Discovery learning, learning outcomes, Catholic religion, elementary schools.

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INTRODUCTION

The teaching and learning process is the implementation of the lesson plan designed by the teacher. In this implementation, the role of the teacher is crucial in creating and developing learning activities. The teacher's responsibility goes beyond simply delivering the material; they must also motivate students and serve as a positive role model in accordance with their area of expertise (Conradty & Bogner, 2020; Sanusi et al., 2020; Ghamrawi et al., 2024). Teachers have a strategic role in guiding students to internalize values that shape self-identity, ethical foundations, and patterns of social interaction, both in the context of life in the school environment and in their contribution to community life in the long term (Sari et al., 2025). A learning plan is a document that details the objectives, content, methods, and assessments to be applied in the learning process. This planning serves as a guide that directs the course of the teaching and learning process, where both the teacher and students carry out the steps that have been outlined, starting from the opening,

the core activities, to the closing (Botchwey & Umemoto, 2018; Abidah et al., 2020).

The implementation of teaching involves activities that support the achievement of learning objectives, such as the use of media, approaches or methods, and assessments to measure learning success (Hamid et al., 2020; Ilmi et al., 2021). The implementation of teaching is the practical application of what has been planned, ensuring that learning objectives are achieved effectively and efficiently (Simamora, 2020; Tamsah et al., 2021). The lesson plan is not merely a theoretical document, but is translated into actions carried out in the classroom (Flores & Gago, 2020).

Based on the observations conducted by the researcher at SDN Mananga Aba, particularly in the fourth-grade class, it was found that during the religious education lessons, students tended to hesitate to ask questions even when they encountered difficulties or did not understand the material being presented. Despite the teacher providing opportunities for questions, students appeared to struggle with staying focused during the lesson. Additionally, the motivation and interest of the students in religious education seemed to be low, with some students exhibiting irregular attendance in class. It was apparent that the learning activities were predominantly dominated by teacher explanations, followed by question-and-answer sessions and assignments for the students. This one-way teaching approach led to passive student engagement, where students merely received the material and took notes without active participation in the learning process (Vokić & Aleksić, 2020; Sumendra, 2021). The emerging issues have become obstacles that hinder the achievement of the Catholic Religious Education learning objectives at SDN Mananga Aba, ultimately affecting students' learning outcomes.

In light of these issues, it is evident that steps to integrate active learning models into the teaching process are essential. Various teaching models are available, most of which have the potential to enhance Catholic Religious Education learning outcomes. Discovery learning can serve as an effective solution to improve student achievement. This model is implemented to encourage active learning through investigation and discovery by the students themselves, ensuring that the learning outcomes are more durable and retained in students' memory (Prasetya & Harjanto, 2020; Karan, 2023).

According to Jerome S. Bruner as quoted by Surgah (2019), discovery learning is a learning approach that places students as active subjects in gaining knowledge through independent exploration and discovery processes, not through direct delivery by teachers. In line with that, Robert B. Sund as quoted by Rahayu & Mustika (2021) stated that this approach directs students to discover scientific concepts and principles through activities such as observation, classification, measurement, prediction, and experimentation. In line with this view, Robert J. Marzano as quoted by Hosnan (2014) stated that discovery learning can encourage the development of high-level thinking skills because it requires students to analyze, evaluate, and formulate solutions independently in the learning process. In this context, discovery learning helps students understand the content to be learned by obtaining information independently, while also facilitating the construction of the knowledge they have acquired (Simamora, 2020; Siregar et al., 2020), while increasing student creativity (Utomo et al., 2024), which is a very important ability both in the learning process and in solving everyday life problems (Lavli & Efendi,

2024). Therefore, as a solution to the challenges in teaching, teachers can apply the discovery learning model, which not only serves to activate students but also stimulates their creativity and helps enhance their religious knowledge at the elementary school level (Chusni et al., 2021).

Several studies have shown the effectiveness of discovery learning compared to expository patterns in influencing student learning outcomes, such as improving 21st-century skills (critical thinking, communication, collaboration, creativity), even though the communication aspect is higher with the expository method (Putra et al., 2020). What is different in this study is the focus, namely, the cognitive learning outcome score. The mixed-method study using discovery learning showed 14 students in the High category, 38 students in the medium category, and 14 students in the low category. Qualitatively, this study found that the discovery learning method encourages students to engage in active and independent learning and shows high enthusiasm in seeking learning resources (Chusni et al., 2021). What is different in this study is the focus on Catholic Religion subjects and the use of quasi-experimental methods.

A literature study examining the implementation of the Discovery Learning model at the elementary school level concluded that this approach contributed significantly to improving critical thinking skills and student learning achievement. This improvement occurred through the process of integrating critical thinking into learning practices that were in line with the demands of 21st-century learning (Kurniawati et al., 2021). Unlike this study, the current research does not use statistical testing but focuses on analyzing the improvement in students' learning outcomes. A different quasi-experimental study comparing student learning outcomes between discovery learning and other models found the effectiveness of the discovery learning model. The findings of this study were reinforced by hypothesis testing that showed a significant difference in student achievement between the two teaching models. Descriptive data also revealed that students using discovery learning achieved a score of 84.5, while students engaged in inquiry learning scored 78.9 (Lukitasari et al., 2020).

Another study using a literature review method described the impact of discovery learning on elementary school students' mathematics learning outcomes. Interestingly, in this study, each step in the discovery learning process showed different effects on various aspects. For example, the problem formulation stage was found to have significant potential in enhancing students' observation skills, motivation, and critical thinking. Meanwhile, the verification phase was shown to foster skills in drawing conclusions, communication, and group discussions (Kamaluddin & Widjajanti, 2019). However, unlike this study, the present research focuses on the application of discovery learning within classroom action research to improve students' academic achievement.

This study is focused on a scientific examination of the use of discovery learning to enhance students' academic achievement in Catholic Religious Education in fourth-grade elementary school classes. This research can broaden the perspective for Catholic Religious Education teachers. Although this subject has its distinctive teaching methods, such as the catechetical method, this study offers discovery learning as a solution-oriented alternative to facilitate student engagement while simultaneously improving their learning outcomes.

RESEARCH METHOD

This study involves 12 students from the fourth-grade class of SDN Mananga Aba, located in Loura District, Southwest Sumba Regency, East Nusa Tenggara Province, Indonesia. In this context, a classroom action research design (Liana & Hasibuan, 2024) was applied, based on the cycle model described by Kemmis and McTaggart, as cited by Putra et al. (2022) which consists of four stages as shown in Figure 1 below.

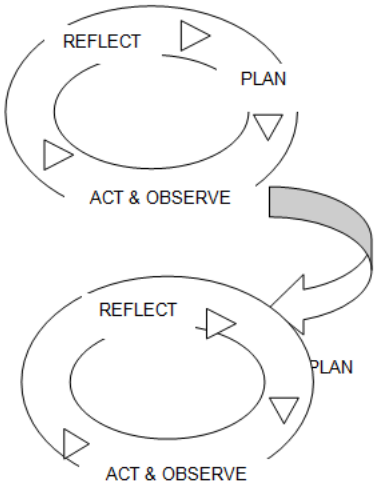

Figure 1. Classroom action research cycle by Kemmis and McTaggart

In the planning phase, the researcher developed lesson plans, organized teaching materials, designed worksheets, created test items for cycles I and II, and prepared observation sheets for both teachers and students. In the implementation phase, the researcher practiced discovery learning for 2 cycles, where each cycle included two learning processes. After the implementation of the cycle, students took a learning outcome test to determine their learning achievements. Observation activities were conducted to monitor the teacher's application of discovery learning and to observe student activities during the learning process. Reflective activities were carried out to evaluate, analyze, interpret, and draw conclusions from the teaching process, serving as a basis for planning actions in the subsequent cycle.

The application of discovery learning refers to the framework proposed by Veermans, as quoted by Fahmi et al. (2019), which includes providing orientation to students, helping students formulate hypotheses, facilitating students to test their hypotheses, encouraging students to conclude, and determining regulations. The research data were collected through observation and tests. The observation technique was used to evaluate the quality of the activities of both the teacher and students during the discovery learning process. The instruments used for observation included observation sheets, provided for both teacher and student activities. Learning outcomes were measured using a test technique, consisting of multiple-choice questions, which were administered at the end of each cycle, with 10 questions in each cycle.

The analysis of student learning outcomes includes individual student completeness analysis, class completeness analysis, as well as the analysis of the teacher's implementation of discovery learning and student activities in processing the learning material. The analysis of observation data on teacher and student

activities, along with the individual student completeness analysis, uses the formula proposed by Suherman (2021) as follows.

$$\text{Mastery} = \frac{\text{Obtained Score}}{\text{Maximum Score}}\ x\ 100 \quad \text{(Suherman, 2021)}$$

The criteria for evaluating the results of teacher and student observations are based on the table provided by Usman et al. (2017), as shown in the table below.

Table 1. Criteria for observation results assessment

Score Range	Category	Qualification
88-100	Very good	Successful
67-87	Good	Successful
46-66	Fair	Not successful
25-45	Poor	Not successful

The class completeness analysis for each cycle is carried out using the formula proposed by Rosna (2018), as follows:

$$\text{Class Mastery} = \frac{\text{Number of Students Mastered}}{\text{Total Number of Students}}\ \text{x } 100\% \quad \text{(Rosna, 2018)}$$

The success indicators are formulated as follows: Students are considered to have achieved learning mastery if they score ≥ 75. The study is considered successful on a class level if 90% of the students achieve this score, and the results of the observations fall within at least the good category.

RESULTS AND DISCUSSION

This research was conducted in two cycles. The theme in Cycle I was "I Am Proud to Be a Man or a Woman and Respect the Belongings of Others," while the theme in Cycle II was "Being Grateful as a Man or a Woman with Abilities and Limitations." The increase in student learning achievement is presented in Table 2 below.

Table 2. Learning Outcomes

Cycle	Complete	Percentage	Highest score	Lowest score	Mean
I	4	33	90	40	63
II	11	92	100	60	85

Based on Table 2 it can be seen that in Cycle I, only 33% of students achieved a score of ≥ 75, with a mean score of 63 and the highest score reaching 90. In contrast, in Cycle II, the percentage of students achieving a score of ≥ 75 significantly increased to 92%, with a mean score of 85 and the highest score reaching 100. Thus, a significant increase occurred from cycle I to II in both the percentage of completion and the average value. The percentage of completion in cycle I was only

33%, increasing to 92% in cycle II, as well as the average value in cycle I of 63 to 85 in cycle II. This means that in cycle I, only one-third of students achieved the success criteria, while in cycle II, almost all students succeeded in meeting the established success criteria.

Table 3. Student Activities

Cycle	Score	Category
I	63	Fair
II	96	Very good

Based on Table 3 the student activity scores in discovery learning for Cycle I and Cycle II were 63 (categorized as Fair) and 96 (categorized as Very Good), respectively. According to the success indicators, the category of student activity success was achieved in Cycle II. The improvement in student activity scores from Cycle I to Cycle II indicates that the discovery learning approach implemented by the teacher became more effective, and students became more engaged in the learning process.

Table 4. Teacher Activities

Cycle	Score	Category
I	65	Fair
II	97	Very good

Table 4 shows that the teacher's activity scores in implementing discovery learning in Cycle I and II were 65 (categorized as Fair) and 97 (categorized as Very Good), respectively. Based on the success indicators, the teacher's activity was deemed successful in Cycle II. The teacher's activity score in Cycle I falls within the fair category, indicating that the teacher's activities in applying the discovery learning approach were considered sufficient, though there is still room for improvement. The teacher's activity score in Cycle II increased to the very good category, meaning that after the first cycle, the teacher made progress in managing the learning process and successfully implemented discovery learning more effectively.

The purpose of this research is to improve the academic achievement of elementary school students in Catholic Religious Education. The results achieved by students show an increase in both the average value and the percentage of class completion, as well as the average value of teacher and student activities, namely from the category of Fair to Very Good. This shows that discovery learning can encourage student understanding and active involvement in classroom activities. The increase is directly related to the characteristics of discovery learning, which makes students active subjects in the process of constructing knowledge through exploration, observation, discussion, and independent problem-solving activities (Saputri et al., 2020; Ott et al., 2021; Febriana et al., 2023). The application of discovery learning in Catholic Religious Education helps students to explore knowledge of faith and strengthen morals reflectively and contextually, not just memorizing concepts (Hariyanto et al., 2023; Wahyuningrum et al., 2024).

This finding is supported by the results of relevant research that uses discovery learning, even though in different contexts and levels of education. Experimental research that examines the improvement of creative thinking in fifth-grade students shows that the average in the discovery learning class is higher than in conventional classes (Putra et al., 2020). Likewise, the same study in junior high schools showed that discovery learning was able to improve students' speaking skills in cycle II (Putra et al., 2022). This shows that this model is not only effective in improving cognitive learning outcomes, but also students' communication and self-expression skills. The same study in grade 7 showed that students' critical thinking can improve because students are facilitated to explore learning resources, increase cooperation, and also be independent in learning (Chusni et al., 2021). Although the levels are different, this is consistent with the findings of this study which show an increase in the ability to understand and evaluate religious values in more depth. Other Classroom Action Research in Natural Science subjects in grade XI of high school showed an increase in analytical thinking skills and science process skills, as well as students' creative attitudes through the application of the discovery learning model (Syolendra & Laksono, 2018). Meanwhile, a study using a literature study method that examined the results of classroom action research in elementary schools also concluded that the discovery learning approach generally contributed to improving learning outcomes, including in Mathematics (Kamaluddin & Widjajanti, 2019). This indicates that this approach is flexible and can be adapted in various subjects and levels of education to encourage better learning outcomes. Based on these findings, discovery learning strengthens student involvement, increases conceptual knowledge, and fosters critical thinking and communication skills. This model is very contextual to Catholic Religious Education learning because it encourages students to discover the meaning of Catholic faith teachings themselves through reflective and contextual learning experiences.

This study has several limitations that need to be considered in interpreting the findings and in applying the discovery learning model to a broader educational context. First, the study was only conducted in one class, namely grade IV, in one elementary school. This contextual limitation implies that the results obtained cannot be generalized to a wider population, considering the differences in student characteristics, learning environments, and school cultures in other places. Second, this study was limited to two cycles of action. Although there was an increase in learning outcomes from cycle I to cycle II, implementation in more cycles could potentially produce a deeper understanding and strengthen the validity of the findings related to the effectiveness of the discovery learning model. Third, the main focus of this study is limited to the cognitive domain, especially the achievement of the average value of students. Meanwhile, the affective and psychomotor aspects, which are also essential elements in Catholic Religious Education, have not received in-depth attention or exploration in this study. The development of spiritual values, moral attitudes, and social skills is very relevant in shaping students' character holistically. Fourth, the relatively short duration of the study was limited to 2 cycles in one semester. This limitation can affect the depth of the implementation of learning and the stability of the increase in students' academic achievement. Fifth, the success of the implementation of discovery learning also depends heavily on class conditions and teacher competence in designing and implementing learning. Factors such as pedagogical skills, classroom

management, and teacher readiness in implementing the constructivist approach greatly influence the effectiveness of the implementation of this model.

The findings in this study have several strategic implications that are relevant for stakeholders to consider in improving the quality of the learning process, especially in Catholic Religious Education in elementary schools. First, for elementary schools, the results of this study indicate that the application of the discovery learning model contributes significantly to improving student learning outcomes. Therefore, elementary schools can use these results as a basis for formulating learning policies that are more in favor of active, participatory, and constructivist approaches. Catholic Religious Education teachers need to integrate discovery learning into their teaching practices to support the improvement of the overall quality of the learning process and outcomes. Second, for the government of Southwest Sumba Regency to use these findings as a reference in formulating strategic policies and programs to improve the quality of elementary education. The results of this study emphasize the importance of organizing professional training and mentoring for teachers in implementing learning models that stimulate student learning activity and independence. The provision of training programs, learning innovation workshops, and the procurement of relevant supporting facilities need to be prioritized so that the discovery-based learning process can be effective. Third, for further researchers: This research provides ample space for the development of research with a broader scope, both in terms of the number of students, the number of action cycles, and the learning process. For further researchers, it is recommended to further explore the effectiveness of the discovery learning model not only from the cognitive aspect, but also the development of students' moral and spiritual values, which are the main focus in Catholic Religious Education. Further research also needs to conduct comparative studies of this model between levels of education or between learning models to gain a more comprehensive understanding of the effectiveness of learning approaches in various contexts.

The results of this study are contextual because they were conducted in one class (grade IV) in one elementary school with a limited number of cycles, namely two cycles. Thus, the generalization of the results of this study cannot be done statistically to the entire population of elementary school students. The findings of this study are not intended to represent all learning conditions in schools, but rather to provide an in-depth understanding of the effectiveness of discovery learning in a particular context. In classroom action research, generalization is more appropriately understood as analytical generalization, namely the application of findings to other situations or contexts that have similar characteristics (Lincoln & Guba, 1985; Miles et al., 2014). Therefore, these findings can be used as a reference by other educators or schools that have comparable student conditions, learning cultures, and environments. This finding is in line with recent research, such as that conducted by Durasa & Jelimin (2023), which shows that the discovery learning model is effective in improving learning outcomes in Catholic Religious Education in elementary school students. Research by Imen (2023) also supports that discovery-based learning can build students' conceptual understanding more deeply and contextually. However, to expand the reach of the findings and strengthen external validity, further studies are needed with a larger population, a variety of school settings, and a longer research period.

CONCLUSION

Discovery Learning model has proven effective in improving the learning outcomes of Catholic Religious Education among Grade IV students at SDN Mananga Aba. The effectiveness of this model is reflected in the significant increase between cycles I and II, both in student learning outcome scores and in the recapitulation of learning activities by teachers and students. The substantial increase in both learning outcomes and student involvement shows that discovery learning can create positive feelings in the learning process, such as feelings of joy and happiness, develop critical thinking skills, encourage active and independent exploration of knowledge, and strengthen cognitive process skills and lifelong learning abilities, facilitate meaningful knowledge construction and deeper understanding of learning materials. This condition is supported by the improvement in the quality of planning and implementation of discovery learning by teachers, especially in cycle II. The learning materials used have also been adjusted to the characteristics of the discovery learning model so that students can be actively involved at every stage of learning. Student participation that is optimally facilitated by teachers also contributes to the achievement of learning objectives effectively. The findings of this study are in line with the opinions of experts who state that discovery learning supports students to actively build knowledge through the process of scientific research and exploration, contributing to the development of high-level thinking skills because it involves students in analysis, evaluation, and formulation of solutions independently during the learning process. These findings also show that discovery learning can be applied as an effective learning strategy, not only in the context of Catholic Religious Education, but also in various subjects and levels of education, especially in fostering and developing higher-order thinking skills in students.

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Development of Smart Lapbook Media to Improve Narrative Writing Skills in Grade V Elementary School

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Abstract

This study aims to develop smart lapbook media as a learning tool to improve the ability to write narrative essays. The method used is research and development (R&D) with the ADDIE model. The subjects of the study were fifth grade students in Deli Serdang Regency, with development stages that included expert validation, limited trials, and effectiveness tests. The results showed that the smart lapbook media met the criteria of very valid based on expert assessments of media, materials and language; very practical based on teacher and student responses; and very effective in improving narrative writing skills as seen from the increase in pretest and posttest scores. This media helps students understand the structure of narrative texts through attractive visual displays, while encouraging student motivation and creativity in writing. These findings indicate that smart lapbook media is an effective alternative learning media in overcoming difficulties in learning to write at the Elementary School level. The implications of this study are expected to be used as an example and developed into a more useful media to create a meaningful learning process.

Keywords: Learning Media, Narrative Writing, Elementary School.

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INTRODUCTION

Language learning is certainly inseparable from language skills. The four language skills in learning Indonesian are listening, speaking, reading, and writing skills. One of the skills that students must have is writing skills. Writing itself is a skill that can be trained and continuously developed (Putri & Devianty, 2024). Writing is not just about composing sentences, from writing activities students are expected to be able to express ideas or concepts, opinions, and knowledge in writing (Oktrifianty, 2021). Writing can be concluded as an activity or process of conveying information, ideas, notions, opinions, or knowledge in written form with the aim of conveying messages to others clearly and in a structured manner.

One type of writing that plays a big role in the development of writing skills is narrative writing. Narrative writing is defined as writing that tells an event or incident in sequence (Fadhillah, 2022). The material for writing narrative essays in Indonesian language subjects expects students to be able to write so that it appears as if the reader saw or experienced the event themselves (Aisah et al., 2024).

The results of initial observations conducted by researchers showed that the level of narrative writing skills of fifth grade students at SDN No. 105323 was still relatively low. Many students had difficulty in composing narrative essays, starting from determining themes, developing ideas, to composing clear sentences and paragraphs. Students also had difficulty in composing stories with a coherent plot, so that students used language that was not in accordance with the context of the narrative. This reflects a gap in the mastery of narrative writing skills, which can affect students' ability to express their ideas and experiences through writing.

Use of Learning Media

Some teachers experience limitations in delivering narrative writing materials, such as conveying structure, storyline, characterization, and creative use of language. These limitations can be overcome by teachers using media in the learning process (Sopiah & Annur, 2024). With the existence of media, it will certainly overcome the limitations of teachers in delivering learning materials and increase students' learning motivation (Panduwinata & Az-Zahro, 2024).

Learning media is a very important factor in improving the quality of learning (Megawati, 2016). If seen from its meaning, learning media is a tool to help students gain significant learning experiences (Sapri et al., 2022). Learning media is also defined as a means or tool used by teachers to deliver material so that the learning process can achieve the desired goals, effectively, efficiently and attractively (Ananda, 2019). Learning media has a very important role in a learning system (Rambe et al., 2022). Media can connect teachers, students, learning resources, and learning materials (Mardianto et al., 2021). Learning media can be physical equipment that is designed in a planned way to convey information and build interactions that include real objects, printed materials, visuals, audio, audio-visuals, multimedia, and the web (Nasution et al., 2023). Media can not only be used to convey all learning materials, but can also provide reinforcement and motivation (Yusnaldi, 2018).

Teachers can use popular media to gain access to educational resources that they can then share with their students (Susanti et al., 2023). Integrating media into the learning process offers students a richer learning experience by engaging multiple senses and giving them the freedom to understand the material (Anas & Hartono, 2024). However, the use of media in learning also needs to be considered and adapted to the material to be taught (Wandini et al., 2020). The use and selection of learning media must be adapted to the characteristics of students in our contemporary era (Rosmiyyah et al., 2023). In addition, educators are also required to be skilled in using learning media, whatever the type of media, educators must be able to use it in teaching and learning activities to improve student learning outcomes (Ningrum & Dahlan, 2023).

The lack of media utilization at SDN No. 105323 is one of the significant challenges in improving the quality of education, especially in developing narrative writing skills. This problem not only occurs at SDN 105323, but also reflects the general conditions at SDN 104231 in similar areas, with limited resources and access to innovative learning media (Aurora & Simanuhuruk, 2024). The results of initial observations conducted by the author showed that students had difficulty in expressing ideas in writing, and most of their compositions were monotonous and had minimal language variation. The low creativity and quality of writing are

caused by the lack of media that can stimulate students' imagination and interest in writing.

In today's digital era, education is required to continue to innovate, including in the use of learning media that support active student involvement and the development of 21st century skills. Therefore, the author offer smart lapbook media so that the learning process can be more interactive and enjoyable. Smart lapbook media is a folding book or portfolio media that can replace worksheets (Latifa & Muryanti, 2022). Smart lapbook media is said to be a type of visual media that is made with images, text, and activity sheets with an attractive appearance in the form of open-close sheets that can be folded (Wulandari et al., 2021). Although smart lapbooks have been used in several previous studies, the development in this study has a novel value, namely it is specifically designed to improve the ability to write narrative essays at the Elementary School level, which is still rarely the focus of previous research. This smart lapbook media is designed so that students' communication skills and learning achievements, especially narrative essay writing skills, can improve (Septiani, 2024).

