



Primary School Teacher’s Perception of Game-Based Learning in Online Learning: The Advantages and Challenges

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ABSTRACT

Keywords:

Game-Based Learning;
Teachers’ Perception;
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Advantages; Challenges;
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The COVID-19 pandemic has impacted almost all aspects of life, including education. This unprecedented shift to online learning has forced schools to implement distance learning through online-based learning. To keep the students engaged and motivated through online learning, many teachers changed their learning method from traditional learning to game-based learning (GBL) by incorporating games into learning. This study investigated primary school teachers' perceptions of game-based learning advantages and challenges in Science Learning on online learning during the COVID-19 pandemic. The data were collected through observation and semi-structured interviews of five primary school teachers and analyzed using thematic analysis of qualitative data. The results revealed that the teachers found a positive association between GBL and students' performance. GBL is a learning media that could engage students' participation and learning motivation in class. However, some teachers were also concerned about the declines in students' grades and several obstacles teachers encountered while implementing GBL. Some recommendations for future research and practice are proposed in the current study.



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A. INTRODUCTION

In March 2020, the COVID-19 pandemic was officially declared to have been transmitted in Indonesia (Roziqin et al., 2021). The world of education is being driven to transition away from face-to-face instruction toward online instruction (Oktavianingsih et al., 2021). Consequently, the Indonesian government provides remote learning solutions, which entails transitioning from offline to online learning. Based on the Ministry of Education and Culture mandates, schools organize distance learning through online learning to enable students to have meaningful learning experiences without being pressured by the responsibilities of meeting all curricular requirements (Rasmitadila et al., 2020). Online learning can be one of the solutions that we can use during the learning process due to the pandemic that requires various electronic devices with internet access (Setiawan et al., 2020). Nevertheless, according to Elena (2021), many students are unmotivated and less engaged during online learning as they might feel bored with the teacher's lecturing methods. They need to look at their digital screen for a long time to see the monotonous slides every day in the online class. Sutarto et al. (2020) found that one of the

education problems caused by online learning is the difficulty of teachers in increasing students' learning motivation. Teachers must prepare to use technology in learning because learning must continue to be carried out in this situation to acquire knowledge and achieve educational goals by providing students with these online learning activities.

According to the Ministry of Education and Culture's Regulation (Permendikbud) No. 22 of 2016, the online learning process must be interactive, fun, challenging, efficient, and motivating for students to maintain active learning (Wati & Yuniawatika, 2020). Teachers can innovate their approach by utilizing digital learning platforms, which can also be used as an alternative media in the learning process when face-to-face interactions are not possible; additionally, students have a greater chance of accessing many learning sources (Ramani, 2015). Technological advances and students' interest in games can be considered learning approaches in online learning. Numerous studies indicated that GBL could help increase motivation and efficiency in learning (Huang, 2011; Papastergiou, 2009; L. C. Wang & Chen, 2010). GBL is a type of educational media in which teachers can integrate a lesson into a game. In this context, teachers may create a model for GBL that will increase students' willingness to learn and achieve academic goals (Partovi & Razavi, 2019). One of the lessons teachers can give in the form of GBL is Science Lesson. The objective of science education in primary schools is to develop an understanding of scientific concepts that may be utilized in daily life (Windyariani & Amalia, 2019).

Teaching science to primary school students, mainly through online learning, requires considerable effort in material delivery as it contains complicated concepts that require numerous illustrations and explanations for primary school students. Providing GBL in science learning is one of the learning methods teachers may use to ensure that students can learn to explore the content of science learning materials while still enjoying playing. Numerous studies on online learning have been conducted amid the COVID-19 pandemic in Indonesia. However, most research conducted during the COVID-19 epidemic has focused exclusively on the advantages and challenges of online learning-the importance of GBL implementation, including the advantages and challenges associated with online learning, is still underemphasized.

Therefore, this study investigated the advantages and challenges of GBL in a science lesson for primary school students by examining the teacher's perspectives and experiences through observations and interviews. This study addresses the following research purposes:

1. To investigate the advantages of GBL as perceived by primary school teachers in Science lessons for primary school students in an online learning classroom;
2. To explore the challenges of primary school teachers while implementing GBL in Science lessons.

