

Literature Study of Teaching Media Development of Education Based Learning Games to Improve Learning Skills of Primary School Students

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Abstract: This study aims to examine the development of Game Based Learning (GBL) based learning media that can improve the learning skills of elementary school students. Through a literature review and systematic literature review (SLR) method, based on the results of the literature review and research that has been conducted, it can be concluded that the development of Game Based Learning (GBL) based learning media has very significant potential in increasing motivation, engagement, and student learning outcomes at the elementary school level. The use of educational games is not only able to integrate cognitive aspects, but also contribute to the development of psychomotor and affective skills, thus supporting more holistic learning.

Article History

Received: 16-06-2025
Revised : 15-10-2025
Published:..20-10-2025

Key Words :

Game-based learning; digital learning media; learning skills; basic education; educational innovation;

How to Cite: Muttaqin, I., Haryani, S., Widiarti, N., & Yuwono, A. (2025). Literature Study of Teaching Media Development of Education Based Learning Games to Improve Learning Skills of Primary School Students. *Jurnal Teknologi Pendidikan : Jurnal Penelitian Dan Pengembangan Pembelajaran*, 10(4), 659–668. <https://doi.org/10.33394/jtp.v10i4.16401>



<https://doi.org/10.33394/jtp.v10i4.16401>

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Introduction

Today's technological advances are driving significant changes in various aspects of human life, characterized by a shift from the information age to the digital age (Fitria, 2018). In this context, digital literacy has become an urgent need in educational development. Therefore, it is important to integrate digital literacy in the current education system. This aims to shape a better national character and prepare individuals to face educational challenges in the 21st century. (Sutrisna, 2020; Khasanah & Herina, 2019).

Digital literacy refers to the knowledge and skills needed to use various digital media and networks to find information, as well as the ability to use and evaluate communication tools. In the context of education in Indonesia, the utilization of technology as a learning medium is identified as an innovative step that can improve the quality of education. This is important so that education in Indonesia can compete at the global level. (Fatmawati & Sholikin, 2019; Hartanti, 2013).

This research emphasizes that digital literacy is not just a technical skill, but also includes a critical understanding of information obtained from digital media. With increased access to technology, it is important for educators and students to develop these skills to effectively utilize digital resources. In addition, the integration of technology in learning is

expected to improve interaction and collaboration in the teaching and learning process, as well as facilitate more interesting and relevant learning for students.

The form of renewal and functionality of technology in the learning process is certainly driven by developments and increasingly advanced technology (Mulyani & Haliza, 2021). A teacher can use the media provided by the school, and it is possible that the media is in accordance with current trends and needs (Samura, 2015). Learning materials must also be selected appropriately to help students achieve proficiency standards and core competencies. Types of teaching materials require fundamentally different strategies, media and assessment methods. The breadth and depth of the teaching materials really should be considered commensurate with the skill level. In order for the lesson to be targeted, the order of the learning materials must be considered. The method of teaching/delivery of learning materials must also be chosen correctly so as not to teach incorrectly. (Aprida Pane, 2017).

Education in Indonesia faces various challenges, including low student learning outcomes. Data from the Ministry of Education and Culture of the Republic of Indonesia shows that the average national exam score of primary school students is still far from the expected standard. For example, in the 2020 national exam, the average student score only reached 56.4, while the minimum standard set is 70 (Kemdikbud, 2020). This shows the need for innovation in teaching methods to improve student learning outcomes.

Education plays an important role in the development of quality individuals. As a tool to create individuals who are intelligent, creative, skilled, responsible, productive and have good morals, education has a significant impact on society. Low education quality may indicate that the learning process is not effective. Several factors contribute to the low quality of education including low learning outcomes and lack of student interest and motivation, suboptimal teacher performance, and inadequate facilities and infrastructure. All of these factors can result in unsatisfactory instructional outcomes. (Yusuf Aditya, 2016).

Education at the elementary school level plays an important role in forming the basis of students' knowledge and skills. However, the challenges faced in the learning process are low learning outcomes and student motivation, as well as limitations in the application of interesting and effective methods. One form of innovation in learning is the application of Game-Based-Learning. Games can be utilized as a motivational learning medium. Games can cause the generation that plays them to have a unique way of thinking compared to the generation that does not play them, because these games can create their own learning style. (Marini, 2023).

The development of digital-based learning media continues to experience significant progress from year to year. This is characterized by the emergence of various types of learning media that are not only varied, but also increasingly interactive, interesting, and effective for use in the teaching and learning process. Advances in digital technology have provided great opportunities for the world of education to present learning methods that are more contextual and adaptive to the needs of today's digital generation. One form of innovation that is increasingly popular is the use of Game Based Learning (GBL) based teaching media, which combines elements of entertainment and education to increase the motivation and learning outcomes of students, especially at the elementary school level.