Based on several theories above, it can be concluded that smart lapbook media isone type of visual learning media in the form of a flip book or portfolio designed to replace worksheets. The advantage of smart lapbook media lies in its ability to present information in a more interesting and interactive form through images, text, and activity sheets that are arranged visually.

This study aims to determine the improvement of elementary school students' narrative writing skills after using smart lapbook media that has been tested for validity, practicality, and effectiveness. The results of this development are expected to help solve problems faced by teachers, so researchers are interested in conducting research entitled "Development of Smart Lapbook Media to Improve Narrative Writing Skills in Grade V Elementary School".

RESEARCH METHOD

This study uses the Research and Development method with the aim of producing a product that has a high validity value which is carried out through a series of research. In this study, smart lapbook learning media will be developed using the ADDIE development model. The ADDIE development model consists of 5 stages, namely the Analysis, Design, Development, Implementation, and Evaluation stages (Sugiyono, 2017).

The first stage carried out in the ADDIE model is Analysis. At this stage, the researcher carries out the assessment process by collecting data and information related to the problems faced by teachers when teaching in class. At the analysis stage, the researcher found that the ability to write narrative essays in grade V of Elementary School is still relatively low.

The second stage is the Design stage. At this stage, the researcher offers a solution obtained through the analysis process. The solution that the researcher offers is by using smart lapbook media when the learning process takes place.

The third stage is Development. The Development stage is carried out to create effective and efficient learning media by seeking validation by expert media validators, material experts and language experts. This is done so that smart lapbook media can be used in delivering content or material in the learning process. Smart

lapbook media developed in accordance with learning theories and principles will be able to facilitate students in achieving educational goals.

The fourth stage is Implementation. After being validated, the researcher utilized the smart lapbook media that had been developed in the previous stage to be tested on students. This stage aims to determine the practicality and effectiveness of the learning media. This stage was carried out in class V of SDN 105323 which consisted of 22 students. This practicality was known from the questionnaire given to teachers and students after using the learning media, while the effectiveness was known through the pretest and posttest based on student learning outcomes.

The fifth stage is Evaluation. This Evaluation stage is the stage carried out by researchers to assess the effectiveness and success of smart lapbook media in improving narrative writing skills. This stage includes pre-test and post-test. Pre-test is conducted to collect data on student learning outcomes before using smart lapbook media. Post-test is conducted at the end of learning to determine the effect of smart lapbook media in improving narrative writing skills.

The subjects in the research development were fifth grade students at SDN No. 105323. The trial was conducted on 22 fifth grade students. The research location is located on Jln. Utomo, Bakaran Batu Village, Batang Kuis District, Deli Serdang Regency, North Sumatra. In this study, researchers collected research data as a support so that the results obtained were more accurate with the collected data. Some of the techniques used by researchers are observation, interviews, questionnaires, documentation.

Observations were conducted to directly observe the process and interactions between teachers and students during learning activities, with the aim of understanding the actual situation and needs that arise in learning to write narratives. The author also conducted interviews with class teachers to obtain in-depth information regarding obstacles, needs, responses, and input in improving the smart lapbook media. Then, a questionnaire was given to students after the smart lapbook media trial to measure the level of practicality, ease of use, and effectiveness of the media in improving the ability to write narrative essays. Furthermore, documentation was used to collect visual evidence such as photos and videos during the learning process using the smart lapbook media, which functioned as supporting data for product evaluation.

RESULTS AND DISCUSSION

Result

The results of the development research that has been carried out by the author produced a learning media product, namely smart lapbook media on narrative essay material. Smart lapbook media as a learning media on narrative essay material that has been developed has been validated by experts and has been tested at SDN No. 105323. The results of the analysis and description that the author did were in accordance with the development research procedure, namely to see to what extent the product developed has met the criteria for validity, practicality, and effectiveness of the media which will be described below.

Smart Lapbook Media Validity Results

The smart lapbook product has been validated by 3 lecturers who are media experts, material experts and language experts. The three lecturers are lecturers at the State Islamic University of North Sumatra Medan who are certainly experts in their fields. The three experts are from the Faculty of Tarbiyah and Teacher Training. In the validation of media experts, the aspects assessed are: Media size aspect, external media design and media content design.

In material validation, the aspects assessed are: aspects of content suitability, aspects of language suitability, aspects of material presentation, and aspects of independent learning.

Meanwhile, in the validation of language experts, the aspects assessed are: Linguistic aspects. The results of the product assessment from the validator in this study are as follows:

Table 1. Assessment of the Validity Level of Smart Lapbook

Valuation	Media Expert Validator	Material Expert Validator	Linguist Validator
Total Score	61	71	44
Maximum Score	65	75	45
Percentage	93%	94%	97%
Criterion	Highly Valid	Highly Valid	Highly Valid

Referring to the assessment results carried out by the media expert validator, namely Mrs. Andina Halimsyah Rambe, M.Pd, there are several things that need to be improved, namely improving the font style and type of paper used in the smart lapbook media, as well as replacing the envelope on the smart lapbook media from paper to cloth.

The results of the assessment carried out by the material expert validator, namely Mrs. Juni Sahla Nasution, M.Pd, suggested several things that needed to be improved, namely improving the use of easy-to-understand language in explaining the structure of narrative essays and providing examples of each term.

The results of the assessment conducted by the language expert validator, namely Mrs. Tri Indah Kusumawati, SS, M.Hum, who provided an assessment through a questionnaire and provided suggestions to improve the language on the smart lapbook media. The results of the validator's assessment suggest several things that must be considered, namely the use of foreign terms by providing italicized writing.

Practicality Level of Smart Lapbook Media

The practicality level of smart lapbook media as a learning medium for narrative essay material can be seen from the student response questionnaire containing responses to the developed smart lapbook media. Student responses consist of several aspects, namely material coverage, presentation, and media suitability, each aspect of which is assessed whether it is good and how easy it is to use.

Table 2. Results of Teacher and Student Response Questionnaire

Valuation	Student Response (22 people)	Teacher's Response
Total Score	993	49
Maximum Score	1100	50
Percentage	90%	98%
Criterion	Very Practical	Very Practical

Based on the table, the results of the student response questionnaire were obtained with a total of 993 with a maximum score of 1100 and a percentage of 90% which had very practical criteria. While the results of the teacher's response obtained a score of 49 with a maximum score of 50 so that it got a percentage value of 98% and got very practical criteria.

Table 3. Comparison of Pretest and Postest Values and N-Gain Test Scores

Test Type	Average
Pretest	48,46
Postest	93,84
N-Gain Score	0,88
Criterion	Very Effective

From the results of the effectiveness test shown in the table above, it can be seen that student scores have increased significantly. Before using smart lapbook media, the average pretest score of students was 25.68. After using the media, the average posttest score increased to 90.77. This increase shows an N-Gain value of 0.87, which is in the high category. So, it can be concluded that smart lapbook media is very effective in improving students' narrative writing skills.

The following is a smart lapbook media design that has been improved according to suggestions and input from the validator:

Figure 1. Outside of Media

Based on Figure 1 above, it can be observed that the exterior of the smart lapbook media is designed attractively and functionally to attract students' attention. On the front there is the name of the media, the title of the material, and the name of the media maker. All of these elements are neatly arranged so that the media display becomes more informative. The title of the material is written clearly to

make it easier for students to recognize the learning focus of the smart lapbook media. Meanwhile, the folds of the smart lapbook media are designed to resemble doors that can be opened to the side, giving an interactive impression and facilitating access to the contents of the inner smart lapbook media.

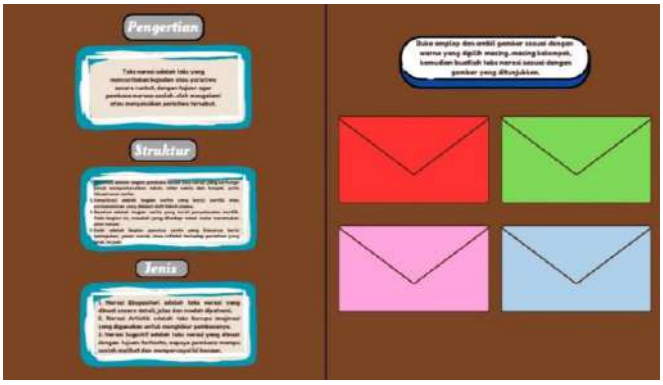

Figure 2. Inside of Media

Based on Figure 2 above, it can be observed that the inside of the smart lapbook media contains an explanation of the material regarding narrative compositions and envelopes of questions designed to train students' writing skills. The explanation of the material is presented concisely and attractively, covering the definition, purpose, structure and types of narrative compositions so that it is easier for students to understand the basic concepts before practicing them. In addition to the material, there are four colored envelopes containing a series of images that illustrate the flow of an event or story. This series of images functions as a trigger for ideas that encourage students to develop stories sequentially based on the sequence of images. Along with the images, worksheets are also included that students use to write down the results of their narrative compositions. Through the presentation of these materials and activities, smart lapbooks help students learn actively, creatively and enjoyably.

Figure 3. Inside of Media

Based on Figure 3 above, it can be observed that the inside of this smart lapbook media is equipped with Student Worksheets. Each group attaches pictures and worksheets from their discussions in the area provided. This media is designed so that each group can convey their work results in turns through presentations. This

smart lapbook media also encourages collaboration, creativity, and students communication skills actively and in a structured manner.

Discussion

These findings support research (Oliviea et al., 2023) which shows that smart lapbook media is very effective in improving speaking skills. However, this study adds that smart lapbooks also support learning to write narrative essays, which has not been widely studied before. This study has quite significant differences with previous studies, especially in terms of language skills which are the focus of the research problem. If in previous studies smart lapbook media was used to improve speaking skills, in this study smart lapbook media was used to improve the ability to write narrative essays. Previous studies have emphasized more on developing students' skills in expressing ideas orally, such as pronunciation, fluency, and intonation. Meanwhile, this study focuses on improving students' ability to express ideas in writing, including aspects of sentence structure, vocabulary use, grammar, and paragraph coherence. Although different in the skills targeted, these two studies have similarities in terms of utilizing media as a tool to improve students' language skills. Both also show that the use of appropriate media can significantly increase students' interest in learning, active participation, and learning outcomes.

Theoretically, the results of this study are supported by a constructivist approach that emphasizes that learning is an active process for students in building their own knowledge based on experience and interaction with the environment. In this theory, knowledge is not seen as something that is transferred directly from the teacher to the students, but rather something that is built personally by the students through active involvement in the learning process (Ramadan et al., 2025). Smart lapbooks provide a forum for students to compose, reflect, and re-arrange ideas independently, thus supporting the development of students' abilities in writing narratives.

The findings of the study showed a significant increase in writing narrative essays, as measured by written tests before and after using the media. The increase was seen in the aspect of the ability to compose a coherent storyline, the use of more varied vocabulary, and the improvement of grammar and paragraph coherence. The average score of students increased from 25.68 in the pretest to 90.77 in the posttest, with an N-Gain value of 0.87 which is included in the very effective category. This indicates that the smart lapbook media not only has a statistical impact, but also has a real influence on improving students' writing skills in the context of learning Indonesian.

The subjects of this study were limited to fifth grade students at SDN 105323, which is a Public Elementary School in Medan City. The selection of this subject is based on the availability of access, the need to improve narrative writing, and the readiness of teachers to support the implementation of learning media. However, this limitation is a note that the results of the study do not reflect the general conditions in other Elementary Schools, both in the city of Medan and in other areas.

The main focus of this media development is for learning to write narrative essays. Other types of text such as descriptive, expository, or procedural are not part of the scope of this study. Thus, the effectiveness of smart lapbook media cannot be generalized for teaching writing other texts. This narrow focus not only

provides clarity of purpose, but also suggests the need for further studies that test the flexibility of the media to other types of texts.

The media trial process was carried out in one semester, namely in the even semester of the 2024/2025 academic year. This duration includes the validation, revision, limited implementation, and evaluation stages of learning outcomes. This relatively short time provides an initial picture of the effectiveness of the media, but does not yet allow for measuring long-term impacts, such as consistent improvement in writing skills or the influence on interest in learning on an ongoing basis.

The development of smart lapbook media is motivated by the need to provide interactive, contextual, and interesting learning media for elementary school students in learning to write narrative essays. The limitations of existing learning media, especially those that do not integrate visual aspects and creative activities, are the main reasons for the need for this innovation. In addition, the ability to write narratives is an important basic skill in learning Indonesian and can support the development of literacy competencies in general.

CONCLUSION

This research is a development research that aims to produce smart lapbook media to improve students' narrative writing skills in Elementary Schools. The development process was carried out systematically, starting from the needs analysis stage, product design, validation by experts, revision, practicality test, to effectiveness test. The validation results showed that the product has very good quality, both in terms of content, design, and language. The practicality test confirmed that the smart lapbook media is easy to use and liked by teachers and students, while the effectiveness test showed a significant increase in students in writing narrative essays covering aspects of content, structure, and language. These findings indicate that the smart lapbook media is a feasible and relevant media in overcoming the low narrative writing skills of students as identified in the initial observation results. Theoretically, this media strengthens the visual media literacy approach in Elementary Schools. Practically, the smart lapbook media has the potential to be applied in project-based learning models and developed for other types of texts or levels of education.

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Implementation of Talking Chips Type Cooperative Model to Improve Student Collaboration in Class X History Learning at SMA Negeri 7 Semarang

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Abstract

This study to overcome the lack of collaboration and student interest in learning history in class X SMA Negeri 7 Semarang by applying the Talking Chips cooperative learning model. The research method used is descriptive qualitative approach, this study collected data from grade X students and 1 history subject teacher for three meetings through observation, interview, Focus Group Discussion (FGD), and documentation. The results showed a significant increase in students' active participation (from 65% to 90%), a change in students' positive perception of history, and the development of critical thinking skills. The Talking Chips model contributes by providing empirical evidence regarding the effectiveness of innovative learning models in improving collaboration and creating a more interactive history learning experience that is relevant to 21st century skills.

Keywords: Cooperative Learning Model, History Learning, Student Collaboration, Talking Chips.

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INTRODUCTION

Education is the main foundation in shaping the quality of human resources, and the learning process is a crucial instrument in achieving educational goals. Law No. 20/2003 on the National Education System emphasizes education as a conscious effort to create a safe, comfortable, and student-centered learning atmosphere, in order to develop their potential holistically, including spiritual capacity, social-emotional intelligence, and other abilities essential for the nation and the individual. In line with Ki Hajar Dewantara's Tri Center of Education philosophy, education is based on three main environments: family, schools and community. Among the three, school plays a role as a formally structured learning environment.

Entering the 21st century, advances in information technology have brought significant transformations in various sectors, including education. Therefore, educational institutions, especially schools, are required to equip the younger generation with 21st century skills known as the 4Cs: Creative Thinking, Critical

Thinking and Problem Solving, Communication, and Collaboration (Almarzooq et al., 2020). Collaboration skills, which are defined as a form of cooperation between individuals to support each other in achieving a common goal, are crucial (Pribadi et al., 2022). Teachers do not only act as knowledge deliverers, but also as facilitators who equip students with learning skills (Hasanah et al., 2022). Collaboration allows students to help each other, share knowledge, and strengthen understanding of the material collectively and individually (Nisa, 2019). The ability to collaborate also encourages students to balance knowledge and opinions, and actively contribute to discussions (Sunbanu et al., 2019).

The subject of history, which is taught from elementary to high schools, has a fundamental role in shaping students' cultural identity, national values, and critical thinking skills (Rohman et al., 2023). Although historical materials are closely related to social, political, and economic conditions, often the availability of materials such a photos, videos and physical artifacts in schools is limited, even though this a challenge and increases students' involvement, cooperative learning models become one of the effective methods.

At SMA Negeri 7 Semarang, observations show that history learning is still dominated by conventional teacher-centered methods. This approach tends to make students passive, less motivated to interact and collaborate, resulting in low interest in learning and unsatisfactory learning outcomes. This condition indicates a gap between the demands of 21st century collaboration skills and existing history learning practices.

One innovation that has the potential to overcome these problems is the Talking Chips type cooperative learning model. Kagan in (Muhammad Fathurrohman, 2015) states that the Talking Chips model is a structural method that fosters close relationships between group members by recognizing common needs. In this model, each student is given a number of chips that are used to speak in discussions, ensuring every voice is heard and encouraging the sharing of ideas and opinions. This technique not only enhance learning but also builds students' confidence in expression. The application of Talking Chips in history learning is expected to train students to collaborate, communicate, negotiate, and work in teams, which in turn will increase motivation and a deeper understanding of historical material (Hasanah et al., 2022; Liang et al., 2023). This model is relevant for equipping students with contemporary skills as it encourages cooperation and utilization of various learning resources, including the environment and technology (Hasudungan, 2021).

Based on the above background, this study aims to analyze the application of Talking Chips type cooperative learning model in improving collaboration skills of grade X students in history subject at SMA Negeri 7 Semarang. It is expected that the results of this study will provide empirical evidence of the contribution of learning models that are more innovative and in accordance with the needs of students in the era of the 21st century.

RESEARCH METHOD

This study uses a descriptive qualitative approach to thoroughly understand the phenomenon of the application of Talking Chips type cooperative model in learning history in class X SMA Negeri 7 Semarang. Based on the definition of (John W. Creswell, 2017) and (Lexy J. Moleong, 2017), descriptive research was chosen to deeply describe students' experiences, interactions and group dynamics, as well as teachers' perceptions related to this learning model.

The main objective of the study is to explore students' engagement, group dynamics, and teachers' perspectives on the use of Talking Chips cooperative learning model in learning history in class X of SMA Negeri 7 Semarang. The research will involve history teachers and grade X students at SMA Negeri 7 Semarang who implement the Talking Chips model. The specific criteria for selecting participants will be explained further in the research methodology.

Data collection is conducted through four stages: participatory observation, interviews, Focus Group Discussions (FGDs), and documentation. Data analysis will be conducted using thematic analysis method. Data collected from these four stages will be transcribed, coded, and categorized to identify patterns, themes, and meanings that emerge from students' experiences, group interactions, and teachers' perceptions regarding the implementation of Talking Chips model.

RESULTS AND DISCUSSION

Students' Experience in Learning History with the Talking Chips Model

Based on the results of in-depth interviews and FGDs with students of class X SMA Negeri 7 Semarang, the following experiences were found in participating in learning history with the Talking Chips model:

a. Active Engagement in Learning

The majority of students (85%) stated that the Talking Chips model encouraged them to be more actively involved in learning history. Based on the results of interviews to find out how students' experiences in participating in learning history with the Talking Chips model, the author obtained findings from several student statements that illustrate this:

> "Previously, I rarely spoke during group discussions. But with this Talking Chips model, I was forced to speak at least 2-3 times according to the number of buttons I have. Gradually I got used to it and became more confident to speak up for my opinion during group discussions." (Student A, Class X-7, Interview, April 21, 2025).

> "I feel that Talking Chips makes learning history more exciting, it is also more effective in working together with friend, although each of them must prepare good arguments before using the buttons/coins that each person has." (Student F, Class X-2, FGD Group 1, April 29, 2025).

The results showed a significant increase in students' active participation, from 65% in the first meeting to 90% in the third meeting. This is in line with research (Muhyidin Nurzaelani & Wibowo, 2015) which emphasizes the relationship

between communication skills and student learning outcomes. The Talking Chips model inherently encourages every student to speak up and contribute to the discussion, ensuring equal participation and encouraging a variety of ideas and opinions. This supports the findings of (Hasanah et al., 2022) and (Liang et al., 2023) which show that this model trains students to collaborate, communicate, negotiate and work in teams. An increase in dynamic and constructive group interactions was also observed, in accordance with the interdependence theory (Johnson & Johnson, 2016) which states that cooperative learning generates positive relationships and individual success correlates with group success.

b. Changing Perceptions of History Learning

Most students (70%) claimed to have experienced a change in perception towards learning history after participating in the Talking Chips model. If they previously perceived history as a boring lesson that relies on memorization, they will get better after learning the Talking Chips model, they consider history as an interesting lesson an encourage critical thinking. Based on the results of interviews to find out whether there is a significant change in perception and how students' impressions of history lessons after using the Talking Chips model, the author gets the findings from students' statements, as follows:

> "Before the Talking Chips model, I thought history lessons were boring, just memorizing and telling stories about events in the past. But after learning with the Talking Chips model, I discuss more about the meaning of historical events and relate them to life today. So, for me personally, the Talking Chips model make more sense and is not boring." (Student I, Class X-2, Interview April 22, 2025).

This change is in line with the findings of (Han & Son, 2020) which states that collaborative learning can increase self-esteem and group cohesion. This can overcome the initial conditions at SMA Negeri 7 Semarang where history learning is still dominated by conventional methods that make students passive and motivated.

c. Challenges in Learning

Although most students had positive experiences, some students (30%) admitted to experiencing challenges in participating in learning with the Talking Chips model. These challenges include a) difficulty in expressing opinions briefly and concisely, b) anxiety because they must speak in front to friends, c) limited time to think about the arguments to be conveyed. Based on the results of interviews to find out how students' experiences at the beginning of using the Talking Chips model, whether there were difficulties. The author obtained findings from several student statements, as follows:

> "At first I felt pressured because I had to speak in front of my friends. I was afraid that my opinion was wrong or not important." (Student N, Class X-7, Interview April 21, 2025).

However, most students who experienced these challenges (70%) admitted that over time, they were able to overcome these challenges and felt more comfortable in participating in learning.

> "I was nervous at first, but after a few meetings, I became more confident. My teachers and friends always, respect my opinion even though it is not always right." (Student N, Class X-2, Follow-up interview, April 29, 2025).

d. Development of Critical Thinking Skills

The results of the analysis of student worksheet documents and observations showed that students experienced progress in critical thinking skills during learning with the Talking Chips model. At the initial meeting, most students tended to express opinions that were descriptive and superficial. However, at subsequent meetings, students began to be able to analyze historical events from various perspectives, identify cause-and-effect relationships, and make critical reflections on the material studied. Based on the results of interviews to find out how this Talking Chips model helps students in understanding history, the author obtained the following findings from student statements:

> "Now I not only memorize that the Diponegoro War happened in 1825-1830, but I also understand the social, economic, and political context behind it. I can even see the similarities with conflicts that occur today." (Student S, Class X-7, FGD Group 1, April 28, 2025).

This is supported by research (Syafrial, 2018) which found that cooperative models are effective in improving critical thinking and cognitive skills. This finding is also consistent with Vygotsky's social constructivism theory, which emphasizes the importance of social interaction in constructing knowledge (Schunk & DiBenedetto, 2020). The improved quality of interaction is in line with research (Widyaningrum & Prihastari, 2018) which shows that the Talking Chips model can improve students' environmental awareness and critical thinking skills.

Increasing students' active participation in history learning has important implications for understanding the material. Students' active involvement in learning can increase knowledge retention up to 90%, much higher than passive learning which only reaches 20% (Mulyasa, 2019). This statement shows that students should actively participate in the teaching process. There are many ways to get involved, such as group discussions, project work, or simulations. With active participation, students will feel more interested and motivated to learn, which can increase students' understanding and enthusiasm for the material being taught. In the context of history learning, active participation allows students to connect historical knowledge with their own experiences and understanding, thus creating meaningful learning. Active participation also plays a role in developing higher order thinking skills. The ability to analyze, evaluate and create which are important components in history learning. This can be seen from the development of the

quality of students' opinions from merely descriptive to more analytical and evaluative.

Student Interaction and Group Dynamics in Learning with the Talking Chips Model

The Talking Chips model proved effective in creating equal participation and improving the quality of interaction within the group. This result is in line with the theory of interdependence (Johnson & Johnson, 2016), which says that cooperative learning methods can produce a positive relationship where individual success correlates with group success.

Equitable participation in groups is essential in learning history which requires diverse perspectives to understand complex events. According to (Hasan, 2019), a comprehensive understanding of history requires interpretation from multiple viewpoints, which is only possible if all students contribute to the discussion. The Talking Chips model provides a structure that forces each student to contribute their opinions, thus creating a richer and more diverse understanding of history.

Improving the quality of interaction in group also has an impact on the development of students' social skills. The ability to listen actively, respect different opinions, and express opinions assertively are important skills in democratic life. In the context of history learning, these skills are very relevant because one of the objectives of history learning is to encourage students to become part of a democratic and participating nation.

