



## Utilization of Game-Based Learning Media in Enhancing Student Interest in Physical Education Learning

Dhea Reni Anggraini<sup>1</sup>, Muhammad Ali Syahbana<sup>2</sup>, Mawar Humairoh Marpaung<sup>3</sup>, Dewi Sartika Nst<sup>4</sup>, Rivaldin Mendrofa<sup>5</sup>, Dinda Nano Pertiwi<sup>6</sup>

<sup>1,2,3,4,5,6</sup> Sekolah Tinggi Olahraga dan Kesehatan Bina Guna, Indonesia

Corresponding Author:  [dheareninst03@gmail.com](mailto:dheareninst03@gmail.com)

### ABSTRACT

This study investigates the use of game-based learning media to enhance students' interest in Physical Education (PE). With the growing need for innovative teaching methods to engage students, game-based media is considered an effective tool to improve motivation and learning outcomes. The research was conducted with high school students at MAN 1 Medan, where they were exposed to game-based learning for eight weeks. Data were collected through questionnaires to assess changes in student interest before and after the intervention. The results showed a significant increase in students' interest in PE ( $p < 0.05$ ) after using game-based learning media. This indicates that incorporating games into PE lessons can make learning more engaging and enjoyable, leading to greater student participation and improved learning experiences. Furthermore, the study found that game-based learning also fostered improved social skills and teamwork among students. Despite some challenges, such as technical difficulties and limited practice time, the findings suggest that game-based learning is a promising approach to enhance the quality of PE instruction. The study recommends further development and integration of game-based media into the PE curriculum to provide more interactive and effective learning opportunities.

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## INTRODUCTION

Physical education (PE) plays a significant role in the school curriculum, aiming to enhance physical skills, health, and a positive attitude toward physical activities. However, PE is often perceived as a less engaging subject by many students. This phenomenon can be attributed to the monotonous teaching approaches commonly employed, which fail to captivate students' attention (Syafudin, 2022). As such, finding innovative and engaging methods to stimulate students' interest in PE is crucial to improving their participation and learning outcomes in the subject.

It is essential to recognize that students' interest in learning is closely related to their motivation, including in PE. A lack of motivation may hinder students from actively participating, leading to suboptimal learning results. Previous studies have shown that high levels of interest in learning can contribute to better academic performance, including in sports and health education (Dewi, 2021). Therefore, there is a need for fresh, interactive approaches that can boost students' motivation and interest in PE.

With the advancement of technology, game-based learning has emerged as an appealing alternative in various educational fields. Games offer an enjoyable and interactive learning experience, which can encourage students to engage more actively in the learning process (Hastuti & Yuliana, 2023). In the context of PE, games can be utilized to teach various physical skills and sports in a virtual environment, providing instant feedback and challenging students to achieve specific goals related to physical activities. This innovative approach holds great potential for increasing student interest and involvement in PE lessons.

The use of game-based learning is relatively new in the field of PE education in Indonesia. While educational games have been widely applied in other subjects internationally, their implementation in PE remains limited. A study by Pramudito and Prasetyo (2020) highlighted the effectiveness of game-based learning in enhancing students' interest and skills in subjects such as mathematics, yet similar studies in PE are scarce. Thus, this research addresses the gap in literature regarding the application of games in PE education.

Research conducted abroad suggests that educational games can effectively enhance student motivation (Chen & Tsai, 2021). Games designed with elements such as competition, collaboration, and rewards can stimulate students' interest in learning, making the educational experience more engaging. This research aims to explore how game-based learning can be integrated into PE classes in Indonesia and examine its impact on students' interest in the subject.

Initial observations in several schools show that many students are less interested in physical activities during PE classes. Students tend to show greater interest in technology-driven activities, such as playing digital games. This raises the question of whether the use of games as a learning medium could address the issue of low student interest in PE. Moreover, games offer an opportunity to diversify interactions within PE lessons, making them more enjoyable and varied.

The focus of this study is to assess how the use of game-based learning media can enhance student interest in PE and determine its impact on student participation in physical activities. It is hoped that this research will provide valuable insights for educators and policymakers in designing more effective and engaging teaching strategies for PE. Additionally, the study aims to contribute to the development of

educational media that leverages the potential of technology to achieve optimal educational outcomes.

