

Teachers' Perception of Using Digital Game-Based Learning in Teaching and Learning Process

Engelina Salainti¹, Meily Ivane Esther Neman²

¹ Universitas Klabat; Indonesia; engelina@unklab.ac.id

² Universitas Klabat; Indonesia; meilyneman@unklab.ac.id

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ABSTRACT

Technology is frequently utilized in modern classrooms to enrich the learning experience and facilitate diverse educational phenomena. In this age of technology, it is not uncommon to see technology used in almost every aspect of human life. Monotonous and old-fashioned teaching and learning activities make technology a fascinating aspect for teachers and even more so for students. Especially when technology is combined as an exciting and educational game that makes students feel a pleasant learning environment. DGBL (Digital Game-Based Learning) is a method that can be recommended to teachers. DGBL is a learning method that combines a fun learning method using games and technology. Students like technology especially when combined with games, which can excite them when learning. In this study, the researcher will explore how teachers from various subjects perceive using DGBL in their teaching and learning process. The quantitative data gathered from the respondents were analyzed through SPSS software. The findings indicate that teachers prefer using technological devices for better outcomes in the teaching and learning process. Teachers found that using game-based learning in their classrooms made students more engaged and motivated. This led to a better overall learning experience.

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Corresponding Author:

Engelina Salainti1

Universitas Klabat; Indonesia; engelina@unklab.ac.id

1. INTRODUCTION

When technology began to appear, various aspects felt helped by the existence of technology. In terms of business, entertainment, education, and even daily needs, technology allows many people. However, it is also important to recognize that technology has brought about new challenges and concerns, particularly regarding privacy and security. As technology advances, it is crucial to address these issues and find ways to mitigate potential risks.

In education, technology plays an important role in helping the teaching and learning process in the classroom. Technology greatly contributes to the field of education by providing a wide range of learning materials and methods that utilize technology. Technology is a great tool for students, especially with fun

learning methods. It creates a positive learning environment. Technology helps teachers create interactive activities and multimedia presentations that make learning more interesting and enjoyable for students. Students are more motivated to participate and remember what they have learned

Teachers' perceptions of using games for learning are important aspects of creating a learning experience using DGBL. Digital Game-Based Learning (DGBL) has gained traction as a valuable educational tool. It enhances students' engagement and promotes active learning and critical thinking skills. The interactive nature of digital games encourages students to think strategically and solve problems in a dynamic environment. These skills are essential for success in today's fast-paced, technology-driven world.

According to Coffey, H (2009), Digital game-based learning (DGBL) is an instructional method incorporating educational content or learning principles into video games to engage learners. Dickey, M.D. (2005) defines DGBL as an instructional design that integrates game mechanics and game dynamics into learning. Kapp, K. M. (2012) viewed DGBL as a pedagogical approach that combines elements of game design with curriculum content, instruction, and assessment.

Husein, M.H. et al (2022) said that Digital Game-Based Learning (DGBL) has been perceived as a promising method in teaching mathematics, promoting students' interest, and motivation. Math is a fairly difficult subject that makes some students often give up and are not interested in learning. However, when learning math combined with the DGBL method, some students feel interested and motivated. They are more likely to enjoy doing math activities and explore different concepts and problem-solving techniques. As a result, their overall understanding and performance in math significantly improve.

Bakhsh, K. et al (2022) investigated research on the Effectiveness of DGBL from a higher educational perspective, they investigated 20 previous studies on DGBL learning strategy in higher educational perspectives published from 2008-2021 the result showed that the DGBL learning strategy has strong effects on the learning skills of the learners in higher educational. DGBL gives some advantages of a game-based learning strategy because it is attractive and helps the learners to motivate themselves in learning and doing some tasks independently.

A study conducted by An, Y (2018) said that digital games could be helpful for students learning and help students in developing real-world skills including decision-making, problem-solving, higher-order thinking, and collaboration skills. Digital games conducted in the classroom made the teachers feel more comfortable. DGBL boosts motivation and student engagement in learning since the games are designed to provide achievement, challenge, and positive feedback. DGBL can improve the results of students in some subjects. DGBL helps students learn actively and interactively and can help them understand complex concepts. DGBL also encourages collaboration and communication among students as they work together to solve problems within the games. This can lead to stronger social skills and teamwork abilities. Overall, DGBL has the potential to transform traditional teaching methods by creating a more dynamic and immersive learning experience. Adding game-like elements to education can help students better understand the material and feel more motivated to participate in their learning.