The observation showed that the quality of group interaction improved during the implementation of Talking Chips model. At the initial meeting, the interaction between students was still formal and rigid. However, in subsequent meetings, the interaction became more dynamic and constructive. Based on the results of interviews to find out more about students' experiences in learning history with the Talking Chips model, and how it feels to learn using this model. The author obtained findings from students' statements, as follows:

> "I like the Talking Chips model of discussions because we not only talk in turn, but also respond to each other. When my friend expressed an incorrect opinion, I could give corrections in a good way." (Student F, Interview April 22, 2025).

This improvement in the quality of interaction is in line with research (Widyaningrum & Prihastari, 2018), the Talking Chips learning model can improve students' environment care attitude and their ability to think critically. Therefore, this model can have a positive impact on students' affective during learning. Although Talking Chips chows many benefits, some challenges arise in its implementation. These challenges require appropriate adaptation strategies for this model to be effectively applied in history learning.

Time limitation is a major challenge faced by both students and teachers. The adaptation strategies developed by teachers at SMA Negeri 7 Semarang, such as combining the Talking Chips model with other learning models and using technology, show a pragmatic approach that is in line with optimizing cooperative learning models under time constraints. Another challenge relates to students'

readiness to actively participate in discussions, some students' sill experience anxiety and lack of confidence in expressing opinions. This shows the importance of creating a safe and supportive learning environment as emphasized by Dewey in (Richard I. Arends, 2015) that effective learning is only possible in a supportive learning community. The teacher's adaptation strategy in designing structured worksheets and comprehensive assessment rubrics shows a systematic approach in overcoming these challenges.

Teachers' Perception of the Implementation of the Talking Chips Model in History Learning

The change in teacher's role from knowledge delivery to learning facilitator is an important aspect in the implementation of Talking Chips model. This change is in line with the constructivistic learning paradigm that views teachers as facilitators who help students construct their own knowledge.

In the context of history learning, teacher's role as a facilitator allows students to develop a more active and personalized historical understanding. Effective history learning does not simply transfer historical facts, but also helps students to "think like historians", that is, to analyze historical evidence, consider context, and make interpretations (Sam Wineburg, 2015). The teacher's role as a facilitator in the Talking Chips model allows students to develop these historical thinking skills in a more active and independent way.

The implementation of Talking Chips model has changed teachers' perception about their role in history learning. Before implementing this model, teachers tended to position themselves as the main source of information transferring historical knowledge to students. However, after implementing the Talking Chips model, teachers realize their more complex role as facilitators, monitors and guides of the learning process. Based on the results of the interview to find out how Mr. Rifa Irwan Sani, S.Pd. as a history subject teacher, stating that:

> "Yes. I think the use of this method can be a variant in history learning activities. Because what, huh? Actually, if we talk about history learning, it's fun too. Not just the lecture, but there are certain activities. Yes. If we only use, what? Just telling stories, then using PowerPoint, I don't think I'm very interested, but with the Talking Chips, it makes us more varied in learning."

He added:

> "Yes, because it was a chat, yes. So, it is actually to prioritize how the criteria of the students to be able to talk about this material. I think this makes students also think and look for more information, and later they can share it with their friends too. So, we can say that the future is good."

Based on the information data above reflects of the observations that have been made, from this it can be concluded that teachers have a positive perception of the effectiveness of Taking Chips model in learning history. It is important to increase student participation, enhancing critical thinking skills and creating more engaging learning environments. The result is in line with research findings (Firmansyah, 2024) which shows that history teachers have a positive perception of cooperative learning models because it can improve students' understanding and analytical

skills. Despite having positive perceptions, teachers also recognized some challenges in implementing the Talking Chips model. Based on the results of interviews to find out what challenges or obstacles faced in applying the Talking Chips model in learning history, the author gets the findings from Mr. Rifa Irwan Sani, S.Pd. explaining the challenges:

> "Well, they are used to listening. Now we prepare ourselves to position them to master the material first. How do they want to read the book, after reading the book, how do they want to share it with their friends? Yes, the language is, how can you tell stories or gossip, but this gossip is gossip about learning materials. If you gossip, it's fun. But now the well, that's what makes us exciting, yes like that."

The interview data above has challenge in implementing the Talking Chips model, including: 1) limited learning time, 2) difficulty in monitoring all groups simultaneously, 3) the need to prepare complex and interesting discussion materials, 4) adaptation to assessments that focuses more on process than outcome. To overcome the challenges by implementing the Talking Chips cooperative learning model has been proposed as an effective strategy for students' critical thinking during history instruction. The approach involves working together in small groups, so that students can interact and discuss with each other usually between 2 to 4 students. In research (Firmansyah, 2024) in its application, each group member needs to work together to achieve the learning objectives together. Cooperative learning can be applied at various levels of education because of its dynamic and flexible nature, and is not tied to one particular direction. In this context, the teacher functions as a facilitator who guides the teaching and learning process, so that students are more asked to be active and participate during learning (Munawir et al., 2023). Based on the results of interviews to find out how solutions can be applied to overcome these challenges, the author get the findings from Mr. Rifa Irwan Sani, S.Pd. also conveyed his strategy:

> "Yes, we first, yes, keep lecturing first, yes. First lecture first, the approach after that we open book. Heem. They are asked to read first, read, master. We know that literacy in children nowadays is not, we can't read so much right away. We might start three to four paragraphs first. So, from there we ask them to, "Let's tell a story." To his friends how. In terms of, because if you're asked to read three pages, and then asked later, you can't, because what is the character now, huh? They prefer short things, like reading captions, and not long things."

The interview data presented above is also based on observations made during the history learning process. From these observations, it is known that to overcome these challenges, the Talking Chips models can be combined with other learning models, such as using conventional models that still rely on traditional learning methods, such as lectures first to optimize time in reading and mastering the material being taught. Then, using the development of learning media technology to monitor group activities (such a Web school teaching materials for further discussion), designing structured worksheets to guide the discussion, then

developing a comprehensive assessment rubric to assess students' participation and quality of contribution.

The changing role of teachers also has implications for teacher professional development. Meanwhile (Hammond et al., 2017) identified several key elements of an effective professional development model. These collaboration, providing professional direction, and the possibility of retention and thinking. In addition, the duration of the development program should be continuous. It is content-focused that professional development needs to be geared towards teaching strategies related to curriculum materials to support teachers' learning capabilities. Learning that actively engages teachers provides opportunities for them to design and test teaching strategies. In addition, this approach also allows teachers to be directly involved in implementing the plans that have been made (Kasmawati, 2020).

For professional development to work well, collaborative support is essential, allowing teachers to exchange ideas and work together with learning. In addition to supporting collaboration, the use of effective practice models is also necessary. This means that teachers can convey a clear picture of best educational practices. Professional development requires expert guidance and support of expert knowledge exchange systems, through evidence-based content and practice focused on teachers' needs. Ultimately, professional development will succeed over a sustained period, giving teachers plenty of time to learn, apply and implement new strategies, supporting teacher change in their practice.

The Talking Chips model significantly increased students' active participation from (65% to 90% in the third meeting), changed students' positive perception of history (from boring to interesting and encouraging critical thinking), and developed critical thinking skills (from descriptive to analytical). The improvement is in line with previous research that shows a correlation between communication and learning outcomes (Muhyidin Nurzaelani & Wibowo, 2015), increased motivation from cooperative learning (Han & Son, 2020), as well as the effectiveness of cooperative models in improving critical thinking (Syafrial, 2018). This study specifically confirmed the effectiveness of Talking Chips in the context of history learning at SMA Negeri 7 Semarang, addressing the previous issues of low student collaboration and interest. Although the research was qualitative in nature and focused on the specific context of SMA Negeri 7 Semarang, the findings regarding the effectiveness of the Talking Chips model in increasing participation, collaboration, and critical thinking have the potential to be generalized at the principle level. That is, the basic mechanics of the model (e.g., equal distribution of speaking opportunities through buttons/chips) may lead to similar results in other cooperative learning environments. However, direct generalization of specific results (e.g., increased participation rates) to other schools or regions should be done with caution. Successful implementation of this model elsewhere will depend largely on adaptation to the local context, student characteristic and teacher commitment.

CONCLUSION

Based on this research, it can be concluded that the application of Talking Chips Cooperative Model in learning history in class X SMA Negeri 7 Semarang showed very positive results, effectively increasing students' active participation, equal

distribution of group interaction, and quality of discussion. This model also succeeded in changing students' perception of history to be more interesting and encouraged the development of their critical thinking and social skills. In addition, the teacher's role shifts to a facilitator, supporting more active and independent learning. Nonetheless, challenges such as time constraints and student's readiness were successfully overcome by teachers through the adaptation of learning strategies, including the combination of models, the utilization of technology, and the design of structured materials. Therefore, the Talking Chips Model is highly recommended to improve the standard of history education in high school, as it is able to change students' perceptions, develop important skills, and create a more interactive and meaningful learning process.

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Using Artificial Intelligence in Task-Based Language Teaching to Foster Students' Language Skills

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Abstract

The proliferation of Artificial Intelligence (AI) has led to its widespread integration in educational contexts. Its application has expanded across a variety of functions, including essay writing, presentations, and interactive learning tools. Many studies have examined the use of AI in language learning, though few have explored the integration of AI within the Task-Based Language Teaching (TBLT) approach in enhancing students' communication skills. This study aims to investigate the impact of AI on EFL learners by integrating AI technology within the TBLT framework. An experimental study will be used as the research methodology with pre-test and post-test in the control and experimental groups to measure the impact. Additionally, focus group discussion (FGD) and questionnaires will be employed to collect data, examining both the impact and students' perspectives. Researchers will examine (1) the effectiveness of TBLT in enhancing students' speaking skills and (2) learners' perspectives on the method regarding their communication skills. The findings suggest that the integration of AI-based TBLT is effective in improving EFL learners' speaking and communication skills. This research offers insights into AI-assisted language learning and provides practical implications for integrating digital tools in communicative teaching strategies.

Keywords: Artificial Intelligence, TBLT, Language Skill, EFL.

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INTRODUCTION

The Artificial Intelligence (AI) has become an increasingly sophisticated breakthrough, easily accessible for various purposes such as writing essays, preparing presentations, or completing other tasks. There are a lot of research have focused on the general use of AI in the EFL classroom, though only limited studies discuss the integration of AI within the Task-Based Language Teaching (TBLT) approach in enhancing students' communication skills. For instance, AI chatbots are increasingly utilized in language education to simulate conversations, providing learners with real-time feedback and allowing for the practice of speaking skills in a low-risk setting (Kim et al., 2021). This method aligns with TBLT's focus on authentic interaction as it encourages students to engage in dialogue that mimics real-world communication (Bryfonski & McKay, 2019).

This research will specifically elaborate the integration of an AI-based TBLT approach, with a focus not only on improving speaking skills but also on understanding students' perceptions of the effectiveness of this method within real-world learning contexts.

In this digital era, proficiency in communication skills in foreign languages has become crucial amid intense global competition. Previous studies have shown the effectiveness of digital learning such Wattpad or Klipaa.id apps in the EFL Classroom (Khan et al., n.d.; Samosir et al., 2024). Therefore, it is necessary to conduct deeper research into how AI can be leveraged to benefit users, particularly in enhancing literacy, communication, and critical thinking skills within real-life contexts.

Opportunities for practicing English communication or engaging in social interaction remain limited for foreign language learners. Hence, it is essential to allow the students to enhance their oral skills through simple conversations and expressing their opinions or ideas verbally, incorporating real-world scenarios into the classroom. For instance, students can learn how to negotiate, persuade an audience or conversation partner, or demonstrate presentation skills. These communication skills are known as Basic Interpersonal Communicative Skills (BICS).

Furthermore, BICS refers to conversational skills or interaction in the society, such as in informal situations (Baker & Writght, 2017). As mentioned, the environment may not support targeted students in practicing their oral interaction skills. In the workplace context, EFL learners are typically adults who are already employed, thus needing practical activities that offer them opportunities to develop their communication skills through classroom engagements. The Task-Based Language Teaching (TBLT) method includes activities such as group and peer evaluations, games, discussions, videos, descriptions, project planning, and sharing ideas/information, which are designed to develop students' BICS. However, implementing TBLT faces challenges, including limited class time and difficulties in providing adequate feedback and personalization.

Technological advancements, particularly in AI, offer significant potential to support TBLT. This sophisticated breakthrough can be accessed for various purposes such as writing essays, preparing presentation or completing other tasks. AI-generated content also can have significant quality limitation which is always not recommended in writing an essay since they are not original and valid. Also, to avoid misused of AI, Indonesian government released a book guidance related to the attitude towards AI in the classroom. Clearly, AI can create more interactive and adaptive learning experiences, allowing students to practice communication in various simulated contexts and receive immediate feedback.

Despite this potential, the use of AI in TBLT is still relatively new and requires further research to understand how it can be effectively applied to enhance students' communication skills. This research aims to explore the integration of AI within TBLT and its impact on improving students' speaking skills, as well as to identify the challenges and opportunities associated with its implementation in learning environments.

The urgency of this research lies in the compelling need to improve English oral skills among EFL learners so that they are better prepared to face global challenges.

By leveraging AI technology in a TBLT approach, it is hoped that language learning can become more effective and efficient, providing innovative solutions to existing challenges in language education.

This study poses two main research questions: (1) to what extent does AI-based TBLT enhance student' speaking skills? (2) what are students' perspectives towards TBLT in enhancing students' communication skill?

The first primary question concerns the impact of AI-based TBLT on students' speaking skills. Meanwhile, the second intends to explore how students perceive the use of AI in fostering communication skills in EFL learning contexts. Indeed, this research also aims to contribute to academic and practical literature in the development of better English teaching methods and to prepare learners with the necessary skills for success in a competitive work environment.

TBLT and Teaching Methods

Ellis and Shintani (2014) argue that the main objective of TBLT is to enhance students' speaking skills by promoting meaningful communication such as through presentation tasks. Activities are thus designed to foster both language development and content learning (communication in everyday contexts). In this framework, instructors provide tasks or instructions that prompt students to learn both content and language. For example, in the first week, instructors might use videos to demonstrate successful and unsuccessful communication. Students would then analyse key communication factors collaboratively, employing vocabulary and keywords introduced beforehand. This is one instance of how TBLT could be applied within a unit framework.

Furthermore, form-focused instruction is considered an effective strategy to ensure that students can apply material in communicative or social interactions (Lyster, 2007). This approach enables students to practice expressing their opinions supported by evidence or critical analysis through task completion. The use of audio-visual media, such as images and sound, can also be incorporated to positively influence students' learning outcomes (Wahyuni & Nissa, 2023).

Ellis and Shintani (2014) also recommend that instructors scaffold students' participation in conversations using gestures and repetition. Guchte et al. (2016) suggest that repetition tasks can improve learners' accuracy, although they found no significant differences in speaking accuracy and fluency. Nonetheless, prior studies indicate that students who practice repetition in class exhibit significant improvements of the metalinguistic knowledge and accuracy in writing (Guchte et al., 2016).

Lyster (2004) proposes three key aspects of interlanguage such as noticing, analysis and practice which are essential for effectively implementing form-focus instruction in immersion contexts. In this unit, the researcher will implement strategies aimed at enhancing students' accuracy in English. First, students will be given written tasks (fill-in-the-blank) to encourage noticing. This will be followed by diagram presentations and explanations on the use of transitional words for presenting ideas. At this stage, instructors will raise grammatical awareness and guide students to correct their prior task errors (grammar explanation). Subsequently, students will engage in group practice tasks, with instructors providing feedback during this phase. While some argue that form-focused instruction may not be as effective in enhancing productive skills, Rashtchi and

Keyvanfar (2012) that the noticing component within form-focused instruction can significantly support the development of grammatical accuracy in social interaction contexts. Classrooms often represent the sole setting where EFL students can engage in authentic communication through activities or role-play.

Additionally, In accordance with the 4Cs framework proposed by Coyle (2007), this unit brings together content, language, cognitive development, and cultural awareness. Coyle describes this framework through the dimensions of language for learning, language from learning, and language through learning.

Language for learning refers to grammatical structures used to understand the content, while language from learning encompass the specific language or types of questions that arise from engaging with new content. Language through learning involves the development of deeper thinking and communication skills, including activities such as discussions, critical thinking, and looking up new vocabularies in dictionary and noting their definitions. The details of the 4Cs are elaborated in the unit chart and described in the learning objectives and language sections. Cultural awareness will be introduced in select weeks, enabling students to connect with topics and discuss them with peers.

Oral Feedback Mechanisms

Ellis et al. (2006) describe two types of corrective feedback: explicit and implicit. Explicit feedback involves direct comments, information, or questions, while implicit correction may involve repetition, prompting students to rephrase their sentences correctly. In this unit, teachers will employ both types of corrective feedback during tasks and discussions.

They also revealed that metalinguistic explanations, as a form of explicit feedback, is more effective in fostering students' understanding compared to the implicit feedback. In this unit, students will receive both explicit and implicit feedback, including grammar explanations, corrections, and peer evaluations for each topic. However, Harmer (2015) advises against excessive correction of students' errors. Instead, educators should encourage learners to actively practice the productive skills (writing or speaking). Overcorrection may negatively affect students' motivation to learn.

Teachers will also provide written feedback following summative assessments or midweek presentation tasks. Sheen (2007) suggests that written corrective feedback can improve learners' accuracy in both the short and long term. While teacher feedback might not directly enhance students' communication skills, it can facilitate accurate speaking over time. Through these strategies and plans, students are expected to improve their speaking and writing skills while understanding business communication content.

Artificial Intelligence (AI)

Artificial Intelligence (AI) is progressing swiftly, driven by user demands for faster, more accurate task completion. Numerous AI tools now facilitate work and support foreign language learning, including platforms like ChatGPT and ELSA Speak, which can interact with users in real time. These technologies function similarly to messaging apps such as WhatsApp or chatbots, responding to inquiries and commands as directed.

Prior research indicates that AI-based communication can serve not only as a learning tool but also as a means for users to engage in independent, continuous learning (Yan et al., 2024). Additionally, employing this method can enhance students' metacognitive skills as well as their interpersonal abilities.

From a psychological standpoint, EFL learners may feel more confident and comfortable when interacting with AI (Zhang et al., 2024). Mardiah (2022) also found that students these days are literate enough to use the technology which can help them to be independent learners. AI-speaking assistants have also been shown to increase students' willingness to communicate. The fear of making mistakes during language practice in class becomes less significant, allowing learners to improve their language skills without inhibition. In the initial stages, EFL students can use AI to develop their literacy skills, engage in spontaneous question-and-answer sessions, and practice communication. This experience can then be transferred to the classroom in more structured settings with different topics. Ginting et al. (2023) report that students have positive perceptions of using AI as a tool for academic writing. Therefore, AI contributes positively to students' development, both psychologically and academically.

RESEARCH METHOD

This study examines the effectiveness of AI using Task Based Language teaching (TBLT) approach in enhancing English communication skills among EFL learners and to explore their perspectives on this method. Thus, mixed methods research design is employed by conducting an experimental study, group discussion, and distributing questionnaires to students (Liang et al., 2021).

Through an experimental design, recognized by Bryman (2016) for its strength in internal validity, this study aims to compare the performance of students in the experimental and control groups to examine the effect of a specific intervention. In this context, the intervention refers to the use of AI-based Task-Based Language Teaching (TBLT) integrated into the learning process. As noted by Cresswell (2009), experimental research seeks to determine whether a clearly defined intervention produces measurable changes in outcomes. This includes clearly structured components such as participant, instructional materials, procedural steps, and assessment measures.

The participants are 33 EFL learners from English department at Universitas Muhammadiyah Sumatera Utara with in between pre-intermediate and intermediate level.

Research instruments consist of communication skills tests, including both oral and written assessments, to evaluate English communication proficiency before and after the intervention; focus group discussions (FGD) and questionnaires to explore learners' perspectives on AI-based TBLT. The questionnaires are categorized into three thematic areas, such as students' perception of TBLT, challenges and overall impressions. 10 Likert-scale questions (Strongly Agree, Agree, Neutral, Disagree and Strongly Agree) are used to measure students' perspective and 6 open-ended questions are given assisting the students to elaborate their challenge and overall impressions.

The data collection procedures will be started from the preparation stage, which involves designing TBLT-based learning materials integrated with AI. Then, the

pre-test will be conducted to gauge student's communication abilities. Following, the experiment group will be instructed to use AI and enhance their communication skills during 5-week period. Then, the post-test will be used to assessed the improvements, in total this research takes 7 weeks to collect the data. Finally, FGDs and questionnaires will be distributed to understand the learner's perspectives.

To address the primary research question, a quantitative experimental design will be applied and the learners will be divided into control group and the experimental group. In this approach, the researchers will conduct pre-test, treatment and post-test. The tests will analyse students' speaking skill through 5-minute presentation. In the pre-test, the students are asked to describe their chosen book and why the topic is interesting for them. Then, in the post-test, they should make a presentation report related to the translation project that they have completed. In week 1, both groups will have the pre-test and FGD. The treatments will be conducted in the experimental group during week 2 and 5 with different activities for each meeting.

During the treatment, the TBLT consists of 5-week activities, The instructions will allow them to (1) choose the issue for the translation project, (2) Use AI tools to explore the topic in depth and plan the project, (3) update the progress and sharing their experience with peers, (4) use AI to polish the final work and (5) make a presentation. In contrast, the control group will be given the conventional TBLT method without the help of AI as their assistance or polishing their final work.

In the final meeting, the students in the control and experimental group will be asked to make a 7 min presentation, the speaking skill will be measured with the same criteria in the pre-test. Then, the pre-test and post-test in both groups will be compared to measure the significance. Also, FGD will be conducted in both groups to measure their communication skills in general.

To answer the second research question, the discussion in FGD will be analysed to collect the data about their perspective and attitude towards AI or without AI in completing their project. This data will be added to support the students' perspective in the questionnaires. Lastly, the questionnaires will be designed based on three areas, include their perspective on TBLT, the challenges and overall impression. It consists of 10 questions to measure their impression of the TBLT and 6 open-ended prompts to elaborate the three aspects.

Table 1. Research Questions and Data Collection

Research Questions	Data Sources	Metode Analysis Data
Q1: Does the use of TBLT enhance student' speaking skills?	• Speaking Pre-test • Speaking Post-test	Score the speaking's features such as fluency and coherence, pronunciation and vocabulary.
Q2: What are students' perspectives towards TBLT in enhancing students' communication skill?	• Group Discussion • Questionnaire	Collect and classify the data based on categories

Quantitative data analysis is performed using statistical analysis, with t-tests comparing pre-test and post-test results through software such as SPSS. Meanwhile, qualitative data analysis is carried out through thematic analysis questionnaire data and FGDs to identify themes and patterns in learner perspectives.

RESULTS AND DISCUSSION

The experimental data revealed that the integration of AI-based TBLT enhanced the communication skills of EFL learners. Participants in the experimental group demonstrated a marked improvement in various aspects of spoken English, such as fluency, pronunciation, and accuracy. This aligns with previous studies indicating the effectiveness of AI in promoting real-time verbal interaction and language practice (Zhang et al., 2024).

The Impact of TBLT Based AI in Enhancing Student' Speaking Skills

From the collected data, we can see the experimental group has the highest overall score compared to the control group.

Table 2. Speaking Pre-test and Post-test in experimental and control group

	Min Score	Max Score	Mean		Std. Deviation
Pre-test Experimental Group	65.00	86.00	73.1071	1.36213	7.20771
Post-test Experimental Group	65.00	91.00	80.2500	2.56569	8.28486
Pre-test Control Group	63.00	74.00	68.8000	1.772200	3.96232
Post-test Control Group	70.00	83.00	75.0000	2.30217	5.14782

The table presents the speaking test scores for both experimental and control groups prior to and following the intervention. The experimental group, which was exposed to Task-Based Language Teaching (TBLT) integrated with AI, showed a notable improvement. Their mean score improved from 73.11 in the pre-test to 80.25 in the post-test (an improvement of 7.14 points). In contrast, the control group's mean score rose from 68.80 to 75.00, resulting in a 6.20-point increase.