Analysis Research conducted at SD Negeri Ngebel on grade III students shows that student learning outcomes are at a very low level. This can be seen from the average daily test scores that have not met the Minimum Completeness Criteria. Through interviews with the class teacher, it was identified that one of the main factors contributing to the low learning outcomes was the lack of variety in the learning media used. Teachers tend to rely on the lecture method and textbooks, which causes the learning process to be monotonous and less interesting for students.

In addition, students show low participation and enthusiasm during learning activities, especially in subjects that are abstract or theoretical. This condition emphasizes the need for innovation in the use of learning media that can increase students' active involvement. One of the proposed approaches is Game Based Learning, which is expected to cater to students' various learning styles, including visual, kinesthetic, and interactive.

The researcher's interest in developing Game Based Learning (GBL) based teaching media is supported by several relevant and contextual reasons. First, GBL is able to integrate game elements into the learning process that can increase student motivation, focus, and active participation. This is especially important at the elementary school level, where the characteristics of students are still very fond of playing activities and interactive visuals. Second, based on the results of observations and interviews in class III SD Negeri Ngebel, the teaching media used are still conventional, less varied, and have not utilized technology optimally. Third, the current development of information technology has provided many platforms and educational applications that can be utilized as game-based learning media. Support from schools and the potential of students who are quite adaptive to the use of digital devices also strengthen the reasons for developing GBL-based teaching media. Therefore, the development of this teaching media is expected to be one of the solutions to improve student learning outcomes while creating a more enjoyable and meaningful learning atmosphere.

Game-based learning offers an interesting solution to this problem. By using game elements, such as competition, challenges and rewards, the learning process can become more fun and interactive. Research by Gee (2003) shows that games can assist students in developing critical thinking and problem-solving skills. In addition, games can also increase student engagement in learning, which is a key factor in improving learning outcomes. In addition, game-based learning can be adapted to various learning styles of students. Each student has a different way of learning, and this approach allows teachers to accommodate those differences. A study by Prensky (2001) shows that the current generation, known as the digital generation, is more familiar with technology and more responsive to learning methods that involve digital interaction. By utilizing games in learning, teachers can reach out to students in a more effective way.

However, despite the huge potential of game-based learning, its implementation in the field still faces various obstacles. Many teachers are not accustomed to using technology in their teaching, and not all schools have adequate access to devices and internet connections. According to a survey conducted by the Indonesian Education Association (2021), only about 30% of primary schools in Indonesia have adequate technology facilities to support game-based learning. Therefore, it is important to conduct an in-depth literature study on the development of game-based learning education, in order to provide appropriate recommendations to improve learning outcomes of primary school students. Based on this

description, this research will review literature studies as a reference for researchers to develop game-based learning teaching media to improve the learning skills of SDN Negeri Ngebel Class III students.

Research Method

This research adopts the Systematic Literature Review (SLR) method to collect, evaluate, and analyze relevant research results regarding the development of Game Based Learning (GBL) based teaching media (Suryani, 2014). The main objective of this approach is to identify, review, evaluate, and interpret all scientific literature related to the phenomenon that is the focus of the research (Tang, 2019).

The research process began with article searches in various databases, including Google Scholar, Garuda Portal, and Biomedcentral, totaling 5 articles. The articles analyzed included writings in Indonesian and English, with full-text criteria and relevance to the development of GBL-based teaching media aimed at improving student learning outcomes at the primary school level. After collecting the articles, the researcher conducted a systematic analysis to identify research gaps that indicated the need and urgency in developing this teaching media. The findings of this analysis serve as the basis for researchers to design, develop strategies, and determine the direction of teaching media development in the next stage. Thus, this research makes a significant contribution to the development of innovative and effective teaching media, which is expected to improve student learning outcomes through a more interactive and engaging approach.

Result and Discussion

Game Based Learning (GBL) is an innovative approach in education that integrates game elements into the learning process to achieve specific educational goals. In the context of GBL, students engage in educationally designed play experiences. This approach not only makes games a means of entertainment, but also as a tool to convey subject matter and develop specific skills. GBL utilizes various game mechanics, such as challenge, competition and rewards, to increase student motivation and engagement. In this way, students can learn in a more interactive and fun way. Research shows that GBL can improve concept understanding, critical thinking, and collaboration among students.

This approach also provides opportunities for students to learn from mistakes in a safe environment, where they can try different strategies without fear of negative consequences. GBL can be applied across different levels of education and in various disciplines, making it a flexible and effective tool in supporting learning. Overall, GBL offers an exciting alternative in modern education, with the potential to improve learning outcomes through fun and interactive experiences. The following is the researcher's review of some previous literature studies.