Prensky (2001) found that young teachers who are more tech-savvy tend to be more open to digital game-based learning (DGBL) than older teachers who are less familiar with technology. He also emphasizes the use of elements like fun, challenge, and feedback to keep students engaged with educational content. DGBL builds on the idea that students can learn important concepts and skills through interactive gameplay. In a study by Genfeldt et al. (2006), it was found that teachers who used DGBL in the class reported advantages such as improved motivation and student participation compared to teachers who did not use DGBL. Garris et al. (2007) found that teachers with positive beliefs about digital game-based learning (DGBL) were more likely to use it in their classrooms than teachers with negative beliefs about DGBL.

Several factors can influence teachers' perceptions of DGBL. One such factor is age and experience. Young teachers who possess a solid understanding of technology may be more receptive to incorporating DGBL into their teaching practices. Teachers who believe in active and engaging learning are more likely to use digital game-based learning (DGBL). Also, teachers who know about DGBL are more likely to use

it in their teaching. The teachers who use DGBL often tend to report the advantages of DGBL. Some of these advantages include increased student engagement, improved motivation, and enhanced learning outcomes. Additionally, students may develop important skills such as critical thinking, problem-solving, and collaboration through the use of digital game-based learning. Furthermore, research has shown that DGBL can also promote independent learning and strengthen students' decision-making abilities. When students can make choices in the game, they become more responsible for their learning and develop self-directed learning. DGBL has the potential to improve academic performance and teach life skills that can be used outside the classroom

2. METHODS

Researchers used a questionnaire in this study to gather information about DGBL. The questionnaire had two parts: the first part asked about the use and integration of DGBL using close-ended questions. In the second part, we will assess the benefits and difficulties of using DGBL with a Likert scale. Participants rated their agreement level with statements about the benefits and difficulties of DGBL on a scale of 1 to 5. The Likert scale allowed for a quantitative assessment of the perceived advantages and challenges associated with DGBL. Participants' ratings on the Likert scale revealed their thoughts on the advantages and difficulties of using DGBL. This quantitative data will help in analyzing the overall effectiveness of DGBL in the study.

In this study, data was taken from several respondents. The respondents in this study were randomly drawn from teachers from several schools in Manado, Makassar, and Medan, with different subject backgrounds, different ages, and diverse work experiences. There were about 20 respondents who participated in this study. Data collected from respondents was analyzed using statistical methods to identify correlations and trends within the responses. This approach helped identify patterns and insights that contributed to the study's overall findings.

3. FINDINGS AND DISCUSSION

Findings

The questionnaire targeted teachers or educators and explored their general perceptions of DGBL in the classroom. Participants were asked about their experience with digital games, their attitudes towards using them for educational purposes, and the challenges they encountered when using DGBL in their teaching. The aim was to understand how DGBL is being used in education and find ways to make it better.

General information from the respondents where their ages are in the range of 25 to 60 years. 25–30 years old there are about 2 people, 31–40 years old there are about 6 people, 41–50 years old there are about 8 people, and 51–60 years old there are about 4 people. These numbers give us a broad overview of the age distribution within the respondent group. It appears that the largest age bracket is represented by individuals between 41 and 50 years old. The subjects they teach also vary. There are 9 English teachers, 2 math teachers, 2 economics teachers, 2 social studies teachers, and 1 teacher each for Physical education, Chemistry, biology, religion, and homeroom teacher. Teachers have varying levels of work experience. There are 6 teachers with 1–10 years of experience, 11 teachers with 11–20 years of experience, 2 teachers with 21–30 years of experience, and 1 teacher with 31–40 years of experience. These numbers indicate a diverse range of expertise among the teaching staff.

All respondents used digital games for educational purposes in the classroom. 55% use DGBL sometimes, 35% rarely, and 5% each often and always in teaching. Most of the people surveyed use digital games for educational purposes to some extent, with a significant percentage using them sometimes. This suggests a growing recognition of the potential benefits of DGBL in the classroom. 75% of respondents believed that DGBL was well integrated into the current curriculum. Approximately 15% felt that it was very well integrated, while 5% believed it was somewhat integrated. Another 5% believed it was very well integrated. Most people said that Digital Game-Based Learning (DGBL) was integrated well into the curriculum. About 15% said it was integrated very well. 10% of people believed

that integration was somewhat improved, suggesting that there is still room for improvement in this area. The following are the results of the questionnaire for the perceived advantages and challenges of using DGBL.