Although both groups demonstrated progress, the experimental group achieved a higher score gain, with a difference of 0.94 points more than the control group. This suggests that the TBLT-based AI intervention had a positive impact on enhancing students' speaking skills.

Table 3. Paired Sample t-Test

Group	t-statistic	p-value	Interpretation
Control Group	3.62	0.022	Significant improvement ($p<0.05$)
Experimental Group	4.16	0.0003	Highly significant improvement ($p < 0.0001$)

The t-test demonstrated a notable improvement in the control group ($t(4) = 3.62$, $p = 0.022$), whereas the experimental group demonstrated a more substantial gain ($t(27) = 4.16$, $p < 0.001$). These results suggest that the integration of AI within the TBLT approach had a stronger impact on students' language development compared to traditional instruction.

Based on teacher's observation, some of the students use more academic words such as *precisely, meanwhile, target text, the source* and they are more structured

in their presentation by starting their presentation with opening, and giving the closing statement. Specifically, the analysis of speaking tasks showed that students using AI-based tools, such as ChatGPT for dialogue practice and preparing students' task, were more confident and exhibited smoother speech transitions compared to the control group. However, the experimental group showed greater reliance on AI when drafting their presentations.

The post-study questionnaires supported these findings, as students expressed that AI-assisted tasks made practicing English more engaging and removed the apprehension often associated with classroom performance. Feedback from peer evaluations also influence the improvements in clarity and coherence during presentations and group discussions.

Students' Perspectives Towards TBLT Based AI

Students' responses are classified into three areas, they are students' perceptions, challenges and benefits of AI-based TBLT to their communication skills.

Students' Perceptions of AI-based TBLT

The results from the questionnaires and focus group discussions indicated positive perceptions among EFL learners regarding the use of AI-based TBLT. The majority of participants reported feeling more motivated to participate in speaking tasks, attributing this to the non-judgmental and immediate feedback provided by AI tools.

One the other hand, more than 85% of students agree that TBLT based AI can effectively improve their communication skills. Students described AI as a supportive tool that allowed for independent learning, enabling them to practice outside of class hours and reinforce their in-class learning. This mirrors the findings of Ginting, Batubara, and Hasnah (2023), who observed similar attitudes toward AI in writing activities.

It is clear that AI can save time to complete a task as one of the students, FM, also mentioned the benefit of this technology *"AI helps speed up the translation process and with AI, common errors in sentences can be minimized."*

"Based on my experience, when I am completing the tasks using AI, it is highlight effective as it encouraged practical communication and real-world application of the language" (HS)

However, a small percentage (about 15%) of participants expressed concerns about potential overreliance on AI, noting that while it boosted their confidence, it sometimes made them less inclined to attempt spontaneous communication without the tool. This suggests that while AI is a powerful supplemental resource, educators should balance its use with activities that promote human-to-human interaction.

Challenges in Implementing TBLT based AI

Imperfect final product

Although the overall response was positive, the study highlighted some challenges in implementing AI-based TBLT. Most of the challenges is AI does not satisfy their expectation in completing the assignments and feel afraid of the dependency.

"One of the challenges is the imperfect final product of AI, especially when it comes to the context. Over-reliance on AI can diminish our ability to translate the text with our own skill."(AP)

Prompting Difficulties

Even though few of students admit that there is no challenge in using AI while doing the task, the others complain that the prompts to ask questions to AI also become an issue since they have to ask multiple times to get the answer of AI. Furthermore, some of the students questions the answer from AI.

"I am afraid that the answer from AI is wrong" (AP)

"AI does not always give the correct answer, we have to decide if the answer can be accepted or not" (AJ)

"The challenges I face in using AI are the potential of long-term dependency and the risk of errors of information that we need to know" (AN)

Reflection

Feedback from teachers indicated the need for training to effectively integrate AI into their teaching strategies, ensuring that it complements rather than dominates classroom activities. This reflects the broader challenges of adopting new technologies in educational contexts and the importance of providing sufficient support and resources.

Enhancing Communication Skills

Confidence Building

The data suggested that AI-assisted TBLT was particularly effective in boosting students' productive language skills. Tasks that incorporated interactive AI elements led to increased student engagement and more substantial participation in oral activities. The practice of using AI as a rehearsal tool before class discussions appeared to enhance not only linguistic accuracy but also learners' willingness to contribute ideas, thus enriching the overall classroom dynamic.

"I will rate 99%, because I think this method helps me to be confident in communicating my ideas" (RS)

"I think maybe when we see our teacher speaking English in the front of class we are motivated to speak English too, we want to can speaking English with a good pronunciation and structured." (MDL)

Rehearsal and Motivation

AI allows the students to communicate in English and get the direct response in the language that can be understood easily. AM states that the conversation with AI motivate her to interact in the classroom.

"In my opinion, TBLT based AI contributes to improving my communication skills in English by providing opportunities to practice through tasks that simulate real world situation. this motivates me to be more active in speaking, listening, and interacting, that enhancing my fluency and confidence in using English.

Linguistic Development Beyond Speaking

The written feedback, based on teacher evaluations and peer assessments, noted a gradual improvement in grammatical accuracy and the ability to structure responses coherently. This reinforced the value of AI not just as a speaking tool but as a comprehensive language-learning aid that supports multiple facets of language acquisition.

Discussion

This study has shown that the integration of AI in TBLT approach is effective in enhancing students' language skills and support their communication skills. As found in the questionnaires, some students stated that they feel confident because AI provides opportunities to practice and have a conversation related to their tasks in English. This statement also supports quantitative data that present a positive increase in the post-test. This aligns with Ginting, Batubara, and Hasnah (2023), who also reported positive impact of AI in EFL Classroom. The conversation with AI helps the students to understand the assigned topic more deeply and the response can effectively motivate the students to be more confident in using English.

Students' ability to engage with AI tools independently reflects a shift toward more learner-centered pedagogy, where technology serves as a bridge between formal instruction and informal practice. In terms of practical implications, educators should consider integrating AI-based tools into TBLT activities in ways that promote not just fluency but also critical language awareness. However, while the perception is overwhelmingly positive, it is essential to question whether such tools equally benefit all proficiency levels, or if some learners may still require more structured guidance. Future research could explore the guidelines to use AI for specific skills in the language learning.

In completing the tasks, the students are required to complete meaningful tasks as a translator through collaboration, peer groups and individual tasks with AI to finally present their work. Most of the students use the advanced and academic words in translating the projects which can be clearly seen in their final work.

Indeed, this research has limitations in the number of samples and the gap of students between the experimental group and control group. A further challenge observed during the implementation was related to fostering students' self-awareness in balancing the technological support with their speaking skill advancement. Some students tended to rely on AI assistance even during oral presentations, which may contribute to increase their fluency but occasionally led to misunderstanding due to inaccurate content generated by the tool. This highlights the need for more structured guidance on the proper application for technology within educational contexts.

On the other hand, the students should not be allowed to use their cell phone while doing the presentations that will impact the measurement of the post-test speaking skills. AI has given the absolute access to complete the task easily and get the answer quickly. However, the students should be encouraged to discuss how

this technology impact their critical thinking and the best approach to utilize the AI to complete their tasks as students and in the future.

AI has increased quickly with tremendous advancement. While writing this journal, China has announced a new technology that is more advanced than Chatgpt which is DeepSeek that is more intelligent and better than the previous Artificial Intelligent. Clearly, with the vary of AI and the launch of the most updated technology over the time, the access and opportunity to learn the language is wider and more interesting since we can easily adapt with our needs and environment. Thus, the teacher and stakeholder should be more aware to utilize the use of AI and giving the instruction and caution to the students to use them wisely.

In conclusion, while AI-enhanced TBLT holds great promise for language learning, it also demands a structured and ethical approach to its implementation. Future research should explore how to design AI-integrated lesson plans that balance technological support with pedagogical integrity.

CONCLUSION

The findings of this study support the integration of AI-based Task-Based Language Teaching (TBLT) as an effective method for enhancing EFL learners' speaking and communication skills. The students' positive reception underscores its potential to foster engagement, boost confidence, and create a more dynamic and autonomous learning environment. Importantly, this approach should not only aim to develop fluency but also nurture learners' critical language awareness and reflective thinking. However, its successful implementation depends on providing clear guidance and maintaining a balanced use of technology. Educators must scaffold students' interaction with AI tools to ensure they are used ethically and meaningfully, thereby supporting—not replacing—the essential processes of language acquisition and communicative competence.

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CIPP Analysis of the Implementation of Project-Based Learning Assisted by Kahoot in Differentiated Classrooms

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Abstract

The 21st century competencies identified by the Partnership for 21st Century Skills (P21) include communication, collaboration, critical thinking, and creativity. However, the achievement of these competencies is often hampered by the lack of student learning motivation. This study aims to evaluate the application of project-based learning (PjBL) assisted by Kahoot media in differentiated learning in class IX-H MTsN Bangkalan. The type of research used is descriptive qualitative with a CIPP (Context, Input, Process, Product) evaluation approach. The results showed that choosing the right learning media context can increase student motivation and creativity. Innovation in PjBL learning combined with differentiated learning is proven to increase active student involvement. The well-planned learning process reflects the success of classroom management by the researcher. In addition, the achievement of evaluation results shows that students feel more motivated and enthusiastic in participating in learning and show increased creativity in the assigned tasks. The fun assessment atmosphere also contributed to the positive learning experience. The implication of this study shows that the implementation of PjBL with Kahoot media can be an effective strategy to increase students' motivation and engagement in differentiated learning.

Keywords: CIPP, kahoot, motivation, differentiated

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INTRODUCTION

The competencies needed by students in the 21st century, according to the Partnership for 21st Century Skills (P21), include "The 4Cs": communication, collaboration, critical thinking, and creativity (Sari et al., 2021). These competencies are very important to be taught in learning activities. However, the achievement of these competencies is often hampered by low student motivation. Students who are less motivated tend not to feel at home following learning and are more easily tempted to do other activities (Nurzarah et al., 2023).

Based on observations in class IX-H of MTsN Bangkalan, it was found that students' literacy interest in packaged books borrowed from the madrasah library was very low. This is caused by the display of letters and pictures that are less attractive, which results in distraction of students' attention. Many students prefer

talking to friends, sleeping, or doing other things rather than reading books. In addition, low learning motivation is also caused by the lack of use of interactive learning media. Students' creativity is also hampered because during learning, they only record what the teacher says on the blackboard, without any desire to explore the material further. Students often do not feel confident to ask questions or express their opinions.

Learning motivation is the drive to carry out learning activities, which is very important in determining the success of student learning. Students who have high intelligence but are not motivated will have difficulty in achieving optimal learning outcomes (Souisa & Huliselan, 2020) . Therefore, it is important to arouse students' motivation so that they can receive lessons better (Munir et al., 2022).

Factors that influence learning motivation can be classified into two categories: intrinsic and extrinsic. Intrinsic factors come from within the student, such as the desire to succeed and the need to learn, while extrinsic factors come from the external environment, such as appreciation, parental support, and interesting learning activities (Nursakdiah et al., 2023). One of the intrinsic factors that can be overcome is student boredom, which can be turned into a pleasant learning experience through innovation in learning.

Innovation in education is very important, especially in today's digital era. With the development of technology, new opportunities arise to implement interactive teaching methods, which can be tailored to students' interests and needs. Conventional learning that prioritizes lectures and memorization is starting to be abandoned because it is less effective in meeting the demands of the times. The use of digital media in the education process is hailed as an effective and less time-consuming method. However, it requires the help of parents and others, as well as other factors that influence the experience (Pradana, 2023).

One innovation that can be applied is the use of interactive learning media, such as Kahoot, which is a game-based quiz platform. Kahoot can create a fun and competitive learning experience, so that students are more actively involved in the learning process. Research shows that Kahoot app is effective in increasing students' interest in learning, thanks to its features that support online learning.

When Kahoot is integrated with project-based learning (PjBL) approach, it becomes an effective tool to evaluate students' understanding of the project. PjBL allows students to solve problems and conduct analysis, as well as practice critical thinking and find scientific solutions (Jariah et al., 2024). Through PjBL, students can work on relevant projects, provide real experience, and apply knowledge practically.

However, to meet the needs of diverse students, it is important to implement differentiated learning. Differentiated learning is a customized process to create learning experiences that suit students' needs, including objectives, learning experiences, content, and evaluation (Putra, 2024). With this approach, teachers can customize tasks and learning processes according to students' competencies, interests, and learning styles, so that students are more proficient in exploring the material.

This study aims to provide a comprehensive description of the application of project-based learning assisted by Kahoot media in differentiated learning in class IX-H MTsN Bangkalan. Hopefully, the integration of PjBL and differentiated learning can increase students' motivation and creativity, because they feel involved

in learning activities that suit their needs. When students feel involved, they will be more optimistic in completing projects, increasing understanding, and deepening their experience by exploring real life.

RESEARCH METHODS

Research Design

The type of research used is descriptive qualitative research with an evaluative case study approach. This research aims to evaluate learning activities using benchmarks that have been set (Pramesti, 2020). The evaluation model used is CIPP (Context, Input, Process, Product), which includes assessing the relevance and effectiveness of the learning media used (Context), analyzing teacher readiness, facilities and infrastructure, and learning materials used (Input), observing the implementation of learning and interaction between teachers and students (Process) and measuring student learning outcomes, including increased motivation, creativity, and understanding of the material (Product) (Habib Akbar Nurhakim & Fahruddin, 2022).

The CIPP method was used in this study because of its suitability to the object of evaluation. CIPP serves as a program evaluation model and allows a thorough assessment of the following aspects: context appropriateness (students' needs), input quality (teachers' abilities and resources), implementation process efficiency, and product impact or learning outcomes. CIPP has a clear structure that aids systematic data collection and analysis at each phase of the program.

The evaluation components are operationalized as follows: Context is assessed through analyzing student learning needs, evaluating the suitability of learning media, initial observation of classroom conditions. Input is assessed including teacher pedagogical competence, availability of learning facilities, design of teaching materials. Process is monitored through field notes of learning activities, video documentation of interactions, teacher reflection journals. Finally, the Product is measured from student work portfolios, learning progress notes, and in-depth interview results.

Location and Subject of Research

This research was conducted at MTsN Bangkalan in the 2024-2025 academic year, from July to August 2024. The research subjects consisted of 30 students in class IX-H. The sample selection was carried out using the total sampling technique, where all students in the class were used as research subjects. Key informants in this study include teachers, students, and the head of the madrasah.

Data Collection Technique

This research uses triangulation of data sources so that the data produced is more valid and reliable. Triangulation of data sources in qualitative research is a technique used to increase the validity and credibility of research findings by utilizing various data sources. Triangulation of data sources is carried out to ensure that data collected from various sources support each other so as to provide a more comprehensive and in depth picture of the phenomenon under study. The advantage of using data source triangulation is that researchers can reduce bias, strengthen the validity of findings, and ensure that research results reflect a broader and more diverse reality (Luthfiyani & Murhayati, 2024).

In triangulating data sources, researchers can use various data collection techniques simultaneously to obtain more and comprehensive information. Data collection techniques in this study include interviews, observation, and documentation (Ardiansyah et al., 2023). The first technique is interviews. Each interview lasted 10 minutes and utilized a guide that included questions about learning experiences, views on learning media, and student motivation. Example questions include: "What do you think about using Kahoot media in learning?". The second technique is observation. The observation sheet covered aspects such as student engagement, teacher-student interaction, and the use of learning media. Observations were conducted during 8 meetings. Observations were made directly to record student activities and classroom dynamics. The third technique is documentation. The types of documents collected include photos of learning activities, student work (such as Pop-up Book and PPT), and evaluation documents that include grades and feedback from teachers (Ardiansyah et al., 2023).

Data Analysis

The data obtained were analyzed through three stages according to the Miles & Huberman model including data reduction, data presentation and conclusion drawing (Habib & Fahruddin, 2022). The first stage, data reduction, involves classifying data based on themes, such as student motivation, creativity, and effectiveness of learning media. For example, grouping student interview quotes that expressed increased interest in learning after using interactive media. The second stage, data presentation, entails organizing information in the form of narrative text, tables or graphs. An example, presenting observation data in a table that shows the level of student engagement during learning The final stage, drawing conclusions, involves deriving conclusions from data analysis that can be justified. For example, concluding that the use of Kahoot and PjBL media significantly increases students' motivation and creativity based on the analyzed data.

Validity and Reliability

To increase the validity and reliability of the data, this study used source triangulation. Source triangulation is a technique that utilizes various data sources to ensure that the data collected support each other, thus providing a more comprehensive picture of the phenomenon under study. With triangulation, researchers can reduce bias and strengthen the validity of findings, ensuring that research results reflect a broader and more diverse reality (Luthfiyani & Murhayati, 2024).

RESULTS AND DISCUSSION

Based on the results of observations and analysis of the application of Project Based Learning (PjBL) assisted by Kahoot media, the following are the findings obtained from the CIPP (Context, Input, Process, Product) component:

Context

The use of interesting learning media can increase students' motivation and interest in literacy during learning. In class IX-H of MTsN Bangkalan, initial observations showed that only 30% of students took part in reading activities actively, while the rest tended to be passive and not very interested. In interviews, students stated that

they were bored with conventional learning approaches. "I would rather play games than read books. Books are boring and hard to understand," said one student.

More engaging learning media, such as Pop-up Book and PowerPoint from Canva, are needed to increase students' interest and motivation to read. These media not only have interesting stories, but they also have pictures that move as each page is opened (Ulfi & Hidayati, 2023).The use of pop-up books can keep students from getting bored while the instructor is giving a lesson. It can make them more interested, actively involved, and increase their desire to learn (Widyaningrum et al., 2022).

The use of PowerPoint from Canva as an innovative learning media is also proven to increase student motivation. Students become more active and learn more about what is being taught. Students said, "PPT from Canva makes the lesson more interesting." This shows that learning with interesting media can be more beneficial (Maulani et al., 2025).

Students' learning motivation greatly affects their learning success. Students with high learning motivation tend to have a good focus on learning, so they can understand the material better. In contrast, students with low learning motivation will not be interested in learning, and when the teacher explains the material, they tend not to pay attention. Students who have low learning motivation often feel bored and sleepy in class. One student revealed, "Sometimes I feel sleepy during lessons, because there is nothing interesting." In learning, motivation is a non-cognitive psychological component that can increase passion, satisfaction, and enthusiasm (D. P. Sari et al., 2021; I. Sari et al., 2021).

This result supports Ulfi & Hidayati's research (2023), which states that interactive learning media can increase student interest. This study differs from previous studies which showed that only conventional methods were used. It shows that creative media such as Pop-up Book and PowerPoint from Canva can significantly increase students' encouragement to read. However, this study is limited to a limited area in MTsN Bangkalan, so the results cannot be generalized to a wider situation.

Input

Student learning outcomes are strongly influenced by teacher performance during the learning process. Teachers not only deliver lessons, but they can also create an interesting and quality learning environment. In this context, the project-based learning (PjBL) model has been proven effective in improving students' creativity and literacy. PjBL encourages students to be actively involved in the learning process through projects relevant to the real world, which helps them improve critical and creative thinking skills (Fariha Maulidia & Istiqomah, 2023).

By using PjBL in learning, there are many advantages, such as students become more understanding of concepts and more motivated to learn. They not only learn theoretically but also apply what they know in the real world by creating artworks or multimedia presentations. This shows that a student-centered learning model can improve overall learning outcomes.

In addition, using a differentiated learning approach is essential to meet students' needs and interests. Teachers can create a more inclusive and engaging learning environment by customizing teaching methods according to students' preferences and readiness. According to research, differentiated learning can increase student

motivation and engagement. Thus, literacy and creativity learning outcomes can be improved (Putri & Rachmadyanti, 2024).

In general, inputs, such as teacher performance, learning models and media used, are strongly related to learning outcomes. Students will be more motivated to learn when teachers use PjBL and differentiated learning strategies well. This has a positive impact on students' literacy and creativity.

Previous research shows that PjBL can increase student participation. This finding is in line with this finding (Fariha Maulidia & Istiqomah, 2023). However, this study found that the differentiated learning approach also increased students' desire. This study only looked at one class in one place, so it may not reflect differences in other schools. These results may differ depending on the context, so generalizations should be made with caution.

Process

As part of the lesson plan, the researcher implemented the lesson. Here are some of the activities that were conducted: Introduction Activity, Core Activity, and Closing Activities

Introduction Activity

The teacher started this activity by greeting the students, expressing gratitude to God Almighty, and reciting Surah Al-Fatihah with the students to get blessings during their learning. The teacher then checks the students' attendance. Next, the teacher conducts apperception and diagnostic tests to find out students' learning experiences and abilities about the topic to be discussed.

Core Activity

The teacher conducts a literacy movement by reading the material discussed at the beginning of the core activities. In this activity, the teacher uses project-based learning (PjBL) syntax, which consists of six steps: project preparation, project design, schedule preparation, project supervision, result testing, and evaluation (Pujiono et al., 2025).

Students seem to be very engaged in the core activities. For example, some students were very enthusiastic when the teacher asked them to talk in small groups. I have an idea for this project! said one of the students. We can make a video with any theme we choose. This reaction shows that students feel responsible for the project they are completing.

In addition, the group dynamics are very beneficial. Students shared information and supported each other. Another student asked, "What if we also add interesting pictures to make our presentation livelier?" as they talked in class. This shows that students are good at both group and individual work.

Students' emotional reactions can be clearly seen. Many students smiled and congratulated each other when they successfully completed part of the project. "We're almost done!" said one student who looked very excited. This is going to be the best work we've ever done. Students show this emotional engagement, which is very important, as it shows that they feel connected to the material and the learning process.

Overall, the learning method not only followed the set procedure, but also created an interactive and fun learning environment. Students showed high engagement in discussion, collaboration, and positive emotional reactions, indicating that the implementation of PjBL enhanced their drive and creativity.

Project-based learning uses six main syntaxes that are applied systematically. For the first syntax, the researcher started by showing a YouTube video to spark students' curiosity. After that, they were invited to think critically and ask questions about the video. The second syntax gave students the opportunity to be creative. They can choose to make Pop Up books or Canva PPT project products. These two creative learning media were chosen for their ability to encourage student creativity and test new ideas.

In the third syntax, students help to organize the schedule for making the product through group discussion, and the researcher actively participates in the project development in the fourth syntax by going around the class to provide guidance and direction to each group. In the fifth syntax, students were given the opportunity to present their work.

Finally, the evaluation of the learning experience involves an evaluation of the project materials and an interactive assessment using Kahoot that creates an effective and fun evaluation environment. Each syntax is intended to improve students' cognitive abilities in addition to enhancing innovation, teamwork and presentation skills.

Previous studies have shown that project-based learning can increase student participation. This finding is in line with this finding (Pujiono et al., 2025). However, this study shows that regular implementation of PjBL syntax increases students' emotional and cognitive engagement. This study had limited time to conduct each syntax, which may impact the depth of learning. These results may differ depending on the context, so generalizations should be made with caution.

Closing Activities

In the final learning activity, the researcher encourages students to engage in healthy competition. Additionally, students are invited to provide testimonials regarding their learning experiences and to share their feelings about participating in the learning process.

Product

In differentiated learning in class IX-H MTsN Bangkalan, the application of project-based learning with the help of Kahoot media has a tremendous impact, namely: Increased Student Motivation and Creativity, Use of Kahoot as an Assessment Media, and Positive Interview Results

Increased Student Motivation and Creativity

When watching the video given by the researcher as a trigger activity, students are very enthusiastic. They actively asked questions and tried to answer based on their knowledge. In addition, seeing pop-up books and PowerPoints from Canva made by other groups increased students' interest in literacy.

Prior to the implementation of the instructional intervention, we conducted direct observations of students' reading behaviors in the classroom. The initial observations revealed that a majority of students displayed a lack of interest in reading activities, as indicated by disengaged body posture, short reading durations, and minimal interaction with reading materials.