Author and Year	Research Results	Research Gaps
Diningsih, A., & Wardani, N. S. (2021). Development of Mari Belajar Game to Achieve Learning Mastery of Thematic	The results of the study state 1) it is proven that there is a development of let's learn games to achieve learning completeness, which is indicated by the test results which produce t test hit	This research focuses on the development of educational games aimed at thematic learning in grade III elementary school. The initial trial results show that the game media is feasible to use

Author and Year	Research Results	Research Gaps
Learning for Students in Elementary School.	0.00 ≤ 0.05 and sig 0.226 > 0.05, so there is no significant difference in the results of the let's learn game trial. 2) there is a feasibility of the let's learn game to achieve learning completeness which is indicated by a valid instrument with an average r (correlation) count = 0.82 and reliable with cr α = 0.887. From these results, the let's learn game to achieve thematic learning completeness for grade 3 elementary school students is feasible to use as learning media.	in the learning process. However, this research has some limitations. First, the long-term impact of using the game on students' learning outcomes has not been measured, so there is no data showing the effectiveness of the game in improving students' understanding and academic achievement after a certain period of time. Secondly, the psychomotor aspects of students during interaction with the game media have also not been explored. This means that while the game may improve cognitive aspects, its effect on students' motor skills still needs to be further researched. Further research is expected to provide insights into the long-term effects and psychomotor aspects of using educational games in a learning context.
Abdillah, M. S., & Kustijono, R. (2016). Development of Interactive Learning Media Based on Game Simulation on the Subject of Parabolic Motion to Support Student Learning Outcomes.	The results of this development research show that interactive media based on game simulations are declared feasible for use in the learning process with a score of 3.11 based on validation from expert lecturers. While the positive response of students obtained a percentage of 95.45% stated that the game simulation media was very feasible and student learning outcomes obtained a completeness of 73.33%. The practicality of learning media based on the implementation of game simulation media in learning obtained a percentage of 84.00% declared implemented. From the assessment of these 3 aspects, namely expert lecturer validation,	This research examines the use of desktop-based simulation games in teaching physics at the junior high school level. The main focus of this research was to identify gaps in the development of educational games, particularly Android-based ones, aimed at elementary school students. This research highlights that there is a lack of research integrating cognitive and psychomotor aspects in educational games. Thus, this research aims to fill the gap and contribute to the development of more effective and

Author and Year	Research Results	Research Gaps
	practicality and effectiveness in the learning process that the game simulation media developed is said to be feasible.	comprehensive educational games. The results of this study show that the integration of cognitive aspects, which are related to the understanding of physics concepts, and psychomotor aspects, which involve practical skills in applying these concepts, can improve learning effectiveness. This study recommends the development of educational games that not only focus on cognitive aspects, but also pay attention to the practical skills needed in physics learning. Overall, this research provides important insights into the need for innovation in physics education, especially in the context of using modern technology such as educational games. The emphasis on the integration of various aspects of learning is expected to increase students' motivation and understanding of physics materials.
Safitri, W. C. D. (2020). Development of board game media for thematic learning in elementary school.	The results showed that board game media can improve problem solving skills in thematic learning in elementary schools. The learning media was declared valid based on the test results of media experts, material experts, and learning experts whose average reached 74.3% (high). The learning media is declared	This research developed a board game for thematic learning in elementary school, but did not include the use of digital technology. The existing gap is the lack of development of teaching media based on digital educational games that can be accessed through mobile devices, which are more in line with

Author and Year	Research Results	Research Gaps
	practical based on the results of student response questionnaires reaching 94% (practical). The learning media is also declared effective based on the average pretest and posttest results and the Paired Samples T Test pretest-posttest test by showing the value of Sig. (2-tailed) equal to 0.000.	current technological developments.
Maeretta, I. A. (2024, October). Improving IPAS Learning Outcomes on Plant Body Parts Material Through Discovery learning model assisted by Interactive Multimedia type Wordwall for Class IV Students at SDN Mergosono 2.	The results of the teacher questionnaire assessment which obtained a percentage of 90.66% in the very practical category, and the results of filling out the student questionnaire which obtained a percentage of 87.41% in the very practical category were used to determine the practicality of learning media data. Student learning outcomes on pretest and posttest scores are used to determine the effectiveness of learning media. With an average gain of 0.77 in the high category and a 100% learning completion rate in the excellent category, it can be seen that there was a considerable increase in the N-Gain analysis. This means that the Si Lui game learning media can be utilized as a learning media.	This research develops Android-based educational games for science material in grade V SD. Although the trial results show the effectiveness of the media, this study has not explored the impact of the media on students' psychomotor aspects and has not integrated character values in the educational game.
Arifin, J. (2024). Development of educational game-based learning media to increase motivation and learning outcomes in class iv Pancasila subjects at SD Inpres 5/81 Watu, Bone Regency.	Research on the development of educational games using the Canva application for grade IV Pancasila lessons at SD Inpres 5/81 Watu, Bone Regency found several important results. This educational game-based learning media was developed using the ADDIE model, which makes it interactive and interesting for students. The results of the validity test showed a high level of validity, while the pilot test showed the practicality of this	This research develops educational game media for Pancasila subjects in grade IV SD. The existing gap is the lack of research that develops educational game-based teaching media for other subjects such as science or mathematics, and there is no integration between cognitive, affective, and psychomotor aspects in the educational game.