In light of this, the primary objective of this research is to explore the role of game-based learning in increasing student interest in PE and to evaluate its effect on student involvement in physical activities. Furthermore, this study will offer recommendations for the further development of game-based learning tools that can be utilized by PE teachers to enhance the quality of education in schools.

## **RESEARCH METHOD**

This study adopts a quantitative approach with an experimental research design. An experimental design is chosen to examine the effect of using game-based learning media on students' interest in Physical Education (PE). Experimental research allows for measuring the changes that occur in the experimental group, which receives a specific treatment – in this case, the use of game-based learning media (Creswell, 2021).

The population for this study consists of all students enrolled at MAN 1 Medan for the 2024/2025 academic year. The sample for the study was selected using purposive sampling, which involves choosing participants deliberately based on specific criteria. The selected sample includes two classes from the X IPA grade, each consisting of approximately 30 students, with a total of 60 students. These classes were chosen because they have a similar background in physical skills at the outset of the study. Purposive sampling was chosen because it allows the researcher to focus on students with relevant characteristics to the research objectives, thus simplifying data measurement and analysis (Sugiyono, 2018). This method also ensures that the selected sample meets the research requirements.

The instrument used to measure students' interest in PE is a questionnaire based on motivational learning theory. The questionnaire consists of 20 items that assess various dimensions of motivation, interest in physical activities, and engagement with game-based learning. Each item uses a Likert scale with five response options: strongly agree, agree, neutral, disagree, and strongly disagree (Arikunto, 2019). In addition, to assess the effectiveness of game-based learning media in improving physical skills, direct observation of students' participation in the activities is conducted during PE lessons. Observations are performed by two trained assessors to ensure objective data collection.

The research is carried out in two main phases: the intervention phase and the data collection phase. In the first phase, the experimental group is exposed to game-based learning media for 8 weeks. The games used are sports games designed to improve basic physical skills such as coordination, agility, and endurance. In the second phase, data collection is conducted by administering the questionnaire to students after the learning period to measure their interest in PE. Students' participation in physical

activities is also observed during PE classes to assess the level of engagement in activities taught through games.

The instrument validity was assessed by experts in the field of PE and educational media. This validation process ensures that the instruments accurately measure the intended variables relevant to the research objectives. The content validity of the questionnaire was tested by obtaining feedback from three PE professors with expertise in teaching and assessment (Zulkarnain & Hasyim, 2020).

Furthermore, the reliability of the instrument was assessed using Cronbach's alpha to measure internal consistency. A reliability value above 0.7 indicates that the instrument is dependable for use in data collection (Nunnally & Bernstein, 1994). Data analysis in this study involves both descriptive and inferential statistical methods. Descriptive statistics are used to summarize data regarding students' characteristics and their interest in PE. To determine the significant impact of game-based learning media on students' interest, paired sample t-tests are employed. This test is used to compare the pre- and post-treatment mean scores of students' interest in PE. If the p-value is less than 0.05, it indicates a statistically significant difference in students' interest before and after the intervention (Field, 2018).

Additionally, simple linear regression analysis is used to assess the relationship between students' level of engagement in the games and their improvement in learning interest. This study adheres to established research ethics, including obtaining approval from the school authorities and informed consent from both students and their parents. All collected data will be kept confidential and used exclusively for research purposes.

## **RESULT AND DISCUSSION**

### **Result**

This study measured students' interest in Physical Education (PE) after being exposed to game-based learning media for 8 weeks. The data collected through questionnaires revealed a noticeable increase in students' interest in PE after the intervention. Before the intervention, the average interest score was 56.2, while after the intervention, it rose to 75.3. The t-test results indicated a significant difference in scores ( $p < 0.05$ ), suggesting that the use of game-based media effectively improved students' interest in PE.

### **Discussion**

#### **Increase in Student Interest**

The results of this study show that game-based learning can enhance students' interest in PE lessons. This finding is consistent with Dewi (2021), who stated that innovative and engaging learning media can boost students' motivation and interest in education. In this case, the use of games provided an interactive and enjoyable learning experience, leading to greater student involvement in the learning process.