After implementing the interactive project-based learning media over a four-week period, notable improvements were observed. Students showed increased engagement, as seen in their attentive body posture, longer reading durations, and active discussions related to the reading materials.

Figure 1. Changes in students' reading engagement before (figure 1a) and after (figure 1b) the instructional intervention

This figure illustrates the contrast between the initial low engagement and the improved reading participation following the intervention. These changes were also supported by interview results, indicating that the instructional approach enhanced students' motivation to learn.

The survey results show that, compared to conventional learning, differentiated learning can improve students' literacy and numeracy (Novianti et al., 2023; Rahmawati, 2024). Based on figure 1 and 2, It is very clear that students' learning motivation without learning media and with learning media is different.

Students enthusiastically listening to other groups' presentations is an example of an activity that shows progress. When they are given the opportunity to directly hold the products made by their friends, there is a big change: from previously they were less interested in reading books to being very interested in reading the products they made, such as Pop-Up Book and PowerPoint from Canva. The products they made were a true testament to the students' high creativity. A person's feelings, expressions, and thoughts are strongly related to creativity. Creative students have habits, motivation, new ideas, and the ability to make or change things to make them more attractive or have added value (Atira et al., 2021).

Use of Kahoot as an Assessment Media

As a learning evaluation tool, Kahoot has generated very positive responses. Students seem very happy and compete healthily to get the best score among their friends even though they are being tested for knowledge. Students' competitive attitude is influenced by the use of Kahoot as a learning evaluation tool. They are ready to answer questions quickly and on time. By using Kahoot, students can concentrate on the questions displayed on the screen and reduce their anxiety. Students are very happy when doing digital assessment with Kahoot. Students shouted, "One more time, Mom!" after the quiz session ended and the names of the three highest scoring students were displayed. They felt addicted to doing the questions again because of the fun atmosphere during the assessment (Koten et al., 2022)

Positive Interview Results

At the end of the lesson, based on the interviews conducted by the researcher and the students, the following results were obtained: Making a Pop Up Book: One student said, "Exercising creativity, practicing cooperation in working, and exchanging ideas". Using PowerPoint from Canva: One student said, "I use Canva's PowerPoint in this digital era because I think it is easier and less complicated," while another student said, "I use Canva's PowerPoint because it is more creative

and easier." This is in line with previous research which shows that the use of Pop Up Book media not only increases students' enthusiasm for learning but also increases their overall motivation to learn. Students can use Canva's features to create animations, diagrams, and infographics and actively participate in the creation of their own learning materials. This enhances students' understanding, creativity, and connectedness (Kusnawati et al., 2024). Regarding the use of Kahoot as an assessment tool, one student noted, "The difference is that when the exam uses paper, I feel tense and confused. If you use Kahoot, it is more fun, there is a good song and there are pictures."

Thus, the results showed that students' motivation and creativity significantly improved when implementing project-based learning supported by Kahoot media and creative products such as Pop-Up Book and PowerPoint from Canva, as measured by valid and reliable tools.

This finding reinforces the study results from Novianti et al. (2023) which showed that differentiated learning can improve students' literacy. Different from previous studies which showed that conventional media are not attractive enough for students, this study shows that the use of innovative media such as Pop-Up Book and PowerPoint from Canva, can significantly increase students' motivation and creativity. The limitation of this study lies in the small sample size, which may not reflect the larger population. Generalization of these results needs to be done with caution, given that different contexts may produce different results.

CONCLUSION

The evaluation results of the application of project-based learning with the help of Kahoot media for differentiated learning in class IX MTsN Bangkalan produced significant results. The research results show the following this study found that the selection of the right learning media context proved effective in increasing students' motivation and creativity; the incorporation of project-based learning with differentiated strategies succeeded in increasing students' active participation in learning; and the implementation of structured learning reflected the researcher's success in managing the class. Students have a rapidly increasing interest in literacy; their creativity is well developed; and they have greater motivation to learn. The enjoyable atmosphere of assessment also helps the success of learning. This study provides empirical evidence on the effectiveness of combining project-based learning with digital media in differentiated learning. The findings enrich the educational literature by affirming the importance of student-centered learning innovations that are relevant to 21st century learning needs. Educators can consider the use of interactive media in designing learning. Differentiated learning strategies need to be further developed to increase student engagement. Game-based assessments such as Kahoot can be utilized to create a more enjoyable evaluation. This research provides an important foundation for the development of innovative learning practices in madrasah education.

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Multimodal Semiotic Analysis of Coldplay's *Viva La Vida*: Lyrical, Visual, And Intertextual Meaning

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Abstract

This study analyzes *Viva La Vida* by Coldplay to explore the deeper meaning behind its lyrics and music video. The song tells the story of a fallen king and expresses themes like power, loss, regret, and hope. As a multimodal text, it combines music, words, and visuals to deliver its message. Using a qualitative method, the researcher closely examined the lyrics and visuals. The analysis is based on three main theories: Barthes' semiotics, Kristeva's intertextuality and Kress & van Leeuwen's multimodality. Barthes' theory helps explain how words like "crown" and "puppet" carry not just literal meaning, but also feelings and cultural ideas. Kristeva's intertextuality shows how the song connects with older stories from history, the Bible, and literature, such as the French Revolution and Shakespeare. These references give the song deeper emotional value. The music video supports the story through strong visual symbols like a dying rose, broken television, and gestures of surrender. According to Kress and van Leeuwen, these elements add to the overall meaning. In the end, *Viva La Vida* gives a clear message: power does not last forever, but people can learn and reflect. The song is also useful for learning English grammar, vocabulary, and critical thinking

Keywords: Language learning, multimodal discourse, semiotics, intertextuality, song lyric.

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INTRODUCTION

The song titled *Viva La Vida* by Coldplay is one of the most well-known songs of the 21st century. When it was released in 2008, the song has been performed around the world. Today the song is still enjoyed by many listeners. This song is considered suitable for the research because of not only its beautiful melody, but also the deep meanings of lyrics and gestures found in the song. Besides, the song also contains strong visual elements contained in the album cover. The song tells a story of power, downfall, and reflection and it can be interpreted in many different ways.

This paper tries to analyze the meanings behind the lyrics and visuals in *Viva La Vida*. It applies the ideas borrowed from semiotics, intertextuality, and multimodal analysis to understand how the song shares its message through signs, symbols, and references. The visual of the album cover, which shows the painting *Liberty Leading the People* by Eugène Delacroix will be also examined. This painting gives a strong message about revolution and history which make the meaning of the song strnger while the combination of lyrics and visuals will deepen the layered messages. Therefore, makes the song suitable for this research.

Previous studies have shown that songs contained messages about culture, ideology or society. For example, Putri and Triyono (2018) used critical discourse analysis on *We Shall Overcome*. The message is describing Palestine's political situation. Rantung et al. (2023) discussed songs teaching environmental awareness. Arif and Triyono (2018) found that *Baby Shark* contained Korean values about work and discipline. These examples indicate that songs are more than just entertainment. They also carry the message about culture, social reality, and ideology.

In the field of language education, researchers believe using songs in classrooms helps increase students' interest and motivation (Al-Smadi, 2020; Husain et al., 2021). Songs improve learners to remember vocabulary, enjoy learning, and understand cultural messages (Kumar et al., 2022). However, deeper meanings in songs can sometimes slip out due to different backgrounds (Monson et al., 2016). Some researchers argue that music should not only be seen as entertainment, but also a type of message that uses many forms like sound, words, and images. Way and McKerrell (2021) explain that music can carry political and cultural meanings which are shaped by history, values, and symbols. In popular culture, songs often show resistance or reflection through audio and visual elements.

Another research, Forte (2023) adds that the true meaning of a song can be understood if it is examined with a multimodal text. It means it is necessary for us to study the lyrics, melody and visuals because they will work together and be interpreted as a single unit to reveal its hidden messages. The theories above strengthen the idea that *Viva La Vida* is considered a suitable choice since the song is more than just a beautiful song, but it is also a meaningful piece that can be analysed through its signs and symbols where they can reveal hidden message found in the song.

By looking at the signs in both the lyrics and visuals, we can understand how music talks about social, political, and historical issues in a creative and emotional way (Pudjiati & Zuriyati, 2022).

Theoretical Framework: Semiotics, Intertextuality, And Multimodal Analysis

To understand the layered message of a certain song, it is necessary to study deeper more than just the lyrics of the music. Therefore this study uses three approaches namely semiotics, intertextuality, and multimodal analysis to analyze how meaning

is created through symbols, certain references, and the combination of sound and visuals.

1. Semiotics: Understanding Meaning Through Signs

Roland Barthes introduced the idea that we can understand meaning by interpreting signs found in cultural texts, including songs. In a song, these signs could be words, symbols, or images.

This theory comes from the work of Saussure and Peirce, but this research will focus on Roland Barthes and Umberto Eco. Barthes divides meaning into two levels:

- Denotation: The direct & literal meaning (e.g., the word " *crown* " simply means a real crown usually worn by a king)
- Connotation: The hidden or symbolic meaning and what it represents in culture or emotion (e.g., a " *crown* " can symbolize power, authority, or royalty)

Another author**,** Eco (1976) said that sign interpretation depends on the audience's cultural background. Delacroix's painting which become the cover album of *viva la vida* may suggest freedom or revolution, depending on the viewer's background.

2. Intertextuality: Connections Between Texts

Intertextuality is a theory from Julia Kristeva (1966), who argued that there is no text standing alone. Every text is connected to the previous histories or songs, ideas, or symbols. This theory helps us see how artworks especially songs get interpretation from other works that came before them. In *Viva La Vida* as examples:

- The line "*I used to rule the world…*" might describe the King Louis XVI.
- The album cover uses Delacroix's *Liberty Leading the People* (1830) is believed referring to revolution.

Gérard Genette (1982) developed the theory further with the idea of hypertextuality, which means that a new text gets its meaning by referring to an older one. This connection is not always direct—it can be a feeling, a theme, or even a small detail that reminds us of something we already know. This connection makes the message richer and helps the audience understand the deeper layer of meaning behind a certain work.

3. Multimodal Discourse Analysis: Combining Lyrics and Visuals

Meaning in a song doesn't only come from the lyrics. It also comes from images, colors, music and how everything is presented together. According to Kress and van Leeuwen (1996), all these elements which are called "modes" work together to create a full message. These modes include:

- Lyrics such as written/spoken words
- Sound such as music, instruments, voice tone
- Visuals such as music video, album cover.
- Gestures such as performances, dances

This theory is called multimodal discourse analysis, and it helps us understand how all these elements work together to create a certain meaning. In *Viva La Vida*, for example, the album cover adds more meaning to the lyrics such examples:

- The use of red and white may represent blood and purity,
- The old-style Baroque font suggests historical context and connects to revolution and monarchy.

There are other researchers who also talk about how music should be analyzed in this way. Forte (2023) says that it is necessary to look at lyrics, harmony, and visuals together to understand the deeper meaning. Way and McKerrell (2021) writes that popular music is more than just entertainment. It's a means that project ideas about power, identity, and history. Music videos, album covers, and body movement carry symbolic messages which can create social and political meaning.

From this point of view, *Viva La Vida* is not just a popular song. It is a meaningful artwork that carry the message of culture, history, and ideology.

RESEARCH METHOD

This study uses a qualitative descriptive method to draw the layered messages in Coldplay's *Viva La Vida*. The analysis uses on semiotic and intertextual theory, and multimodal discourse. They will operate within the lyrics and the visuals (music video).

The material data of the research is taken from:

- Official lyrics from lyric websites and Coldplay's publications.
- Official music video from YouTube: https://www.youtube.com/watch?v=dvgZkm1xWPE

Then the two sources namely text (lyrics) and image (visuals), are examined together as one unit of message. This follows the idea of multimodal discourse (Kress & van Leeuwen, 2006), which explains that meaning is created through the combination of words, pictures, and sounds.

Data Collection and Procedure

The analysis is done in three stages:

1. *Lyrical Analysis (Textual Semiotics)*
   The lyrics are read carefully to find important symbols and figurative language like metaphors or personification. This stage uses Roland Barthes' theory of semiotics, which focuses on:
   - Denotation: the basic, literal meaning
   - Connotation: the deeper, emotional, or cultural meaning
     For example, the word "crown" found in this song might mean a king's power.
2. *Intertextual Analysis (Kristeva's Intertextuality)*
   The song was also studied to find connections to history, religion, and certain literature. This part is examined using Julia Kristeva's idea of *intertextuality*, which explains that every text has connection to other texts. For example, some lines in the song may remind people of the Bible or the French Revolution. These references make the song feel more emotional and more powerful by connecting it to real religious and ideological or political events.
3. Meaning Synthesis (Multimodal Interpretation)
   The music video was analyzed using Kress & van Leeuwen's theory of multimodality. This means studying how the visuals (like images, colors, and body gestures) work with the lyrics to draw hidden messages from the song.

Table 1. Summary of Theoretical Approaches Applied to Viva La Vida

Theoretical Approach	Application in *Viva La Vida*	Scholar
Barthes' Semiotics	The word "crown" functions as a symbol of broken power	Barthes (1977)
Kristeva's Intertextuality	The lyrics represent religious and historical references	Kristeva (1966)
Kress & van Leeuwen's Multimodality	Visual elements (e.g., Delacroix painting) strengthen the theme	Kress & van Leeuwen (1996)

RESULTS AND DISCUSSION

1. Lyrical Analysis: Understanding Textual Semiotics in *Viva La Vida*

The song *Viva La Vida* by Coldplay is considered being rich in semiotic text because it has many metaphors and narrative expressions. The lyrics are like a poetic structure filled with strong imagery and repetition. This will help understand its deeper meanings. According to Chandler (2017), textual semiotics focuses on how meaning is created through signs such as figurative language, symbols, and grammar. In this song, the lyrics operate on different levels namely historical, power and cultural.

This analysis applies Roland Barthes' theory of semiotics, especially the concept of denotation (literal meaning) and connotation (implied or symbolic meaning). Barthes (1977) argues that figurative expressions not only create poetic effects but also carry ideological meanings. Connotations can build what he calls "mythologies," or cultural messages that represent certain ideas or beliefs. For example, the opening line "*I used to rule the world*" can be seen as a symbolic sign of lost power or past glory.

- Denotatively, it refers to someone who had leadership in the past.
- Connotatively, it suggests a historical or even religious reference, such as a fallen king or a divine ruler.

Another line, *"Seas would rise when I gave the word,"* uses exaggeration to show how powerful the king once used to be. The sea, which is normally very hard to control, follows his command. This makes him look like someone with God-like power. According to Barthes, this kind of image is more than just power, it becomes a myth that makes the king seem more powerful than he is in a reality.

But this strong image changes in the next part of the song. The line *"Now in the morning I sleep alone"* shows that the king quickly lost everything. He once used to be powerful and obeyed, but now he is alone and forgotten.

The next line, *"Sweep the streets I used to own,"* shows an even miserable picture. The king who once was powerful but is now doing a disrespected job, cleaning the streets he once had control over it. This change from power to weakness matches Bakhtin's idea of the chronotype, where time and place work together to create a strong emotional feeling in the story.

In the second part of the song, the line *"I used to roll the dice"* is a symbol of taking chances and trusting fate. The characteristics of dice which are used in games is highly unpredictable and become something we cannot control. This means the king used to take big risks when he was in power, and this led to his downfall.

Then the line *"Feel the fear in my enemies' eyes"* shows that the king once had power. A lot of his enemies felt afraid of him, which means they respected and feared his position. The fear shows how much influence and power he had at that time.

The next line, *"The old king is dead! Long live the king!"* is an important phrase. Based on Barthes' semiotic theory, the sentence has two meanings. On the surface (denotation), it's a traditional phrase said when a new king replaces the previous king. But the deeper (connotative) meaning is symbolic. It shows that power is temporary and will perish in the end. In this song, the "new king" might not be a person. It could be a symbol of life or fate that takes over after the old king's fall from power. So, the line can be interpreted that personal or king's power can disappear, but someone's else life or fate continues.

The line "*One minute I held the key*" uses the key as a symbol of control and access. It shows that the king once had power and control but now that power is quickly lost.

The following line, "*My castle stood upon pillars of salt and sand*," possibly refers to a story in the Bible. It could be translated that the foundation of his power

was weak. As we know that salt and sand can easily be destructed, so this comes to perception that even great power can collapse if it is not supported by strong foundations or values.

In the chorus, the line *"I hear Jerusalem bells a-ringing"* adds a nuance of a deeper religious feeling. Jerusalem is a holy city, frequently viewed as a symbol of faith and sacrifice. The sound of the bells can be connected to the listener as church bells. This image strengthens the sense of emotional and spiritual to the listeners

The next line, *"Roman cavalry choirs are singing,"* combines historical and religious ideas. It connects the image of a powerful Roman army with Christian traditions like church music. This gives the song a deeper meaning describing that the fall of great kingdom, like Rome, is similar to the fall of the king in the song.

The phrase "*Be my mirror, my sword and shield*" uses three strong metaphors: (1) A mirror for self-reflection; (2) A sword for justice or action; and (3) A shield for protection. These three things can be interpreted that the king is asking for help. He might be asking for forgiveness or hoping to start again. According to Peirce's theory of compound signs, one sign (like a word or image) can have more than one meaning. In this case, the mirror, sword, and shield all show his inner struggle, his feelings of regret, hope, and weakness at the same time.

The line *"Never an honest word"* is repeated many times in the song. This repetition shows that the king feels very disappointed, alone, and betrayed. He believes that people are no longer honest about him, or they might be spreading lies or changing the truth. According to Barthes' (1977) semiotic theory, language is not just used to give meaning, but it can also create a myth, a false idea that people think is true because it is repeated many times. In this case, the king feels that language has been used to change how people see or think of him, making him disrespected or look bad or like someone he is not.

Another line, *"It was the wicked and wild wind,"* uses a metaphor to describe something strong but out of control. The wind here is not just a form of weather, but it represents big distrust or chaos. In semiotic terms, the wind becomes a symbol of the events that overthrow the king's power.

The line *"Just a puppet on a lonely string"* gives a stronger meaning. A puppet cannot move by itself, and it only moves if someone pulls the string. This metaphor shows that the king has lost his control and powerless. Now, he feels like someone who is being controlled by other people or his fate.

The line "*I know Saint Peter won't call my name*" brings a strong religious and emotional meaning to the song. In Christian belief, Saint Peter is the one who allows people to enter heaven. If he does not mention your name, it means you cannot go into heaven. For the king, this line shows he feels guilty and not worthy. If his name is not called, it means he feels he will be rejected to enter the heaven. This shows that he feels abandoned and forgotten.

By using the theories from Barthes, we can understand that a lot of words in *Viva La Vida* have hidden meanings or metaphors which contain certain hidden messages. It helps create the hidden message about power, failure, and the hope for forgiveness.

2. Intertextual Analysis of *Viva La Vida* by Coldplay Using Julia Kristeva's Theory

Julia Kristeva proposed that no story or text is truly original. Every song, book, or film is influenced by previous stories, history or culture. In other words, new texts are often built from parts of old texts. This idea helps us understand how the song *Viva La Vida* by Coldplay a correlation with other aspects has such as religion, history, and literature to dig deeper into hidden meanings.

The song is about a king who once had power and fame but now feels lonely and full of regret. Through intertextuality, Coldplay connects this king to other well-known stories—from the Bible, the French Revolution, Shakespeare's plays, and Christian hymns. These connections make the song feel more emotional and meaningful.

a. Historical Intertextuality: The Fall of Kings

The lyrics:

- *"I used to rule the world"*
- *"Revolutionaries wait for my head on a silver plate"*

These lines remind us of the French Revolution in 1789, when King Louis XVI was overthrown from power and later executed. The song shows a similar story namely a leader who was once powerful and respected but now is prosecuted and left alone. This connects the song *Viva La Vida* to real history, showing that power doesn't last forever.

There is also a reference from the Bible. The lyric, *"Saint Peter won't call my name,"* shows the singer's fear of being rejected from heaven, just like the kings in the Bible who lost God's trust.

By using these historical and religious stories, the song talks about the consequences of pride and how power can be easily lost.

b. Religious Intertextuality: Guilt and Redemption

The song uses many religious lyrics, such as:

- *"I hear Jerusalem bells a-ringing"*
- *"Roman Catholic choirs are singing"*
- *"Be my mirror, my sword and shield"*
- *"I know Saint Peter won't call my name"*

These lines come from Christian tradition. The bells and choirs make us think of churches or holy places. The line *"mirror, sword, and shield"* may be inspired by Bible verses, like *"the sword of the Spirit"*. The name Saint Peter, who is believed to guard the gates of heaven shows that the speaker is afraid of being judged and maybe not accepted into heaven.

These religious references make the song feel more emotional and deeper, because they connect to big themes like sin, punishment, and hope for redemption.

c. Literary Intertextuality: Tragic Pride and Isolation

Some lyrics in the song are also connected to famous literature, such as:

- *"Just a puppet on a lonely string"*
- *"Sweep the streets I used to own"*

The line about the puppet reminds us of a line from Shakespeare's play: *"Life's but a walking shadow… a poor player that struts and frets his hour upon the stage."* This means that life is short, controlled by others, and sometimes meaningless just like a puppet on a string.

Another lyric, *"sweep the streets I used to own,"* is similar to the poem *Ozymandias* by Percy Shelley, which tells the story of a once-powerful king whose statue is now broken and forgotten in the desert.

These references help us see the speaker in *Viva La Vida* as a tragic character, like those in classic stories like someone who was once proud and powerful, but now feels alone, full of regret, and miserable. Even though the song doesn't mention these books directly, but the themes and emotions clearly match.

d. Visual and Artistic Intertextuality

In the *Viva La Vida* music video, we see a famous painting "*Liberty Leading the People* by Eugène Delacroix (1830)" behind the band. This painting shows the French people rising up in revolution led by a strong woman holding a flag. The picture represents freedom, protest and the fight against injustice. By using this image, Coldplay might give the song a political message that when power becomes injustice, people will eventually fight back.

This connection to other aspects helps us understand that the fall of a king in the song is not just a personal story. It's also a part of bigger events in history and society. The painting makes the message of the song feel stronger and more universal.

3. Meaning Synthesis (Multimodal Interpretation): Interpreting Text and Visual Signs in *Viva La Vida*

As it is said before that Coldplay's *Viva La Vida* is not just a song. It is a story told through music, lyrics, pictures, and movement. To understand the layered meaning, we need to look at how all these elements work together. This is what authors call multimodal interpretation, or combining many types of signs (like sound, image, color, and gesture) to reveal certain messages in the song.

In Coldplay's *Viva La Vida* music video, meaning is created by combining different elements like music, body movements, costumes, and symbols. According

to Kress and van Leeuwen, visual texts (like videos) have their own kind of "grammar," which means they follow certain rules to help the audience understand the message.

The *Viva La Vida* video which is about 4 minutes long uses these modes together to tell a story about power, loss, and reflection. We see things like roses bloming and dying, old clothes, broken TVs, and the symbols of a church. These visuals, combined with the lyrics and music, tell the story of a king who once ruled but then fell. Another hidden message is about how power and identity don't last forever.

Below is an analysis based on specific times in the video, using ideas from multimodal semiotics and intertextuality.

At the beginning of the video, there are no pictures yet, only music. The sound music instruments and echoes create an emotional feeling right away.This kind of sound possibly helps prepare the audience to feel the mood of the story before they see anything. According to Kress & van Leeuwen, music like this works as a "modal anchor" which means it helps guide how we feel from the start.

Figure 1. Dark screen with sounds of drumbeats and strings

In this part of the video, we see a red rose bloom and then slowly die. This is believed to have a strong symbol. The rose shows natural beauty, but it also reminds us that everything beautiful will eventually fade and perish. The rose represents the king's past greatness and also his coming fall. The camera slowly zooms in on the rose, making us focus on it. This way helps viewers think about how power and beauty are not permanent, or they can disappear finally.