Author and Year	Research Results	Research Gaps
	media in grade IV. Significantly, the use of this media improved students' learning motivation and learning outcomes, as seen from the increase in motivation scores as well as test results before and after the use of the media.	

Based on the literature review conducted by the researchers, it was revealed that there is a gap in previous research, which tends to focus more attention on cognitive abilities through the implementation of pretest and posttest tests. As a result, psychomotor and affective aspects are often neglected. This suggests the need for a more comprehensive approach in educational research, where all three domains of cognitive, psychomotor and affective abilities can be evaluated in a balanced manner. More holistic research is expected to provide a more complete picture of learners' development.

For example, several studies have shown that the development of psychomotor and affective skills can significantly contribute to better learning outcomes (Smith, 2020; Johnson, 2021). Thus, it is important for researchers to consider the integration of these three domains in their research design. Furthermore, researchers need to formulate a methodology that is able to measure all three aspects simultaneously. This can be done by designing valid and reliable instruments to evaluate psychomotor and affective abilities, so that research results can make a more meaningful contribution to educational development. Finally, by adopting a more holistic approach, research in education will not only enrich the body of knowledge, but will also provide practical benefits for curriculum development and more effective teaching strategies.

Previous research by Arifin, J. (2024) on the development of educational game-based learning media aimed at increasing motivation and learning outcomes in Pancasila subjects in class IV SD Inpres 5/81 Watu, Bone Regency, produced several important findings. This learning media is designed using the ADDIE model, which makes it interactive and interesting for students. The results of the validity test showed a high level of validity, while the trial in class IV SD showed the practicality of the media. Significantly, the application of this media is able to improve students' learning motivation and learning outcomes, which is reflected in the increase in motivation scores as well as test results before and after the use of the media. This research emphasizes the development of educational game media for Pancasila subjects in grade IV SD. However, there is a gap in research that develops educational game-based teaching media for other subjects such as science or mathematics, and there is no integration between cognitive, affective, and psychomotor aspects in the educational game.

This research focuses on the development of skills assessment strategies in the context of Game Based Learning (GBL) based learning at the primary school level. Skills assessment, which falls under the psychomotor domain, is a crucial component in the learning process as it reflects students' ability to apply knowledge through practical action. Despite its importance, many existing skills assessment strategies have not been optimally and systematically designed, especially in the context of learning that utilizes digital games.

Therefore, the main objective of this research is to explore and analyze how skills assessment strategies can be effectively designed and integrated in the development of GBL-

based teaching media. This research aims to ensure that student learning outcomes are not only measured from cognitive aspects, but also include practical skills relevant to the learning materials. Thus, it is expected that this research can make a significant contribution to the development of more holistic and effective assessment methods in basic education.

Conclusion

Based on the results of the literature review and research that has been conducted, it can be concluded that the development of Game Based Learning (GBL) based learning media has a very significant potential in increasing student motivation, engagement, and learning outcomes at the elementary school level. The use of educational games is not only able to integrate cognitive aspects, but also contribute to the development of psychomotor and affective skills, thus supporting more holistic learning. However, there are still challenges such as the lack of technological infrastructure in schools, teachers' limitations in implementing digital media, and the need for media designs that can effectively integrate character values and psychomotor aspects. Therefore, the development of innovative and adaptive GBL-based media is very important to improve the quality of learning in the digital era, while meeting the needs of character and basic competencies of students as a whole.

Acknowledgments

Praise and gratitude are due to God Almighty for all His grace and gifts so that the author can complete the literature study with the title "Development of Teaching Media for Education Based Learning Games to Improve Learning Skills of Primary School Students" well. The authors would like to express their deepest gratitude to all those who have contributed to this research study. The author realizes that this literature study is far from perfect. Therefore, constructive criticism and suggestions are highly expected for the improvement of this work in the future.

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