B. METHODS

The present study used a qualitative approach to examine the advantages and challenges of implementing GBL in primary school during online learning in response to the Covid-19 pandemic. The qualitative method was selected in order to explore some learning gaps that teachers and students face during online classes and how GBL is one of the excellent solutions that gives some advantages and challenges for teachers in online education today. The qualitative approach helps the researcher attempt to gain the ideas, feelings, and perspectives of the case study (Sutton & Austin, 2015).

1. Research Participants

Five teachers were involved in this study. The five teachers (2 males & 3 females) ranged from 21 to 51 years old and came from five different schools in Jakarta. The researcher only used

5 teacher participants because of the limited number of teachers who used the GBL platform. The participants The details as shown in Table 1.

Table 1. The data of the participants

Participant's Name (Pseudonyms)	Workplace/School	Age	Teaching Experience
Teacher-1 (T1)	Sun Bright School	22 years old	< 1 year
Teacher-2 (T2)	Saint Petra School	21 years old	< 1 year
Teacher-3 (T3)	01 Primary School	51 years old	20 years
Teacher-4 (T4)	03 Primary School	34 years old	11 years
Teacher-5 (T5)	16 Primary School	36 years old	12 years

2. Data Collection

The data in this study were obtained from two different sources, including classroom observations and semi-structured interviews. The researchers conducted classroom observations on each participant with five observations. Observation collects information directly and openly by observing the people and places to be studied in the research place (Creswell, 2012). According to Cohen, Manion, and Morrison (2018), using observation as a method in research is one the right things because it produces accurate and valid data. While collecting the observation data, the researchers collected the observation field notes and video recordings. It helped the researchers to remember the essential factors that might emerge during data analysis. In addition, the researchers also conducted semi-structured interviews to collect a richer source of information about the teacher's experiences, feelings, insights, and preferences about GBL. The semi-structured interview is the most common interview type in qualitative research (Alshenqeeti, 2014). Unlike structured interviews, they are not constrained by rigid rules. It is primarily a guided conversation between the participant and the researcher. It follows some interview protocol and structure, allowing the researcher to analyze the participant for additional details (DeJonckheere & Vaughn, 2019).

The interview gave the participants the flexibility to explain how well and how far they identified the problem. In qualitative research, this is very important because the central issue in qualitative research is to ensure the occurrence of a phenomenon (DeJonckheere & Vaughn, 2019). Apart from that, most Interview questions are generally open-ended to easily collect in-depth data information. Cohen, Manion, and Morrison (2018) note that interviews do not only involve collecting specific data but also discuss someone's point of view about their interpretation of certain phenomena in the place they live. In this sense, the interview has a comprehensive meaning related to data, life, and human engagement. In this study, two major questions were asked of the teachers' participants: (1) *the teachers' perspectives of GBL in science lessons* and (2) *their experiences in implementing GBL during online teaching in science lessons*. In this case, the teachers' participants were asked to answer the questions by telling their experiences in class. The language used during the interview is Indonesian due to the participant's first language. The interviews were recorded and transcribed word-by-word by the researchers, in which the participants were invited to review and approve the transcripts of the interview results. After getting the approval from the participants, the transcript data were analyzed by the researchers and discussed in the following part.

3. Data Analysis

The collected data were further analyzed through qualitative thematic analysis. Qualitative thematic analysis was used to evaluate the acquired material further. Thematic analysis is a technique for analyzing data to uncover patterns or themes within the data collected by researchers (Braun & Clarke, 2006). Thematic analysis is a technique for detecting, interpreting, and reporting on themes generated from the data. It can be used to interpret various features of a research issue.

The data obtained were analyzed in four stages. First of all, the researchers explored in-depth what phenomena occur from an event through participant perspective and what data wanted to be coded. Secondly, the researchers transcribed the data word-for-word and coded the data using the NVIVO 12 application. Following this, the researchers analyzed the data theme based on the two main research objectives (advantages & challenges of GBL). Next, the researchers checked the accuracy of the research results through member checking, where the researchers re-examined whether the information remained in nature or changed so that the truth of the data could be ascertained. The researchers continued the triangulation process until they had results that could be utilized as references to answer the study questions consistently. Lastly, the researcher checked the transcription results to ensure that no mistakes were made during the transcription process, provided that there were no incorrect definitions or meanings regarding the codes during the coding process, and concluded.