1. Effect of Games on Student Engagement

The games used in this study incorporated elements of competition, challenges, and rewards that motivated students to actively participate. According to Hastuti and Yuliana (2023), these elements have a positive impact on increasing student engagement. In this context, students not only learned physical skills but also developed social and cognitive skills such as teamwork and strategy.

2. Effectiveness of Games in PE Learning

The observed increase in student interest was also reflected in their higher participation in physical activities during PE classes. This supports Syafrudin's (2022) findings, which showed that teaching that combines technology and gaming elements makes students more engaged in physical education. Games enabled students to acquire skills in a more enjoyable manner, without feeling burdened by traditional exercises or tasks.

3. Game-Based Learning in Overcoming Boredom

One of the main factors that reduce students' interest in PE is boredom due to repetitive teaching methods. Games offer variety in the learning process, making physical activities more engaging. Chen and Tsai (2021) noted that game-based learning can address boredom in education by introducing elements of entertainment that also educate and motivate students.

4. Role of Technology in Education

The use of technology in learning, as demonstrated in the application of game-based media, is a response to the growing reliance on digital technologies in daily life. Research by Pramudito and Prasetyo (2020) found that technology in education can enhance student engagement and make learning more relevant to students' lives. In this study, the use of game-based technology contributed to creating a more dynamic and engaging learning environment.

5. Improvement in Social Skills

In addition to increasing interest in PE, the study also found improvements in students' social skills. Game-based learning encourages students to collaborate, communicate, and compete in a healthy manner. This aligns with Zulkarnain and Hasyim's (2020) findings, which showed that games can serve as tools for strengthening students' social skills, especially in group activities.

6. Gender Differences in Interest Towards Game-Based Learning

Further analysis revealed that although both genders showed increased interest, male students were generally more enthusiastic about the games compared to female students. This could be attributed to the general preference for physical activities and competitive games among boys. Hastuti and Yuliana's (2023) research also identified gender-based differences in game preferences, which may influence their level of engagement in educational games.

#### 7. Student Acceptance of Game-Based Learning

Most students reported finding the lessons more enjoyable and engaging when games were involved. This was evident from the positive responses received in the questionnaire, with nearly 80% of students expressing that PE lessons became more interesting and fun after the introduction of game-based learning. This finding indicates that students are highly receptive to game-based learning, supporting Dewi's (2021) study, which found that students prefer lessons that combine both entertainment and education.

#### 8. Challenges in Using Game-Based Learning

Despite the positive outcomes observed, some challenges arose during the implementation of game-based learning. A few students experienced difficulties in operating the games, and some felt that the allotted time was insufficient to fully master all aspects of the games. These challenges highlight the need for further adjustments in the implementation of game-based learning, both in terms of technical aspects and the time provided for practice.

#### 9. Recommendations for Future PE Learning Development

Based on the findings, it is recommended that game-based learning be implemented more broadly across schools, with some improvements. The development of games that are more suited to students' skill levels, as well as training for teachers on managing game-based lessons, is crucial. For long-term success, the integration of technology-based games into PE should be supported by adequate resources (Chen & Tsai, 2021).

### CONCLUSION

Based on the findings of this study, it can be concluded that the use of game-based learning media significantly enhances students' interest in Physical Education (PE). The data analysis shows that after the intervention, where game-based media was used for 8 weeks, students' interest scores significantly increased ( $p < 0.05$ ). Game-based learning not only made students more engaged and interested in the subject, but also improved their social skills and physical involvement.

Additionally, students showed a high level of acceptance toward the use of games in learning, with the majority of students reporting that they found PE lessons more enjoyable and engaging. However, despite the positive impact, some challenges were encountered during the implementation, such as technical issues and limited time. Therefore, further development is needed to better tailor the games to students' needs and enhance their effectiveness in PE learning.

In conclusion, game-based learning is expected to serve as an innovative solution to improve the quality of PE instruction in schools, providing students with a more enjoyable and effective learning experience.

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