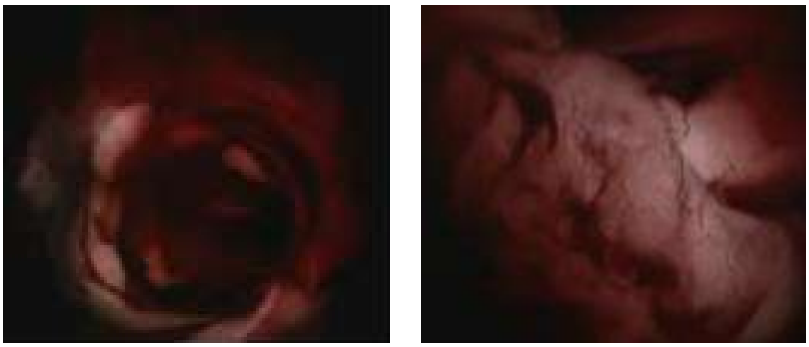

Figure 2. A blooming rose that wither, petals falling into darkness

In this part, we see Chris Martin's face up close. The camera focuses closely on him to make the moment feel personal, like he is thinking deeply. He points to his own eyes while singing *"Feel the fear in my enemies' eyes,"*. This gesture matches the lyrics and helps us understood the meaning more clearly. It shows how movement (gesture) and words (lyrics) work together to send the message. His serious facial expression and the way the camera shows him suggest that he was once powerful, but now feels weak or unsure.

Figure 3. Chris Martin in close-up pointing to his eyes

In this scene, the band members wear old and faded military-style clothes. These costumes symbolize lost power or fallen leadership. There is a red letter "V" on Chris Martin's shirt, which stands for *Viva* (life), but it is placed low on his body. This possibly shows that his energy or power is no longer strong. The colors in this scene are also important. The clothes use faded colors, and the fabric looks old. These details help show the idea of something once great that now become weak and meaningless. This supports Kress and van Leeuwen's idea that color is not just for decorations, but it also helps give meaning and feeling in visual messages.

Figure 4. Band members in old military clothes

In this part, we see a broken television next to Chris Martin. The TV represents media and how we remember history. The broken, old screen might show that the king's fate is now bleak or cannot be trusted. In multimodal meaning, the broken TV is a symbol that needs us to think about how truth can become confusing or

broken in today's media world. It also suggests that the king can no longer decide what people say or believed about him.

Figure 5. An old television screen

In this scene, when Chris Martin sings *"Just a puppet on a lonely string,"* he moves his body like a puppet. This gesture describes that he feels powerless and not in control of his own life. His actions match the lyrics and help the audience understand the meaning better. This is a good example of how body movement and words work together to send the same message. Here, his body becomes a symbol that shows he is being controlled by something we cannot see just like a puppet controlled by strings.

Figure 6. The singer in puppet-like movements

In this part, we hear the sound of a big church bell ringing. This sound usually means something serious like judgment or the end of something. In Western culture, the sound of bells is often used in religious events or when someone dies. So, the bell in this video gives a message that something religious or final is happening. The sound makes the scene feel more desperate, showing that the king is now facing his possible downfall or moral judgment.

Figure 7. bell sounding

In this scene, the white clouds open up in the sky and makes a circle. Chris Martin sings *"Saint Peter won't call my name."* The camera looks up, and Martin lifts his arms, looking like someone on a cross. This image is similar to pictures from Christian religion, where someone holy is shown in a cross. But here, it shows that he is being rejected not accepted as a saint or holy person. This reference to the "gate of heaven" not opening gives a strong message that he feels spiritually lost and left out


Figure 8. White clouds parting, Martin in cruciform pose

Chris Martin's body rises and then falls slowly, with his arms stretched out and screamed out. His movement shows both pain and a feeling of letting go. According to Kress & van Leeuwen, the way something moves like speed and direction also gives meaning. The slow-motion effect makes the moment feel longer and more emotional, like a final goodbye. The dark colors in the scene help show feelings of sadness and loss

Figure 9. Martin's body falling in slow motion

In the last scene, the band members stand still and face away from each other. This shows a feeling of separation or going in different directions. Rose petals fall again, like in the beginning. This makes the ending feel like in a circle, repeating the first image to show that the story has come to an end. The falling petals and the stillness of the band create a visual message—like a quiet way to say goodbye. There is no music or sound at all. But this silence is not empty, it has deep meaning. Kress & van Leeuwen call this a "resource of absence," meaning silence helps the audience reflect and feel that the story is over.

Figure 10. Band members facing away, rose petals falling

Using multimodal theory, we can see that *Viva La Vida* is more than just a music video. It's a rich story built with many signs—images, music, movement, words, and symbols. Coldplay uses all of these elements together to create a deep story about power, loss, regret or redemption. They all work together to help us think about how everything will not last forever and how people must face the truth about themselves

The implication of the song for language learning

Coldplay's *Viva La Vida* is not simply a song, but it can also help us learn English in a fun way. The lyrics use figurative language (like metaphors and symbols) and tell a clear story, which makes them useful for learning real English in everyday life.

The song can help students improve their vocabulary, grammar, pronunciation, and even critical thinking. When we study it using semiotic and multimodal analysis (looking at words, music, pictures, and meaning together), we get richer learning experiences where language, culture, and media come together.

With *Viva La Vida*, teachers can focus on different parts of the language—like word types (nouns, verbs, etc.), verb tenses (past, present), and British English pronunciation

Parts of Speech in the Song

The lyrics of *Viva La Vida* have many examples of nouns, verbs, adjectives, and adverbs that can help students learn grammar

There are a lot of nouns in the song, such as *world, seas, crowd, king, key, sword, mirror, shield,* and *Saint Peter*. Most of these are concrete nouns—words

that name real things we can see or imagine easily. This makes them easier for students to understand, especially when learning about history.

The lyrics also contain verbs, both in infinitive and past tense forms—like *rule, rise, gave, sleep, sweep, hold, discover, blew,* and *call*. Students can use these verbs to practice grammar and understand how verb tenses are used in real-life language.

There are also several adjectives (like *alone, old, wicked, shattered, honest*) and adverbs (such as *now, just, never, alone*) that make the lyrics more expressive. These words help students feel the mood of the song and understand the story of a king who has lost everything.

Tenses in the Song

The song uses different types of tenses like simple past, simple present, and present continuous.

Most of the lyrics are simple past, like *"I used to rule the world"*, *"I held the key"*, and *"I gave the word"*. These lines show that the singer is talking about the past. It was about the time when he had power but lost it.

But there are also some lines in simple present, like *"Now the old king is dead"*, and present continuous, like *"Roman cavalry choirs are singing"*. These present tense lines create a contrast between what happened before and what is happening now. This is helpful for showing how a story can move between past and present.

Teachers can use these examples to help students learn how to recognize different tenses, when to use them, and how they work in telling a story.

Pronunciation and Phonology

Because the singer, Chris Martin, speaks British English, this song is a good way for students to learn how British English sounds.

Here are some examples from the song:

- Rise – /raɪz/
- Castles – /ˈkɑːsəl/ (British people don't pronounce the "t")
- Choirs – /ˈkwaɪəz/
- Sword – /sɔːd/ (the "w" is silent)
- Wicked – /ˈwɪkɪd/

By learning how these words are pronounced and looking at their phonetic symbols, students can improve their speaking skills and become more aware of the sounds in English, and it helps learners pronounce English more confident.

Learning About Culture and Meaning

As seen in the pictures and lyrics, *Viva La Vida* tells a story filled with references to history, culture, and religion—like kings in Europe, revolutions, and Christian ideas.

These parts of the song can help students learn more than just language. They also help students think critically and understand different cultures.

Teachers can guide students to explore deeper meanings behind phrases like *"puppet on a lonely string"* or *"Saint Peter won't call my name."* These phrases are not only important in grammar or vocabulary, but also in understanding the background behind them.

This kind of learning builds multimodal literacy, which means understanding meaning through words, pictures, music, and symbols

CONCLUSION

Viva La Vida by Coldplay is not just a song. it tells a meaningful story power, loss, and personal reflection. The lyrics, music, and visuals work together to show the journey of a fallen king who once had everything but lost it all. The song uses simple but strong images to tell the story. For example, the line *"I used to rule the world"* shows that the king once had power, but now it is gone. The line *"Just a puppet on a lonely string"* means he no longer controls his life but he is controlled by others or by fate. Based on Barthes' theory of semiotics, these lines are not just words. They also express deep feelings like pride, sadness, and regret, they also reflect cultural ideas, like how power can fade. The story in the song is also connected to real history and famous literature. It reminds listeners of the French Revolution, Bible stories, and works by Shakespeare. The music video even includes a painting about a revolution. This is an example of intertextuality, when a song gets deeper meaning by using ideas from older stories. Visually, the music video uses strong images, colors, and body movements. A red rose that blooms and dies shows that power doesn't last forever. Chris Martin moves like a puppet or stands with open arms like a person on a cross, adding emotional depth. At the end, there is only silence, showing a sad but sad ending without words. Together, the lyrics, video, and references give one clear message: power is temporary, and even strong people can fall. But the song also gives a sense of reflection and hope for forgiveness. Besides the message, the song is also helpful for learning English. It uses different verb tenses, important vocabulary, and English pronunciation. It also helps learners think critically by finding hidden meanings in the language. This makes it a great tool for both language and critical thinking.

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Exploring the Use of Media in Teaching Indonesian Language Subject in Elementary School

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Abstract

The use of learning media plays a crucial role in improving the effectiveness of Indonesian language instruction in elementary schools. This study aims to explore the application of various learning media in teaching Indonesian language subject at the elementary level, along with the challenges faced by teachers. The research employs a qualitative descriptive approach, involving elementary school teachers as subjects. Data were collected through observation, interviews, and document analysis, and analyzed using thematic analysis. The findings indicate that the media used by the elementary teachers are audio, video and audiovisual media. However, several challenges were identified, including limited access to technology, lack of teacher training, and inadequate learning materials. Addressing these issues requires improved teacher competency, sufficient technological infrastructure, and better curriculum integration. The study highlights the importance of selecting appropriate media to support language skills development of students.

Keywords: Elementary school, Teaching Indonesian language subject, Using Media in Teaching

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INTRODUCTION

Teaching Indonesian language at the elementary school level has an essential role in building and developing students' language skills, including aspects of listening, speaking, reading, and writing. Indonesian language as a core subject not only plays a role in developing language skills but also builds critical thinking skills and an understanding of national cultural values. However, various educational evaluations show that the quality of Indonesian language learning at the elementary level still faces various challenges, both in terms of teacher competence, the use of learning media, and the approaches used. This has a direct impact on the low literacy achievement of students.

In the context of elementary school education, the use of teaching media has great potential to improve the quality of education and student engagement. One way that can increase the effectiveness of learning is by utilizing appropriate learning media. The use of appropriate media not only helps deliver material to be more interesting but also increases students' understanding and motivation in learning (Fadilah, 2019; Ardhi et.al., 2024).

The use of media helps teachers in delivering contents of learning materials that have not been seen by the students, for example the snow. By using media, students who have not seen the snow can imagine its shape. Teaching abstract things can be more interesting and got more attention from the students when teaching by using media (Hanif, 2019; Damayanti et al., 2025). Teachers can increase and direct students' attention so as to motivate them, and can overcome sensory, spatial, and temporal limitations, as well as provide uniformity of observation and perception, and can also be used as a control for the direction and speed of learning (Supartini, 2016; Hardianto et.al., 2024; Panduwinata &Az-Zahro, 2024).

Media have influenced the level of students' comprehension. By using media, the students not only listen to the teacher explanation, but also can see the images or videos played. Students can understand the materials easier (Rakhman, 2023).
In its implementation, there are various challenges faced by teachers in optimizing learning media, such as limited access to technology, lack of training for teachers, and media availability that is not fully aligned with the curriculum. Schools located in areas with limited infrastructure often experience barriers in utilizing technology-based media, such as animated videos, podcasts, and interactive applications (Nuramelyah et al., 2023). In addition, not all teachers are competent in selecting and implementing effective learning media.

The use of media in teaching also has negative effects if the teacher cannot use it effectively. In choosing the media, teachers must be able to select the appropriate media for a specific topic, because not all topics can be explained using learning media, and not all learning media are capable of clarifying a concept (Supartini, 2016). Copyright infringement and plagiarism can also occur when teachers use online material without permission (Lestari & Wardhani, 2024).

In conducting research related to barriers and strategies for utilizing media in Indonesian language learning at the elementary school level, several relevant studies can be highlighted. One of them is a study conducted by Mala and Hamzah, which discusses the challenges in teaching Indonesian at elementary schools. This study focuses on identifying the challenges faced by teachers in the teaching process and providing solutions to overcome them (Mala & Hamzah, 2024). The study mentions that the lack of access to adequate learning media is one of the significant barriers.

Another challenge in using media for teaching is the limitation of time and resources, which often prevents teachers from implementing more innovative learning methods. Research shows that limited time can restrict the depth of learning experiences when using teaching media, while varying levels of student attention and interest also affect the effectiveness of media use in learning (Cahya & Purnanto, 2023). To solve problems in using media for teaching in elementary schools, including integrating interactive and engaging learning media into the curriculum, ensuring accessibility, and providing training for teachers to effectively utilize these tools, especially during distance learning (Lumbantobing, et.al., 2023).

Research on the obstacles and strategies for utilizing media in Indonesian language learning at the elementary school level has not been studied in detail. Existing research has mostly discussed the challenges of using media in teaching, rather than discussing strategies for overcoming these challenges. Furthermore, similar research has focused on the selection and development of appropriate learning media. The selection of learning media is a crucial step in ensuring

effective teaching. Media must be age-appropriate, engaging, and aligned with the curriculum. For example, video media has been proven to significantly enhance students' understanding of concepts and information retention, making it a valuable tool for elementary school instruction (Alwi & Agustia, 2024). Similarly, interactive media, such as animations and educational games, can increase student participation and motivation (Rahmawati, 2023).

The urgency of this research lies in the importance of optimal strategies in the application of learning media to improve the effectiveness of Indonesian language subject learning in elementary schools. Therefore, this study aims to identify the types of learning media that have been applied, explore the obstacles faced by teachers in the application of media, and develop recommendations for strategies for using media that are more effective and in accordance with student needs.

RESEARCH METHOD

This is descriptive qualitative research focusing to explore the use of learning media in the process of teaching Indonesian language subject in elementary schools. The main focus of the research is to observe, identify and describe the implementation of learning media used, as well as the challenges faced by educators in its application. The scope of this research includes various types of learning media applied in Indonesian language subject. The object of the research consists of learning media used by teachers in developing students' language skills, both in the aspects of listening, speaking, reading, and writing.

This research was conducted in state elementary schools in West Pontianak which is 22 numbers. The research subject is the elementary school teachers who teach Indonesian language subjects. The teachers who participated in this study were selected purposively at random from 22 different schools. Two teachers were selected from each school based on the criteria of having taught for at least two years and having used a variety of learning media in Indonesian language subject.

Data collection in this study is conducted through observation, interview, and documentation study. Observation is conducted to directly observe the use of media in teaching and learning activities. The researcher join in the class which the participant’s teach twice and record the activities in the class. Then, the researcher writes down the media used by the teachers and the obstacles found in the implementation of the media.

Interviews are conducted with teachers to obtain information about their experiences in using learning media, obstacles faced, and strategies used to overcome these obstacles. In addition, documentation studies are conducted by collecting data related to teaching materials and lesson plans used by teachers.

Data analysis in this study applied thematic analysis techniques. Defines thematic analysis techniques as the method for identifying, analyzing, and reporting the data (Atmazaki et.al, 2023; Braun & Clark, 2006). They are 6 stages in thematic analysis techniques, i.e. familiarizing with data. Generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the report. Researcher transcript the data from interview and read the result of transcript to find out the pattern. Then, the researcher finds out the interesting point of the interview. The points are arranged into potential themes. The themes are reviewed and refined to decide whether the themes are used in the result. The researcher assures the

themes answering the research questions. Finally, the researcher connects the result to the previous findings of relevant research.

RESULTS AND DISCUSSION

This research has a purpose to find out types of teaching media that have been applied, explore the obstacles faced by teachers in the application of media, and develop recommendations for strategies for using media that are more effective and in accordance with student needs.

1. Types of teaching media

It was found that various types of learning media have been applied in learning Indonesian in elementary schools. The learning media used include audio, visual and audiovisual media. Each type of media has its own advantages in helping students understand the material being taught. Various types of media enable customized educational experiences, accommodate different learning preferences, and improve overall academic performance (Handini, et. Al., 2024).

In the listening aspect, audio media such as podcasts and voice recordings help students in practicing their concentration and understanding of spoken language. Some teachers using podcasts with folklore, fairy tales, and interview content to improve students' listening skills in a more interesting and interactive way. Podcasts effectively helped improve the learners' listening skills. Specifically, the students overcame the common difficulties that hinder their English listening comprehension, such as limited vocabulary, unfamiliar grammar, poor comprehensive listening ability, and pronunciation challenges (Thi, 2024).

In speaking skills, the use of media such as hand puppets, picture cards and animated videos is proven to increase students' confidence in expressing their opinions orally. Teachers report that students are more active in speaking when they are given the task to role-play using hand puppets, which also helps them develop vocabulary and good sentence structure.

In learning to read, the use of visual media such as flashcards and big books greatly helps students in recognizing letters, syllables and understanding the meaning of reading. Students who learn with flashcards find it easier to recognize difficult words than those who only use plain textbooks. In higher grades, storybooks and comics are used to improve reading comprehension as well as students' interest in the teaching material.

In writing, media such as picture series and pop-up books help students to organize text in a more structured way. Teachers who used picture series reported that students found it easier to develop ideas and write stories based on the pictures they saw. This proves that interesting visualizations can motivate students to practice writing more creatively.

2. The obstacles faced by teachers in the application of media

The results show that the use of learning media has a positive impact in improving students' language skills in elementary schools. This finding is in line with research conducted by Nuramelyah et al. (2023), which states that technology-based media such as animated films significantly improve students' listening skills. Similarly, a

study by Lestari and Fatonah (2021) found that the use of podcasts in listening learning can improve students' focus and their understanding of spoken language.

On the reading aspect, this study also supports Rahman and Haryanto's (2014) findings, which show that the use of flashcards can help low-grade students recognize syllables and read more fluently. Storybooks and comics are also proven to increase students' interest in reading and enrich their vocabulary. Marwati and Basri (2018) found that the use of storybooks in reading learning can significantly improve students' reading comprehension.

In speaking skills, the use of hand puppets and posters has a positive impact in increasing students' courage in speaking in front of the class. This finding is in line with research conducted by Sofi and Praheto (2023), which showed that interactive media such as hand puppets were able to improve students' speaking skills more effectively than conventional methods.

However, in addition to the benefits, this study also revealed some challenges faced by teachers in implementing learning media. The main obstacle found is the limited technology in schools, especially in remote areas, which makes it difficult to implement digital-based media such as animated videos and interactive applications. Teachers in areas with limited technological infrastructure have to find other alternatives, such as the use of printed images and simple teaching aids.

In addition, the lack of training for teachers in utilizing learning media is also a major challenge. Many teachers report that they have not received sufficient training on how to select and apply learning media that are appropriate to students' characteristics. As a result, some media that can actually support learning are not optimally utilized. Bua (2022) also mentioned that teacher training in the utilization of learning media is still an aspect that needs attention to make the integration of media in learning more effective.

School budget limitations are also an obstacle in providing quality learning media. Many schools have difficulty in purchasing supporting devices, such as projectors, computers, or high-quality books. Therefore, teachers often have to innovate by making simple learning media but still effective in improving students' understanding.

3. Strategies for using media that are more effective and in accordance with student needs

To overcome these obstacles, several strategies are needed to optimize the use of learning media. One solution that can be implemented is continuous teacher training in the utilization of learning media. Teachers who have skills in using various types of media will more easily adapt learning according to school conditions and student needs.

In addition, the development of local-based learning media is also an alternative that can be applied. For example, teachers can use materials available around the school to make simple learning media. This approach has been proven effective in some areas that have limited access to modern technology.

Supporting from the government and educational institutions is also needed to improve technology infrastructure in schools. With better access to digital learning media, it is expected that Indonesian language learning in elementary schools can be more innovative and interactive.

The results of this study provide insights for teachers, principals and policy makers in developing more effective learning strategies. By understanding how learning media can improve students' language skills, teachers can choose the media that best suits their students' needs as well as their school conditions.

In addition, this study also provides recommendations so that teacher training in the utilization of learning media can be given more attention. Teachers who receive regular training will be better prepared to integrate various media into the learning process.

Furthermore, this study also highlights the importance of developing media that are more affordable and in line with the curriculum. With learning media that is more accessible and easier to use, it is expected that every student can get the maximum benefit in the teaching and learning process. The appropriate strategies can be designed to optimize the teaching and learning process. The use of media that suits students' needs not only improves their language skills but also helps to create a more interactive and enjoyable learning experience.

The findings of this study demonstrate the significant role of instructional media in supporting Indonesian language learning at the elementary level. When interpreted in light of prior research, these findings align with previous studies that emphasize the importance of integrating diverse media formats to accommodate students' different learning needs and enhance language acquisition. Studies such as those by McNamara, D. S., & Shapiro, A. M. (2005) and Lee, E., & Hannafin, M. J. (2016) reinforce the notion that media not only facilitate comprehension but also promote engagement and motivation, particularly when tailored to the specific skills being developed. This study further confirms that interactive and contextualized media—whether visual, audio, or audiovisual—can improve learning experiences and foster active student participation in the classroom.

However, several limitations emerged during the study that warrant critical reflection. One of the primary constraints is the unequal access to adequate infrastructure, especially in schools located in remote or under-resourced areas. These conditions often hinder the use of digital or more sophisticated media tools, compelling teachers to rely on simpler, sometimes less effective, alternatives. Additionally, there is a notable gap in teachers' preparedness to utilize various types of media optimally, often due to the lack of targeted training and limited professional development opportunities. Financial constraints also restrict schools' ability to procure or develop quality learning media, forcing educators to improvise with limited materials. These limitations indicate the need for systemic improvements to support effective media use across different learning contexts.

While the results of this study are context-specific to Indonesian elementary schools, particularly those with limited resources, the challenges and potential solutions identified may be relevant in other regions facing similar educational conditions. However, caution is needed when generalizing the findings, as factors such as curriculum standards, teacher competencies, and local policies may vary widely. Still, the implications drawn from this research are meaningful for various stakeholders. Teachers are encouraged to continue adapting and selecting instructional media based on students' developmental stages and contextual realities. Policymakers and school administrators are called to prioritize funding for educational resources and teacher training, particularly in disadvantaged settings. Furthermore, this study highlights the need for future research that explores the

long-term impact of media use in literacy development and the adaptation of localized or low-cost media strategies to enrich classroom instruction.

Overall, the discussion remains firmly aligned with the research's original aim, namely to explore the application of instructional media in the teaching of Indonesian and to offer practical guidance for improvement. By understanding both the benefits and constraints of media use in real classroom situations, educators and policymakers can move toward more inclusive, responsive, and sustainable teaching practices that support student learning in meaningful ways.

CONCLUSION

This research founds that the learning media used by the elementary teachers in west Pontianak are audio, visual, and audiovisual media. Audio is used in listening skill, visual is used in speaking and reading skill, and audiovisual is used in writing skill. The use of media has a positive impact in improving students' language skills. The obstacles found in implementing media for teaching are limited technology in schools, the lack of training for teachers in utilizing learning media, and school budget limitations. To overcome the obstacles, the strategies use are giving the training to the teachers, developing the local-based media, and finding support from the government.

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Diffusion of Innovations in the Implementation of Assessments Through Google Forms

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Abstract

This study employed a qualitative descriptive approach, supported by a structured Likert-scale questionnaire distributed online to 20 tutors at LBB YSY PRIVATE. While quantitative instruments were used for data collection, the primary emphasis was placed on the qualitative interpretation of tutors' perceptions and experiences regarding digital assessment implementation. The analysis process involved categorizing Likert-scale responses to identify prevailing patterns using descriptive statistics, followed by a thematic analysis to uncover deeper qualitative insights from the identified trends. This combined analytical approach allowed for systematic documentation of response frequencies while preserving the depth and complexity typical of qualitative research. The results provide both measurable patterns and a nuanced understanding of tutors' experiences with Google Forms, highlighting aspects such as perceived efficiency, challenges encountered, and levels of technology acceptance. This hybrid methodology proved particularly valuable in educational technology research, where both empirical data and experiential insights are crucial for a comprehensive understanding.