Questionnaire number 1: DGBL enhances student engagement in learning

In questionnaire 1, 45% strongly agreed that DGBL increases student involvement in learning, 45% agreed, 10% were neutral, and none strongly disagreed or disagreed. Most participants agree that using digital games for learning has a positive impact on student engagement and participation. This aligns with previous research highlighting the benefits of incorporating gamification elements into educational settings.

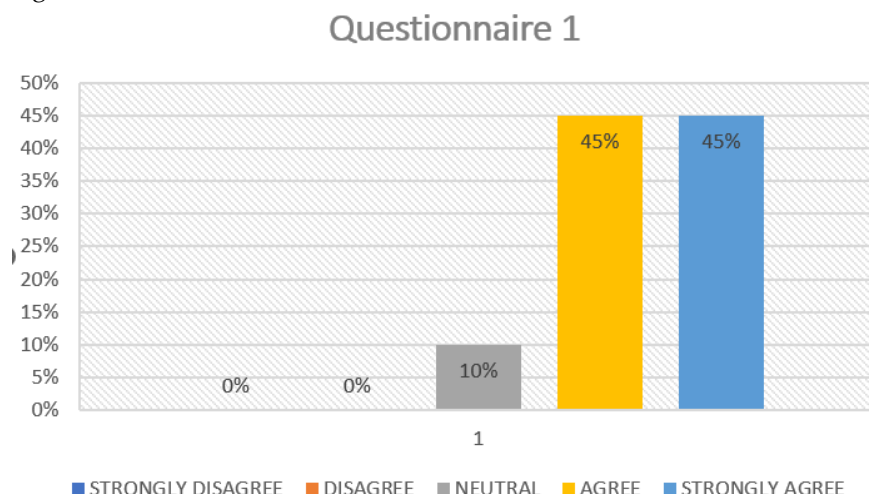


Chart 1. DGBL Enhances Student Engagement in Learning

Questionnaire number 2: DGBL improves student knowledge retention

In questionnaire number 2, 65% of respondents agreed with the statement that DGBL increases student knowledge retention, while 35% strongly agreed. The findings show that the respondents have a positive view of how DGBL affects students' ability to remember what they have learned. It would be valuable to further investigate the specific reasons and experiences that contribute to this perception.

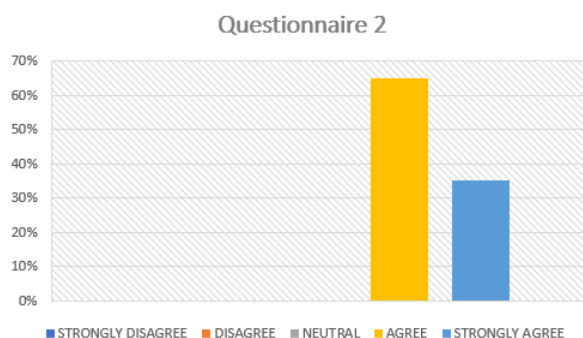


Chart 2. Improves Student Knowledge Retention

Questionnaire number 3: DGBL promotes the development of critical thinking skills

On questionnaire number 3, 50% of respondents agreed that DGBL promotes critical thinking, while 45% strongly agreed and 5% were neutral. Most respondents see Digital Game-Based Learning as having a positive impact on improving critical thinking skills. Additionally, the high percentage of strong agreement indicates a robust perception of the effectiveness of DGBL in this regard.

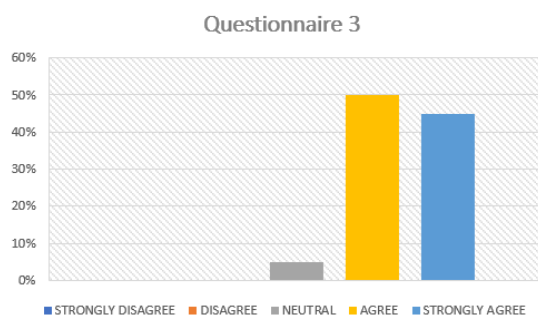


Chart 3. Promotes the Development of Critical Thinking Skills

Questionnaire number 4: DGBL can meet a variety of learning style

In questionnaire number 4, 55% of respondents agreed that DGBL can accommodate different learning styles. Additionally, 35% strongly agreed with this statement, while 15% were neutral. Most of the respondents agree that Digital Game-Based Learning (DGBL) is effective for different learning preferences. This suggests that DGBL has the potential to engage and meet the needs of a wide range of learners.