Keywords: Assessment, Google Forms, digital evaluation tools, educational technology adoption

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INTRODUCTION

Educational assessment has undergone significant transformation with the integration of digital tools, offering new possibilities for efficient and data-driven evaluation (Zhao et al., 2023; Pradana, 2023). Platforms like Google Forms demonstrate clear advantages over traditional paper-based methods including automated scoring, real-time feedback, and reduced administrative burdens (Wijaya & Prasetyo, 2021; Putri et al., 2022; Nawawi &Sari, 2024) yet their adoption in private tutoring contexts remains underexplored and potentially challenging. This gap is especially relevant following the rapid digitalization of education during and after the COVID-19 pandemic, along with Indonesia's implementation of the Merdeka Curriculum emphasizing technology integration.

Current literature on digital assessment largely focuses on formal educational institutions, overlooking unique circumstances in private tutoring centers like LBB YSY PRIVATE. These centers face distinct challenges, such as limited technological infrastructure, diverse digital literacy levels among tutors, and the need to address varied learner needs (Santoso & Nugroho, 2020). Furthermore, recent studies on technology adoption frameworks highlight the need to adapt innovation diffusion theory to non-formal educational settings, particularly considering infrastructure and cultural factors in emerging economies (Rahman & Sari, 2021; Putra & Dewi, 2022).

This study addresses these gaps by examining tutors' perceptions and experiences with Google Forms through three lenses: (1) identifying adoption drivers and barriers specific to private tutoring, (2) evaluating the tool's impact on assessment efficiency and quality, and (3) developing practical implementation strategies aligned with Indonesia's educational digitalization goals. Employing a mixed-methods approach combining quantitative surveys and qualitative analysis, the research offers nuanced insights into how digital assessment tools reshape evaluation practices beyond formal classrooms.

The findings contribute to both theory and practice by extending innovation diffusion frameworks to private tutoring contexts and offering evidence-based recommendations for similar institutions navigating digital transitions. As education systems worldwide increasingly adopt technology-mediated solutions, this study provides timely insights into opportunities and challenges in implementing accessible digital assessment tools in resource-constrained environments.

RESEARCH METHOD

This study adopts a qualitative descriptive research approach to examine tutors' perceptions and experiences in implementing Google Forms-based assessments at LBB YSY PRIVATE. While employing structured questionnaires with Likert-scale items for initial data collection, the research maintains its qualitative orientation through thematic interpretation of response patterns rather than statistical analysis. This approach aligns with recent conceptualizations of qualitative descriptive research that emphasize understanding participants' lived experiences through meanings and interpretations rather than numerical data (Sandelowski, 2019; Kim et al., 2021).

Data collection involved distributing Google Forms questionnaires to all 20 tutors at the institution during November 2023. The questionnaires contained both closed-response items using a 5-point Likert scale (ranging from Strongly Disagree to Strongly Agree) and open-ended questions designed to elicit detailed narrative responses about tutors' assessment experiences. This mixed instrument design allowed for broad participation while preserving opportunities for qualitative depth (Holloway & Galvin, 2020).

The analysis process emphasized qualitative interpretation of the data. Likert-scale responses were examined for general trends and patterns but without statistical computation of averages or percentages. Instead, these quantitative elements served as supplementary indicators to contextualize the richer qualitative data obtained from open-ended responses. The narrative data underwent thematic analysis

following Braun and Clarke's (2022) updated framework, involving repeated reading of responses, initial coding, theme development, and final interpretation. This approach maintained the study's qualitative integrity while acknowledging the practical benefits of structured data collection.

Methodological rigor was ensured through several strategies. Credibility was enhanced by prolonged engagement with the research context, including preliminary observations of assessment practices at the tutoring center. Transferability was supported by providing a thick description of the institutional setting and participant characteristics. Dependability was addressed through maintaining an audit trail of analytical decisions, while confirmability was strengthened by researcher reflexivity practices documenting potential biases (Nowell et al., 2017; Shenton, 2020).

The study's ethical considerations included obtaining informed consent from all participants, ensuring voluntary participation, and protecting confidentiality through data anonymization. While the use of structured questionnaires might superficially suggest quantitative methods, the research design remained fundamentally qualitative in its philosophical orientation, analytical approach, and intended outcomes aiming for deep understanding rather than measurement or generalization. This methodological approach proved particularly appropriate for exploring the complex, context-dependent experiences of tutors adapting to digital assessment tools in their professional practice.

RESULTS AND DISCUSSION

Result

After distributing questionnaires to 20 tentors at LBB YSY PRIVATE, the following data were obtained:

Table 1. Results of LBB YSY Private Tentor responses to the Assessment

Statement	SA	D	LA	A	SA
Tutors are required to have assessments in each chapter of the subject as a means of measuring the level of understanding of students of a material	0	0	0	13	7
Internet Network Signal is the Main Constraint Factor in Using the Google Forms Application	0	0	1	6	13
Assessments will be more effective if done offline/manually	1	3	9	3	4
Assessment Using Google Forms Can Minimize the Use of Paper	0	0	4	2	14
In the modern era, assessments using Google forms are commonplace	0	1	1	13	5
All Today's Tutors Understand How to Use Google Forms	1	1	6	9	3
All tutors must have a Google account if they want to access the assessment application using Google Forms	0	0	1	8	11

Assessment will be more effective if done online through Google Forms	1	0	6	4	9
Not All Today's Tutors Understand How to Use Google Forms	1	1	11	6	1

The rating scale used in the questionnaire consisted of five options: *strongly disagree* (SD), *disagree* (D), *less agree* (LA), *agree* (A), and *strongly agree* (SA). The findings for the statement "Not all tutors currently understand how to use Google Forms" show that most respondents selected *less agree* (11 respondents), *agree* (6 respondents), and only a few chose *strongly agree* (1 respondent). This indicates a variation in the level of technological proficiency among tutors, particularly in the use of Google Forms as a digital assessment tool. Although the majority of tutors did not fully agree with the statement, the presence of responses indicating agreement suggests that understanding of technology use is not yet evenly distributed. These differences may be due to factors such as age, technological background, or prior experience using digital platforms. The implication of these findings is the need for training or technical assistance for tutors so that all teaching personnel are able to utilize Google Forms optimally and consistently in implementing digital assessments.

From the data above, the results of the answers to each question are detailed as follows:

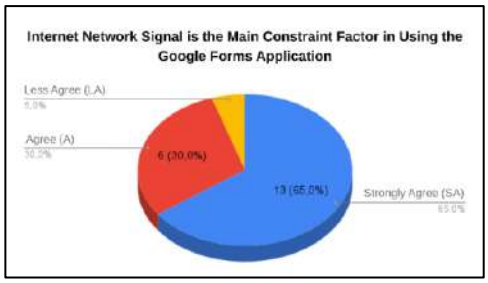

Figure 1. Constraint factors

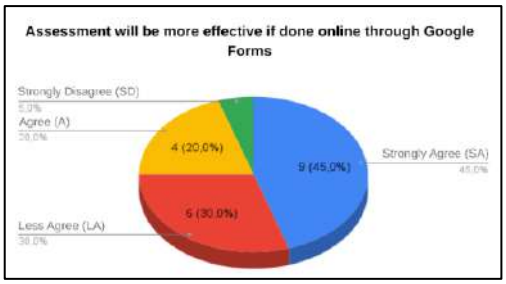

Figure 2. The effectiveness of online assessments

The study of 20 tutors at LBB YSY PRIVATE reveals critical insights into digital assessment implementation. A unanimous 100% agreement on the necessity of chapter-based assessments underscores the pedagogical value of regular evaluation, aligning with current evaluative learning frameworks. While 65% of tutors (45% strongly agreeing) endorse Google Forms as effective citing advantages like paper reduction (85%) and alignment with modern practices (75%) the 35% reservation rate highlights persistent challenges. Notably, 80% identify unstable internet as the primary barrier, suggesting infrastructure limitations disproportionately hinder adoption. The apparent contradiction in digital literacy statements (between universal and partial understanding) likely reflects varying competency levels, indicating that while basic operational knowledge may be widespread, advanced feature utilization remains limited. These findings position the institution in the "early majority" phase of innovation diffusion, where perceived benefits coexist with implementation barriers.

To address these challenges, a multi-tiered approach is proposed. First, infrastructure development should occur in phases: immediate implementation of offline functionality for low-connectivity areas, medium-term partnerships with ISPs for bandwidth subsidies, and long-term advocacy for government-funded ed-tech infrastructure. Second, differentiated training programs should be established, including mandatory basic certification (form creation, response analysis) and optional advanced workshops on data visualization, HOTS question design, and automated feedback systems. Third, assessment design requires optimization through standardized templates (70% uniform items for benchmarking, 30% customizable for subject-specific needs) and pilot testing of AI-assisted rubric scoring. These measures aim to bridge the gap between technological potential and practical implementation, ensuring equitable access and pedagogical effectiveness.

The study's findings align closely with recent innovation diffusion perspectives, demonstrating how digital assessment tools like Google Forms are adopted in educational settings. The data reveal a classic early majority adoption pattern, where 65% of tutors recognize the tool's relative advantages in efficiency and environmental benefits, while 35% remain hesitant due to compatibility issues particularly internet instability affecting 80% of users. This infrastructure barrier extends the concept of observability, as inconsistent access prevents tutors from fully witnessing the technology's benefits. The apparent contradiction in digital literacy self-assessments suggests "re-invention", where educators adapt tools to minimal functionality rather than leveraging their full potential. These findings contribute to innovation theory by highlighting how resource-constrained environments modify standard diffusion patterns, emphasizing that infrastructure readiness serves as a critical threshold before perceived usefulness can drive widespread adoption. These insights also suggest that traditional diffusion models may need adaptation for Global South contexts, where infrastructure limitations interact with training gaps to create unique adoption challenges. Future research should explore whether this modified adoption pattern applies to other educational technologies in similar contexts.

The study highlights that successful digital assessment integration requires addressing both technical and human factors. While the environmental benefits (paper reduction) and cultural readiness (modern practice alignment) are evident, systematic monitoring through quarterly connectivity audits and bi-annual competency assessments will be crucial for sustained adoption. Future research should employ longitudinal mixed methods to track adoption patterns across varying infrastructure contexts, particularly examining how socioeconomic factors mediate implementation success. By framing digital assessment adoption through the lens of innovation diffusion, this analysis not only clarifies current adoption barriers but also provides a roadmap for institutions navigating the transition from conventional to technology-enhanced evaluation systems. The findings ultimately advocate for a balanced approach that leverages digital tools' efficiency while preserving pedagogical rigor and equity.

Discussion

The research findings from 20 tutors at LBB YSY PRIVATE indicate that digital-based assessments, particularly those conducted through Google Forms, are more effective than conventional manual or offline methods. Google Forms has been

proven to improve time efficiency, reduce paper usage, and support the development of educators' information technology skills. These results align with the findings of Ilahi et al. (2025), who revealed that the use of digital media in learning evaluation can encourage active educator engagement and accelerate the data processing process. Most tutors demonstrated a good understanding and regular use of Google Forms, reflecting its relevance in today's digital era.

Based on these findings, it is recommended that educational institutions especially tutoring centers systematically integrate digital media like Google Forms into their learning evaluation processes. To facilitate effective adoption, institutions should provide regular training for educators to master both basic and advanced features, such as integration with Google Sheets for data analysis. Additionally, educational policymakers should promote the expansion of digital infrastructure and encourage collaborative efforts between institutions and local governments to enhance internet accessibility.

A significant limitation identified in this study is the unstable and limited internet network, which hampers the smooth implementation of online assessments. This technical barrier must be addressed to fully realize the benefits of digital assessments. Improving internet infrastructure and providing educators with continuous technical support are crucial steps to overcome this challenge.

Future research should explore the integration of digital assessments more extensively and systematically across various educational institutions beyond LBB YSY PRIVATE. Studies could investigate the long-term impact of digital media adoption on learning outcomes and explore strategies for overcoming infrastructural challenges in different local contexts.

Since this research was conducted specifically at LBB YSY PRIVATE, the findings reflect the particular conditions of this institution. To enrich and generalize the results, similar studies should be conducted in other tutoring centers or educational settings with varying geographic and infrastructural backgrounds.

CONCLUSION

The research results from 20 tutors at LBB YSY PRIVATE indicate that digital assessments using Google Forms are more effective compared to conventional methods, supporting the study's aim to assess their application. Although Google Forms improves efficiency, minimizes paper consumption, and enhances digital literacy, its effectiveness is limited by unstable internet connectivity. To maximize its benefits, the study suggests integrating digital assessments institutionally, providing ongoing educator training on advanced functionalities, and upgrading infrastructure to ensure reliable internet access, especially in remote areas. These steps will promote more effective and equitable adoption of technology-based assessments in contemporary education.

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The Effect of Using Minecraft: Education Edition on Students' Conceptual Understanding and Collaboration

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Abstract

This study examines the effect of Minecraft: Education Edition on students' conceptual understanding and collaboration in Social and Natural Sciences (IPAS) learning. A quasi-experimental design with a pretest-posttest control group was used, involving 48 sixth-grade students from SDN Srambah. The sample was divided into an experimental group (Class VI A, 24 students) using Minecraft: Education Edition, and a control group (Class VI B, 24 students) receiving conventional instruction, selected through purposive sampling. Instruments included a conceptual understanding test and a collaboration questionnaire. Descriptive statistics showed a greater increase in the experimental group's scores. Data met assumptions for parametric testing based on normality and homogeneity tests. MANOVA results indicated a significant effect of learning media on both outcomes ($p < 0.001$). Further tests of Between-Subjects Effects revealed that the learning method accounted for 91.9% of the variance in conceptual understanding and 94.8% in collaboration. These results suggest that Minecraft: Education Edition is more effective than traditional methods in enhancing both cognitive and collaborative skills. The findings support constructivist learning theory, highlighting the benefits of interactive, student-centered environments in fostering active engagement and meaningful learning.

Keywords: Collaboration Skills, Conceptual Understanding, Game-Based Learning, Minecraft.

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INTRODUCTION

Education in the twenty-first century emphasizes the need for students to develop not only conceptual understanding but also higher-order skills such as critical thinking, problem-solving, and collaboration (Miterianifa et al., 2021; Thornhill-Miller et al., 2023). In the context of Science and Social Studies (IPAS) at the elementary level, conceptual understanding serves as a foundation that enables students to relate scientific concepts to real-life phenomena in their environment (Fradina et al., 2022; Komariah et al., 2023; Susandra et al., 2025). However, preliminary observations at SDN Srambah, located in Proppo District, Pamekasan Regency, reveal that many students still struggle to deeply comprehend IPAS material (Komariah et al., 2023; Ni Kadek Sinta Ulandari et al., 2024; Suprapmanto

& Zakiyah, 2024). Their learning tends to rely heavily on rote memorization rather than meaningful understanding of interconnected concepts. Furthermore, students' collaboration skills remain underdeveloped, as evidenced by their difficulties during group activities and classroom discussions.

Interviews with several students revealed that many find IPAS learning unengaging because it is still dominated by lecture-based methods and written exercises (Antonius, 2023; Priyatno, 2025). Students tend to be passive and less actively involved in the learning process (Tesfaye & Berhanu, 2015), which hampers their ability to explore concepts in depth (Morgado, 2010). When given group tasks, some students also admitted experiencing difficulty in communicating with peers, dividing responsibilities, or expressing their ideas. Most students prefer to work individually rather than collaborate, which limits their development of teamwork skills (Jaiswal et al., 2021; Tanisha et al., 2024).

To overcome these challenges and improve students' conceptual understanding and collaboration skills, game-based learning has emerged as a promising alternative (Adipat et al., 2021; Duncan, 2020; Muttaqien et al., 2021). One educational game that is increasingly used in classrooms is Minecraft: Education Edition. This game enables students to explore IPAS concepts through direct, immersive experiences in a virtual world. With its interactive features, students can build structures, conduct simulations, and complete challenges related to IPAS topics, such as the water cycle, ecosystems, or environmental conservation. This approach aligns with constructivist theory, which emphasizes that students learn more effectively through hands-on experiences and active engagement with their environment.

In terms of collaboration, Minecraft: Education Edition offers features that allow students to work together in a shared virtual environment, communicate effectively, delegate responsibilities, and solve problems as a team. This helps students practice idea sharing, joint decision-making, and appreciate the value of teamwork in achieving shared goals. Previous research has also shown that educational games can increase student motivation and engagement (Jaramillo-Mediavilla et al., 2024).

A study by Kemba et al. (2022) demonstrated that the use of a scientific inquiry-based approach significantly improved student learning outcomes in environmental pollution topics within IPAS. However, this approach has yet to fully integrate the potential of digital technology as an interactive learning medium, which becomes the focus of the present study.

Initial findings at SDN Srambah also indicate that students show a strong interest in technology-enhanced learning. Some students even reported that they better understand the material when it is delivered in a visual and interactive format (Fatimah & Seriwati, 2024; Jannah & Nuriana, 2024). While existing studies have explored the general benefits of digital media and educational games in enhancing student engagement and academic performance, few have specifically examined the use of Minecraft: Education Edition in the context of IPAS learning at the elementary level. Moreover, much of the existing literature emphasizes cognitive outcomes without delving deeply into collaboration skills in real classroom contexts (Lee et al., 2024). Therefore, this study seeks to fill this gap by evaluating the effectiveness of Minecraft: Education Edition in enhancing both conceptual understanding and collaboration among elementary students. The findings are

expected to contribute to the development of more engaging and effective instructional strategies, and to underscore the potential of educational technology in improving the quality of IPAS instruction (Karsenti & Bugmann, 2017; Lestari et al., 2025; Suryani et al., 2025).

RESEARCH METHOD

This research employed a quantitative methodology, utilizing a quasi-experimental framework, precisely a pretest-posttest control group design (Stratton, 2019). Two groups of sixth-grade students at SDN Srambah participated in the study. The experimental group received instruction using Minecraft: Education Edition in IPAS (Science and Social Studies) lessons, while the control group was taught using conventional methods such as lectures and textbook-based discussions. The research flow was carried out in five stages: (1) administering a pretest to both groups to assess their initial conceptual understanding, (2) implementing the treatment where the experimental class engaged in Minecraft-based learning and the control class continued with traditional instruction, (3) observing student collaboration during group activities in both groups, (4) administering a posttest to measure learning gains, and (5) distributing a motivation and perception questionnaire to the experimental group to gather feedback about their experience. This design allowed the researcher to measure and compare the effectiveness of digital game-based instruction with conventional teaching approaches in terms of conceptual understanding and collaboration skills.

The population of the study included all sixth-grade students at SDN Srambah, Proppo District, Pamekasan Regency. The sample was selected using purposive sampling based on the recommendation of the school principal and teacher. Class VI A, consisting of 24 students, was designated as the experimental group, while class VI B, also with 24 students, served as the control group. This selection was based on considerations of class equivalence in terms of academic ability and previous exposure to the subject matter.

The instruments used in this study consisted of a conceptual understanding test, a collaboration observation sheet, and a student motivation and perception questionnaire. The conceptual understanding test included both pretest and posttest items aligned with IPAS competencies to assess students' cognitive development before and after the treatment. The collaboration observation sheet was used to evaluate students' interpersonal behaviors during group work, including communication, participation, and teamwork. Meanwhile, the questionnaire—administered only to the experimental group—measured students' engagement, interest, and perceptions of the Minecraft-based learning experience.

Data were collected systematically through multiple methods. The pretest was given before the intervention to determine students' baseline conceptual understanding. During the learning sessions, observations were made on collaborative behaviors in both classes. After the intervention, the posttest was administered to measure learning improvements. In addition, the experimental group completed a motivation and perception questionnaire to provide further insights into the effectiveness of the learning media from the students' point of view.

Data analysis involved both descriptive and inferential statistical techniques. Initial analysis began with normality and homogeneity tests to ensure that the data

met the assumptions required for parametric testing. Once these conditions were satisfied, an Independent Samples T-Test was conducted to identify significant differences between the experimental and control groups' posttest scores. Descriptive statistics were used to analyze the observation data and student questionnaire responses. Furthermore, an N-Gain test was applied to determine the effectiveness level of the intervention, referring to the guidelines by Triyono et al. (2024), where the gain scores were interpreted to classify the magnitude of students' learning improvements.

RESULTS AND DISCUSSION

Research Results

Descriptive Test

This study analyzed two main variables, namely conceptual understanding and student collaboration, measured through pretests and posttests in two groups: the experimental class, which followed learning using Minecraft: Education Edition, and the control class, which received conventional instruction. The following are the descriptive statistical results of the pretest and posttest scores in both groups.

Table 1. Descriptive Statistics of Experimental Class

Variable	N	Mean	Std. Deviation	Minimum	Maximum
Pretest Concept	24	57.83	1.96	54	61
Posttest Concept	24	82.21	3.28	73	91
Pretest Collaboration	24	60.33	1.80	56	63
Posttest Collaboration	24	87.50	2.55	81	93

Based on the descriptive statistics of the experimental group consisting of 24 students, there was a significant increase after implementing Minecraft: Education Edition in the learning process. The average conceptual understanding score increased from 57.83 to 82.21, while the average collaboration skill score rose from 60.33 to 87.50. This increase indicates that the use of Minecraft: Education Edition had a positive impact on students' conceptual understanding and collaboration.

Table 2. Descriptive Statistics of Control Class

Variable	N	Mean	Std. Deviation	Minimum	Maximum
Pretest Concept	24	58.08	1.99	54	63
Posttest Concept	24	68.17	2.44	62	72
Pretest Collaboration	24	60.58	1.81	57	64
Posttest Collaboration	24	70.71	2.60	65	76

Based on the descriptive statistics of the control group, also consisting of 24 students, there was an increase from pretest to posttest, but not as large as in the experimental group. The average conceptual understanding score increased from 58.08 to 68.17, and the average collaboration score rose from 60.58 to 70.71. Although there was an improvement, the gain was relatively small, indicating that the conventional teaching method used in the control group did not have a

significant impact on students' conceptual understanding and collaboration compared to the use of Minecraft: Education Edition.

Normality and Homogeneity Tests

Before conducting a comparative analysis between the experimental and control groups, normality and homogeneity tests were carried out to ensure the appropriateness of using parametric tests. The results of the Shapiro-Wilk normality test are shown in the table below.

Table 3. Normality Test (Shapiro-Wilk)

Group	Variable	Statistic	df	Sig. (p-value)
Experiment	Pretest Concept	0.961	24	0.432
Experiment	Posttest Concept	0.953	24	0.295
Experiment	Pretest Collaboration	0.964	24	0.486
Experiment	Posttest Collaboration	0.958	24	0.387
Control	Pretest Concept	0.967	24	0.556
Control	Posttest Concept	0.950	24	0.267
Control	Pretest Collaboration	0.973	24	0.715
Control	Posttest Collaboration	0.962	24	0.472

Based on the Shapiro-Wilk test results above, all Sig. (p-value) values for each variable in both groups are greater than 0.05. This indicates that the pretest and posttest data for both conceptual understanding and collaboration variables are normally distributed.

Table 4. Homogeneity Test (Levene's)

Variable	Levene Statistic	df1	df2	Sig. (p-value)
Pretest Concept	0.216	1	46	0.644
Posttest Concept	1.732	1	46	0.195
Pretest Collaboration	0.127	1	46	0.723
Posttest Collaboration	1.438	1	46	0.237

Based on the table above, the significance values (Sig.) of all variables are greater than 0.05, indicating that there are no significant differences in variances between the experimental and control groups. In other words, the data from both groups have homogeneous or equal variances.