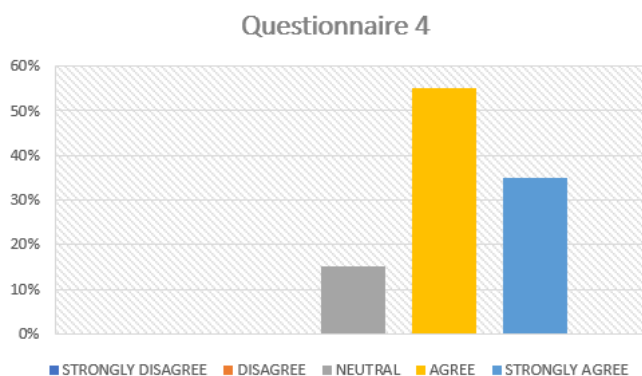


Chart 4. DGBL Can Meet A Variety of Learning Style

Questionnaire number 5: Finding high-quality educational games is a challenge

For question 5 of the questionnaire, 50% strongly agree, 30% agree, and 15% are neutral about the difficulty of finding high-quality educational games. 5% disagree, suggesting that many people struggle to find good educational games. This insight suggests a potential area for improvement in the educational gaming industry

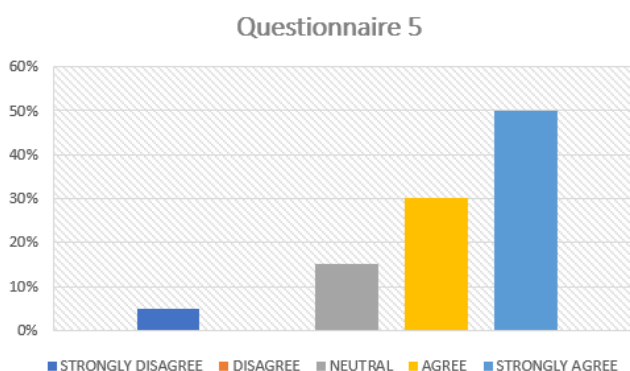


Chart 5. Finding High-Quality Educational Games is a Challenge

Questionnaire number 6: Integrating DGBL effectively requires planning time

Question 6 reveals that effectively implementing Digital Game-Based Learning requires careful planning and consideration. 75% of respondents agreed, 20% strongly agreed, and 5% disagreed. These findings show that careful planning is very important in the implementation of Digital Game-Based Learning. A few people disagree, but most participants recognize the importance of strategic considerations in this context.

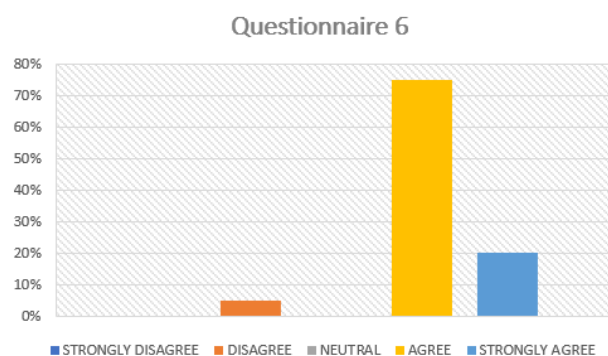


Chart 6. Integrating DGBL Effectively Requires Planning Time

Questionnaire number 7: Lack of technical support hampers DGBL implementation

In questionnaire 7, 55% strongly agree that a lack of technical support hinders the implementation of DGBL. 30% agree, 10% are neutral, and 5% disagree. Most respondents see technical support as a major obstacle to implementing Digital Game-Based Learning (DGBL). Additionally, these findings suggest the need for accessible and reliable technical support in educational settings embracing DGBL.

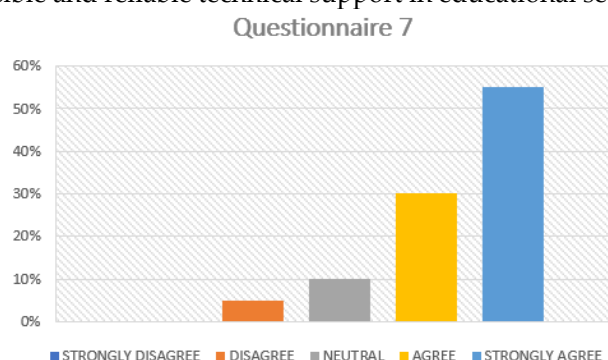


Chart 7. Lack of Technical Support Hampers DGBL Implementation

Questionnaire number 8: DGBL creates a fun atmosphere when learning

Regarding questionnaire number 8, 40% of the respondents strongly agree that DGBL creates a happy learning atmosphere, while 60% simply agree. No one expressed hesitation, neutrality, or disagreement. The respondents in the study had a very positive view of how DGBL contributes to creating a happy learning environment. They reveal a clear consensus in favor of DGBL's ability to foster a positive and enjoyable educational environment.