MANOVA Test

Multivariate Analysis of Variance (MANOVA) serves as a robust statistical method for assessing mean differences across two or more groups, considering multiple dependent variables concurrently. Its core objective is to maximize the differentiation between these groups by forming linear combinations of quantitative variables. In the context of this investigation, the null hypothesis (H_0) posits no statistically significant disparity between the experimental and control groups concerning their conceptual understanding and collaboration proficiencies. Conversely, the alternative hypothesis (H_1) proposes a significant distinction. The criterion for decision-making dictates that if the significance value (Sig.) falls below 0.05, the null hypothesis (H_0) is rejected, thereby indicating a notable effect;

otherwise, H_0 is retained. The outcomes of the MANOVA test are presented in the subsequent table.

Table 5. MANOVA Tests Results

Multivariate Tests[a]

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.999	16360.239[b]	2.000	45.000	.000
	Wilks' Lambda	.001	16360.239[b]	2.000	45.000	.000
	Hotelling's Trace	727.122	16360.239[b]	2.000	45.000	.000
	Roy's Largest Root	727.122	16360.239[b]	2.000	45.000	.000
Class	Pillai's Trace	.948	410.679[b]	2.000	45.000	.000
	Wilks' Lambda	.052	410.679[b]	2.000	45.000	.000
	Hotelling's Trace	18.252	410.679[b]	2.000	45.000	.000
	Roy's Largest Root	18.252	410.679[b]	2.000	45.000	.000

a. Design: Intercept + Class

b. Exact statistic

Based on the multivariate test results presented in Table 5, the instructional method (Class) had a statistically significant multivariate effect on the combined dependent variables: conceptual understanding and collaboration skills (Wilks' Lambda = .052, $F(2, 45) = 410.679$, $p < .001$). All four multivariate criteria (Pillai's Trace, Wilks' Lambda, Hotelling's Trace, and Roy's Largest Root) consistently indicated a significant impact. This confirms that the variation in learning outcomes is strongly associated with the use of different instructional media, particularly Minecraft: Education Edition. These results provide a foundation for further analysis using the Between-Subjects Effects test to determine the specific contribution of the instructional method to each dependent variable.

Table 6. Between-Subjects Effects Test

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	Conceptual Understanding	3383.521[a]	1	3383.521	521.486	.000
	Collaboration Skills	800.333[b]	1	800.333	830.421	.000
Intercept	Conceptual Understanding	216411.021	1	216411.021	33354.428	.000
	Collaboration Skills	14981.333	1	14981.333	15544.541	.000
Class	Conceptual Understanding	3383.521	1	3383.521	521.486	.000
	Collaboration Skills	800.333	1	800.333	830.421	.000

Error	Conceptual Understanding	298.458	46	6.488
	Collaboration Skills	44.333	46	.964
Total	Conceptual Understanding	220093.000	48	
	Collaboration Skills	15826.000	48	
Corrected Total	Conceptual Understanding	3681.979	47	
	Collaboration Skills	844.667	47	
a. R Squared = .919 (Adjusted R Squared = .917)				
b. R Squared = .948 (Adjusted R Squared = .946)				

Table 6 presents the results of the Between-Subjects Effects test, which further examines the influence of the instructional method on each dependent variable. The analysis shows that the class variable, representing the use of Minecraft: Education Edition, had a statistically significant effect on both conceptual understanding ($F(1, 46) = 521.486$, $p < .001$) and collaboration skills ($F(1, 46) = 830.421$, $p < .001$). The R^2 values indicate that 91.9% of the variance in conceptual understanding and 94.8% of the variance in collaboration skills can be explained by the learning method. These findings confirm that Minecraft: Education Edition is highly effective not only in enhancing students' cognitive performance but also in strengthening their collaborative abilities. The results support the integration of interactive and student-centered digital tools in IPAS learning to achieve more comprehensive educational outcomes.

Discussion

The findings of this study indicate that the integration of Minecraft: Education Edition in the IPAS (Science and Social Studies) learning process has a significant influence on improving both conceptual understanding and collaboration skills of elementary school students. This reinforces the premise that interactive digital tools can serve not merely as learning supplements, but as transformative media that align with the characteristics and needs of 21st-century learners.

Compared to the control group receiving conventional instruction, students in the experimental group exhibited not only a higher posttest mean score in conceptual understanding, but also greater gains in collaboration. These results demonstrate that Minecraft's open-ended, visual, and exploratory features facilitate active learning, allowing students to build and internalize concepts through direct engagement, peer interaction, and creative construction. This is consistent with previous research byKarsenti & Bugmann (2017), who found that game-based environments can foster cognitive development while simultaneously enhancing students' interpersonal competencies.

In line with Evi et al. (2024), who argued that generative learning supported by digital platforms promotes higher-order thinking skills, this study illustrates how Minecraft enables learners to explore, test, and refine ideas collaboratively. Its mechanics, which encourage autonomy and experimentation, mirror real-world

problem-solving contexts—making the learning process not only meaningful but also relevant to students' lived experiences.

Moreover, the significant effect sizes identified in this study ($R^2 = 0.919$ for conceptual understanding and $R^2 = 0.948$ for collaboration) affirm the pedagogical potential of digital game-based learning, particularly in fostering deeper engagement and sustainable learning outcomes. These findings are also aligned with the vision of Merdeka Belajar, which emphasizes learner-centered approaches, creativity, contextualization, and the use of technology to support holistic education (Hunaepi & I Gusti Putu Suharta, 2024; OECD, 2023).

This study also contributes practically to instructional design. Educators can take advantage of digital sandbox tools like Minecraft not only to deliver content, but to cultivate soft skills such as communication, teamwork, and self-directed learning. When students are involved in creating virtual models, negotiating roles, and reflecting on tasks, they are actively constructing knowledge within a socially meaningful context, in line with constructivist learning theory (Ardiansyah & Ujihanti, 2017; Kurt, 2021; Zajda, 2021).

In conclusion, Minecraft: Education Edition proves to be more than a recreational platform—it is a powerful educational medium that bridges cognitive learning with collaborative skill development. Educational institutions and policymakers are encouraged to embrace and integrate such tools into formal curricula as part of a broader strategy to achieve future-ready education, especially in elementary learning environments where foundational skills are being built.

CONCLUSION

The integration of Minecraft: Education Edition into IPAS (Science and Social Studies) learning significantly enhances students' conceptual understanding and collaboration skills, as evidenced by the strong effect sizes in this study. Rather than serving merely as a digital supplement, Minecraft functions as a transformative medium that aligns with the principles of constructivist learning and the demands of 21st-century education. The interactive, exploratory, and collaborative nature of the platform fosters not only cognitive development but also key socio-emotional competencies, making it highly relevant in the context of Indonesia's Merdeka Belajar vision. These findings imply that educational games, when thoughtfully implemented, can play a strategic role in reshaping instructional practices toward more student-centered, engaging, and skill-oriented approaches. Therefore, educators and policymakers are encouraged to explore the broader integration of digital game-based learning environments to support holistic student development, particularly at the elementary level where foundational learning attitudes are formed.

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The Impact of Utilizing Big Book-Based Learning Media on Student's Learning Interest and Conceptual Understanding of Acid-Base Chemistry Topics

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Abstract

This study explores the use of big book-based learning media and its impact on students' interest in learning and understanding of acid-base concepts in 11th-grade chemistry at SMAN 1 Ketapang. The research applies a quantitative approach with a quasi-experimental design. Observations revealed that students' learning interest and conceptual understanding of acid-base topics were still low. To measure the effect, an independent sample t-test was conducted. The results show a significance value of $0.000 < 0.05$ for both learning interest and conceptual understanding, indicating a significant improvement after using big book-based media. The findings demonstrate that big books not only effectively enhance students' motivation and comprehension but also make learning more engaging through visually appealing and well-structured content. This format allows students to read and understand material more easily, which stimulates interest and supports deeper understanding. Consequently, big book-based media can serve as an alternative solution for teachers aiming to improve students' engagement and conceptual mastery, particularly in challenging topics like acid-base chemistry. The study emphasizes the importance of integrating creative and visually rich learning materials to foster active learning and improve educational outcomes in science subjects.

Keywords: Big Book-Based Learning Media, Student's learning interest, Student's conceptual understanding

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INTRODUCTION

Education nowadays is viewed not only as the dissemination of knowledge and the development of skills but also as the realization of individual needs, desires, and capacities (Abdul et al., 2022). Hanifah Salsabila et al. (2020) state that one of the key components in recognizing and helping people develop critical and idealistic thinking is education. To create a satisfying personal and social existence, education is now seen as not only encompassing the dissemination of knowledge and the development of skills but also the realization of individual needs, desires, and capacities (Romdanih & Yuningsih, 2021). The capacity of education is not limited in meaning due to its complexity, which is reflected in its target audience, namely

humans (Manarfa & Lasaiba, 2024; Nisa Rani & Napitupulu, 2021; Zakaria et al., 2019; Zakharova et al., 2024). Education is followed by science, which is more closely related to educational theory, emphasizing scientific thinking. Both practically and theoretically, education and the science of education are interconnected, so they have worked together throughout human existence (Desi et al., 2022; Tatnall & Fluck, 2022). Education is crucial because it must be able to use learning to prepare people for intelligence, maturity, high competence, and noble character (Hikmatul, 2023).

Education can be improved by implementing effective teaching. Learning itself is an activity carried out intentionally and structured by teachers to students so that students engage in learning activities (Festiawan, 2020). In teaching, teachers strive to help their students learn. Teachers provide new information to students through learning activities. To cultivate student's interest and critical thinking skills, teachers must always be ready to adjust their teaching methods to meet the requirements and differences of each student (Fithriyah, 2024; Ramdani et al., 2023). Digital-based learning has become one of the methods that can be utilized to tackle the ever-evolving digital challenges in line with the times (Wulandari et al., 2023). The use of media applications in the classroom can no longer be overlooked because so many teachers have incorporated media applications in various forms into their lessons, whether graphic media, audiovisual, or visual through electronics (Budianti & Fitriani, 2020).

Another important factor that often becomes the focus of initiatives to improve educational standards is student's learning interest. Learning that is considered successful is learning that can enhance student's interest in studying. Student's learning interest is the tendency of the mind towards something that consists of feelings of attention, pleasure, seriousness, motives, and goals in achieving objectives in learning topics (Nugroho et al., 2020; Siti & A. Sobandi, 2016). Students with a high level of interest in learning usually exhibit significant intrinsic motivation, leading to improved academic performance. even though students who are motivated to learn may be more engaged in their learning, this does not guarantee that they will perform better. Student's approach to academic obstacles can be influenced by their level of learning understanding, particularly in their intrinsic abilities, which can be enhanced by interest in learning (Lubis et al., 2024; Naufal Wala, 2025; Nurjannah et al., 2025). Thus, the use of media in the classroom can be beneficial and offer extraordinary advantages in helping students learn, such as increasing their motivation to study and developing their ability to think critically (Harsiwi & Arini, 2020).

Once a student's interest in learning has been formed, the student will develop the ability to understand the topics being taught easily (Hidayah & Fiki, 2016; Utami et al., 2025; Zuhri & Millati, 2023). Understanding itself is the ability possessed by students to absorb, comprehend, and apply the knowledge they receive in solving various problems that arise in daily life (Khamsatul Muharrami et al., 2021). Student understanding can also be defined as the level of ability of students to comprehend a concept or meaning accompanied by facts or knowledge they know in real life (Hidayat & Aripin, 2019; Latva-aho et al., 2024). Students who can understand a lesson will be asked to demonstrate that they comprehend the basic relationships between ideas or facts from the topics being taught (Istifada Lailatil Musyarrofah, 2024; Nichla et al., 2024). The conventional and teacher-centered

learning methods are one of the triggers for student's low understanding of the taught topics. This is because students are not directly involved in processing and following the lessons, especially in the subject of acid-base chemistry, causing them to become passive and unable to understand the topics taught by the teacher. Referring to this issue, the use of appropriate learning media such as big books can enhance student's understanding of the subject, especially in acid-base topics.

The use of Big Book refers to a large version of a book with large letters and illustrations, specifically designed so that students can explore the text and visuals, depicting concepts related to the writing as one of the strategies for building meaning. Big book learning media can better illustrate instructional topics and explain some of the terminology used in the curriculum compared to textbooks (Natasya et al., 2025). Big book learning media is a type of media that includes unique features, such as larger text and engaging illustrations, to facilitate ease of shared reading among teachers and students during the learning process. Among the unique features of this big book format are bright colors and captivating illustrations (Fauziah & Puspitasari, 2025). The big book learning media also makes a substantial contribution to student learning, which can trigger an increase in student's learning interest and their academic performance in class (Zhafira et al., 2025).

The results and analysis from the study by Wardatun et al. (2024) titled "The Influence of the Open-Ended Problem Model Supported by Big Book Media on Students' Creative Thinking Skills," published in the Journal of Professional Education Science in 2024, demonstrate that the experimental group using the open-ended problem model with Big Book media support and the control group relying solely on the open-ended problem model with Big Book media support in the 11th grade at SMAN 3 Mataram differ in their creative thinking outcomes. The t-value of the control class is 6.855, which is also more than the t-table value of 2.042, and the t-value of the experimental class is 6.779, which is higher than the t-table value of 2.032. Researchers Risna et al. (2023) additionally carried out a comparable investigation titled "Big Book: Student Scientific Literacy." The Design and Development (D&D) method is the research methodology used in this study. To demonstrate how the Big Book may affect students' science literacy, the D&D model was chosen. examining the percentage of student responses to the Big Book that met the very good criteria, the research findings indicate that students are satisfied and enthusiastic about using the Big Book for learning. Students' interest and science literacy can be enhanced by their enthusiasm for this subject. This shows how the creation of Big Books can enhance students' science literacy. Even though the research has similarities in using big books as a learning medium, it does not cover how big books can influence the improvement of student's learning interest and student's conceptual understanding. Therefore, this study will discuss the enhancement of student's learning interest and understanding using big books.

Another relevant study in this discussion is the research conducted by Purba et al. (2024) titled "The Influence of Using Big Book Learning Media on Learning Outcomes in Science Subjects on Ecosystem Topics in Grade V at SDN INPRES Perumnas 2 Waena. "The research results show that in Banyuwangi Village, Manyar District, Gresik Regency, the understanding of junior high school students is dominated by moderate-level conceptual knowledge. Understanding all three indicators of conceptual understanding is a sign of a high level of conceptual

understanding. Only the indicators of recalling or repeating concepts can be understood and met by students with a moderate level of conceptual knowledge; other indicators are not well met, leading to misunderstandings.Students with limited conceptual understanding, on the other hand, can only comprehend the indicators of recalling or repeating concepts; they cannot meet other indicators, which leads to a lack of understanding. Several aspects that influence the understanding of ideas include the approach or learning process used, student's motivation to learn, and their cognitive capacity. The research conducted did not provide a detailed explanation of how the big book media can influence student's understanding, and the population studied were elementary school students. Thus, this research will discuss the impact of using big book learning media on student's learning interest and understanding, especially in the subject of acid-base chemistry in the 11th grade at SMAN 1 Ketapang.

Based on the findings of the research observation at SMAN 1 Ketapang, teachers only use conventional models for teaching activities, which makes the learning environment boring for students. As seen from the lack of interest and understanding of students towards the chemistry curriculum, as well as their poor learning outcomes with most of their grades falling below the Minimum Completeness Criteria (KKM). This has led to low student engagement and understanding (Amir, 2023; Nabillah & Abadi, 2019; Sampe et al., 2023). This problem arises from the lack of student enthusiasm for learning, which is not evident during learning exercises and causes them to understand the subject only partially (Buyung et al., 2022). Additionally, the textbook on acid-base topics for the 11th grade is more text-heavy than visually engaging and tends to be considered very complex, causing most students to have difficulty reading and understanding the topics. Thus, with the use of big book media where students can explore texts and interactive images as one of the strategies to build meaning, it is expected to create student interest in learning, thereby making student understanding more optimal (Warsilah, 2020).

RESEARCH METHOD

This research uses quantitative techniques, also known as quantitative analytical design, which is conducted through performance structure or work phases. The quantitative approach is known for utilizing numerical data as the basis for investigation. In addition to providing context or justification for using these quantitative techniques, the use of quantitative data can serve as a specific research instrument. Therefore, the quantitative approach is the most appropriate for this research and is often used by researchers and examiners to gain a more comprehensive understanding of the correlation between variables in the study (Darmawan et al., 2024). The research design used in this study is a quasi-experimental design, which is a research design that does not randomly assign samples to experimental and control groups to better understand the cause-and-effect relationship between variables, using the pretest-posttest control group design type.

This research describes, analyzes, and compares the influence of big book media on the interest and understanding of acid-base chemistry material among 11th grade students at SMAN 1 Ketapang. The research design is as follows:

Table 1. Research Design and Planning

Groups	Pretest	Treatment	Posttest
A	OA1	X	OA2
B	OB1		OB2

Note:

A	:	Experimental Group
B	:	Control Group
OA1	:	Pretest Experimental Group
OB1	:	Pretest Control Group
X	:	Treatment
OA2	:	Posttest Experimental Group
OB2	:	Posttest Control Group

The population used in this study consists of all students in the XI MIPA Class, which comprises 6 classes with 34 students each. To replace the population, this study took a sample selected using the random sampling technique, and samples were taken from 2 classes, each with 34 students.

A test for students' conceptual understanding and a questionnaire for their learning interest are the instruments used in this research. Validity, reliability, normality, and independent sample t-test will be used to evaluate the information. The statistical testing method to evaluate the data is the independent samples t-test, which determines whether two means based on two data distributions are significant. The objective of this research is to compare the means of two statistically independent groups using the independent samples t-test to test the hypothesis. Here is the procedure to confirm the hypothesis in the independent samples t-test: (1) formulating ho and ha for each hypothesis to be tested; and (2) determining the criteria for hypothesis testing as the basis for making decisions to accept or reject the hypothesis.

For the testing of all hypotheses to be conducted, the following criteria will be used:

1. If the sig. (2-tailed) value in the independent samples test table is < 0.05, it can be concluded that the two groups have significantly different average values. The sig (2-tailed) value < 0.05, then ho is rejected, and ha is accepted.
2. If the sig. (2-tailed) value in the independent samples test table is > 0.05, it can be concluded that the two groups have mean values that are not significantly different. The sig (2-tailed) value > 0.05 means ho is accepted and ha is rejected.

RESULTS AND DISCUSSION

The results of the analysis will be explained as answers to the problem formulation raised in this research.

Result

The results of the data analysis on the first hypothesis test regarding student's learning interest can be seen in the following table:

Table 2. Group Statistic's Result of Using Independent Sample T-Test on Student's Learning Interest

Variable	Class	N	Mean
Student's learning interest	Experiment	34	33.50
	Control	34	29.47

The mean score for the experimental class is 33.50, while the mean score for the control class is 29.47, based on the results from the statistical table opposite. It is apparent that there is a difference in the scores of the experimental class and the control class because the difference between their scores is 4.03. The table below show the results of the independent sample T-test on students' interest in learning:

Table 3. Result Of Using Independent Sample T-Test on Student's Learning Interest

Variable	F	Sig.	t	df	Sig. (2-Tailed)
Student's learning interest	.106	.745	6.642	66	.000

Source: IBM SPSS for windows ver 2.1.0

The results of the independent sample t-test analysis with the utilization of Big book for student learning interest at SMAN 1 Ketapang show that there is an impact of using Big book-based learning media on students' learning interest in the Acid-Base Chemistry Topic for Class XI students at SMAN 1 Ketapang, with a significance value (2-Tailed) of 0.000 < 0.05. The following is a hypothesis testing assessment of student understanding using the Independent Sample T-test:

Table 4. Group Statistic's Result of Using Independent Sample T-Test on Student's Conceptual Understanding

Variable	Class	N	Mean
Student's conceptual understanding	Experiment	34	84.12
	Control	34	69.56

The mean score for the experimental class is 84.12, while the mean score for the control class is 69.56, according to the results from the statistical table above. It is readily apparent that there is a difference in the scores of the experimental class and the control class because the disparity among their scores is 14.56. The table below displays the results of the independent sample T-test on student understanding:

Table 5. Result Of Using Independent Sample T-Test on Student's conceptual understanding

Variable	F	Sig.	t	df	Sig. (2-Tailed)
Student's conceptual understanding	.019	.890	10.416	66	.000

Source: IBM SPSS for windows ver 2.1.0

The impact of utilizing Bigbook-based educational resources on students' conceptual understanding of the Acid-Base Chemistry subject matter for Class XI students at SMAN 1 Ketapang have been shown by the results of the independent sample t-test analysis on the utilization of Bigbook for students' conceptual understanding, which show a significance value (2-Tailed) of 0.000 < 0.05.

Discussion

Referring to the results of the first and second hypothesis tests using the independent sample t-test, it has been shown that there is an influence of using bigbook-based learning media on student's learning interest and student's conceptual understanding of acid-base chemistry topics for 11th-grade students at SMAN 1 ketapang. The statement in this study is also supported by the opinion of etika (2021), who explains that utilizing big book learning media to teach students is an effective way to encourage their interest in learning. Student engagement and interest in reading activities increase when big book media is used. Additionally, students with low reading and comprehension skills can benefit from big book media because it contains repetitive words and visually appealing graphics that help them understand the content more quickly.

Another opinion was expressed by neolia firdana & trimurtini (2018), who explained that the big book learning media can enhance student's interest and learning outcomes by presenting the subject matter in the big book learning media, which received a score of 3 with good criteria, and met the media validity with a score of 3.75 with very good criteria. Opinions supporting the statement in this study are also expressed by purba et al. (2024), who explain that big book learning media can effectively enhance student's interest and learning outcomes by providing visually appealing and enjoyable topics. Big book learning media is promoted to enhance student engagement with learning with attractive colors and larger visuals, and instead of hastily reading from small books, the entire class can see the text and photos well due to the large size of the book.

Student's learning interest and student's conceptual understanding can be influenced by the big book learning media because the big book learning media can display engaging texts and graphics that are used to enhance student engagement during group learning (canuto et al., 2024). According to research, using big book learning media helps increase children's interest in learning because they become more focused and engaged while reading due to the attractive illustrations and large text size. This approach also allows teachers and students to be more actively engaged, making the learning environment more interesting and dynamic. In terms of student comprehension, the big book learning media can also strengthen the context of the story, thereby helping students better understand the content (pathuddin et al., 2025; prawiyogi et al., 2020).

Overall, the use of big book as a learning medium can benefit the student's learning process by increasing their interest and understanding of the topics. Students can more easily understand the topics when they can directly see the visuals accompanying the text in the big book learning media. Active discussions are also encouraged when learning with the big book learning media. Students are given the opportunity to express their thoughts and share how they understand the story or principles being taught, and the teacher is free to ask questions about the

content of the book, thereby enhancing the student's understanding of the topics in class.

CONCLUSION

The conclusion of this research the application of Bigbook educational materials significantly affects the interest and understanding of 11th-grade students at SMAN 1 Ketapang towards acid-base chemistry content. A significance value of 0.000 < 0.05 is obtained from the independent sample t-test hypothesis on the independent variable of students' learning interest, and 0.000 < 0.05 is the result of the independent sample t-test hypothesis on the independent variable of students' conceptual understanding. These hypothesis test results support the idea that the use of Bigbook learning resources enhances students' interest and understanding of acid-base chemistry material in the 11th grade at SMAN 1 Ketapang. The results of this research emphasize the importance of using interactive and enjoyable learning media, such as big books, in the classroom learning process. The use of media that displays large text sizes and attractive illustrations, such as big books, can create a learning atmosphere for students that is imaginative and interactive. Additionally, the attractive visual appearance of the big book media makes the chemistry acid-base material, which is typically full of calculations and complex symbols, very enjoyable for students. Students will tend to be more focused and enthusiastic when provided with a clear and engaging big book media, thereby increasing their interest in learning about acid-base chemistry. The big book learning media also supports the enhancement of student's understanding by presenting information related to acid-base chemistry in an informative and repetitive manner, making it easier for students to grasp the content of acid-base chemistry. Of course, to support the successful implementation of the big book learning media, schools need to provide supporting facilities and infrastructure so that the application of the big book media can be carried out optimally and achieve the learning objectives. The big book media is not just a visual learning medium, but it serves as a bridge for students to develop their knowledge of acid-base chemistry material, thereby enlivening the classroom atmosphere and effectively fostering student's interest in learning and understanding.

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