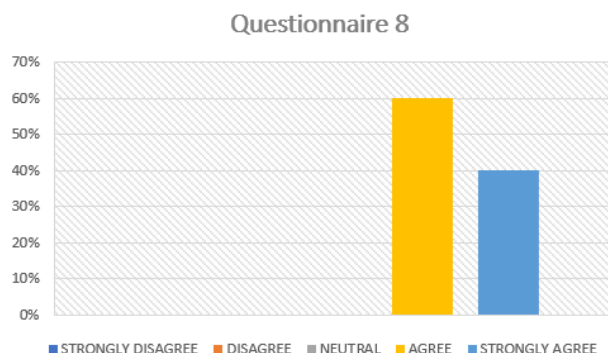


Chart 8. DGBL Creates a Fun Atmosphere When Learning

Questionnaire number 9: DGBL has a positive effect on students

In questionnaire 9, 75% strongly agreed that DGBL has a positive effect on students, and 25% agreed. This overwhelming agreement on the positive impact of DGBL highlights its potential as an effective learning tool in educational settings. Research is important to fully understand the potential of using digital games for learning as their popularity grows.

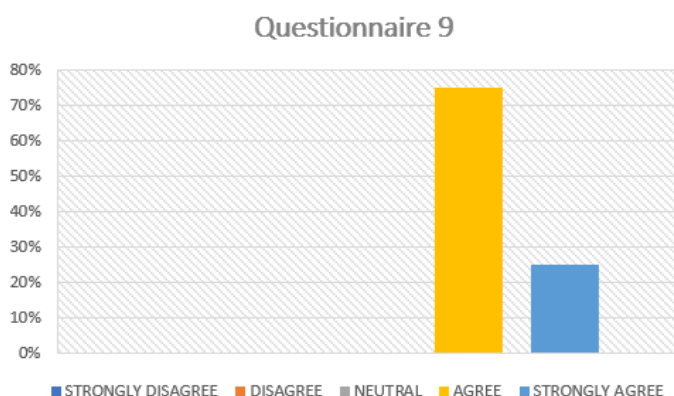


Chart 9. DGBL Has a Positive Effect on Students

Questionnaire number 10: DGBL improved my skill in using digital tools

In questionnaire number 10, the final statement regarding DGBL has greatly enhanced my proficiency in utilizing digital tools. 55% of respondents strongly agreed, 35% agreed, and 10% were still undecided by choosing neutral. Most respondents agree that DGBL has a positive effect on their digital skills, but a few are not sure if it is effective.

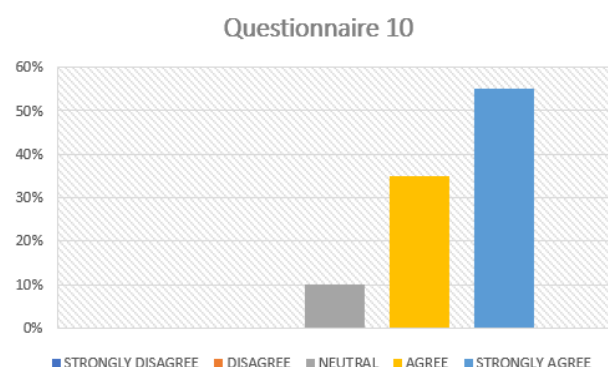


Chart 9. DGBL Improved My Skill in Using Digital Tools

4. CONCLUSION

Teachers and lecturers generally have a very positive perception of DGBL. It is seen as a helpful tool for teaching and learning, despite some obstacles. Overall, it is considered an effective learning tool. There are still challenges to overcome, like making sure all students have access and dealing with distractions during gameplay. With continued development and research, DGBL has the potential to become an even more integral part of education. DGBL also includes gamification, which makes learning more engaging and motivating for students. Educators should balance using DGBL and traditional teaching methods because each student has unique learning styles and preferences. Through collaboration and understanding, the benefits of DGBL can be maximized in the classroom. By incorporating DGBL into the curriculum, students can develop critical thinking and problem-solving skills in a fun and interactive way. Additionally, DGBL allows for personalized learning experiences that cater to individual student needs and interests. This method can improve academic performance and make students have a better attitude toward learning, which will enhance their overall educational experience. Educators need to continue exploring innovative teaching methods to meet the diverse needs of today's learners.

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