4. Ethical Considerations

Ethics is an integral part of any research that covers the entire research process, from selecting research topics, collecting data, analyzing data, and reporting data (Burles & Bally, 2018). Following the principles of ethical research codes, before conducting the classroom observation and the interviews, the information about the current study was provided to each participant through the explanatory statement and consent form. More specifically, participants were informed of the study's purpose and their right to withdraw at any time and to decline to respond to the study's questions. Their identities would remain anonymous, and their place of work would not be revealed to maintain privacy and safety from any misuse. The researchers asked the participants to sign the consent form if they were willing to participate in this research.

C. FINDINGS AND DISCUSSION

1. Findings

a. Advantages of GBL

Based on the data that has been qualitatively coded by thematic analysis through NVIVO 12, there were five advantages to implementing GBL, including helpful as learning media, improving students' engagement, self-improvement for teachers, increasing learning motivation, and improving technological skills which can be identified in Figure 1. In this regard, helpful learning media are related to displaying scores and statistics, easy operation, and fun learning methods, as shown in Figure 1.

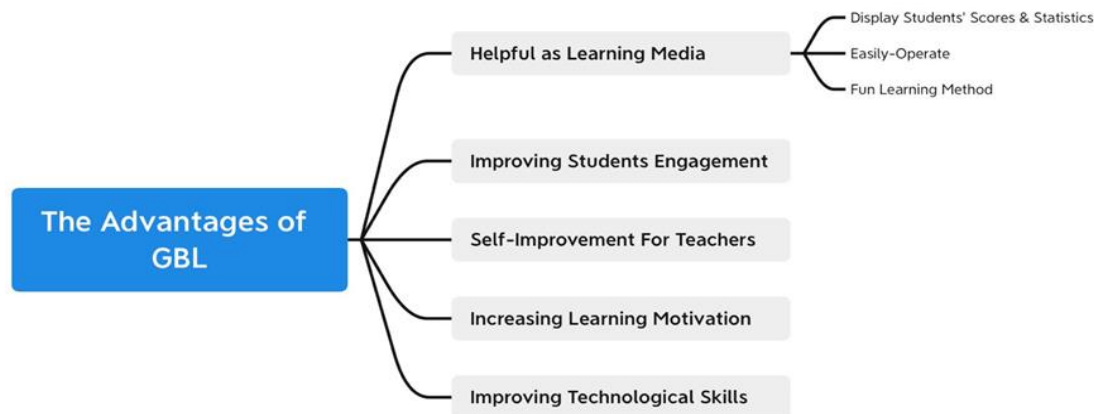


Figure 1. The Advantages of GBL

After identifying the kinds of the advantages of GBL, this study also examined the number of instances for each type of advantage from the codes being analyzed to explore the dominant advantages reported by the teachers in the qualitative interview. There were 55 identified codes/references related to the advantages of GBL. It was identified that helpful as a learning medium became the most dominant advantage with 21 codes in the data. Following this, primary school teachers also reported that GBL could improve students' engagement during online learning with 15 codes followed by self-improvement for teachers with ten codes and increasing students' learning motivation with five codes. Furthermore, improving technological skills became the least benefit reported in this study with four codes, as shown in Table 2.

Table 2. The number of instances regarding the advantages of GBL

No	Advantages	Number of Codes	Total Codes
1	Helpful as Learning Media	21	
2	Improving Students Engagement	15	
3	Self-improvement For Teachers	10	55
4	Increasing Learning Motivation	5	
5	Improving Technological Skills	4	

b. Helpful as Learning Media

Most of the primary school teachers participating in this study agreed that GBL is helpful as a learning media that can be used as a teaching tool in online learning.

GBL greatly facilitates teachers in making learning materials. The teacher does not have to try hard to make everything like traditional learning media. For instance, in quizzes, we can search the internet about the learning material we want to teach. We modify the interesting ones either in the form of games or quizzes, and then we adjust them to the needs of our learning materials, so the teacher does not take a long time to make learning materials. **(T3)**

The first advantage of GBL in this study is that it helps teachers make learning materials time-efficient. There are three sub-themes within the 'helpful as a learning media' advantages: display scores and statistics, easily-operated and fun learning methods. Some

teachers who participated in this study shared their experiences regarding the effectiveness of GBL in-display scores and statistics features in GBL.

1) Display Scores and Statistics

Some of the students are happy and eager to learn if they can see the score of their work directly; this makes them want to try more to get the best score and compete among their friends because they can see who has the highest score. **(T3)**

There are live scores when the students are doing their tasks. Many students like this feature because children usually have a highly competitive spirit, making them ambitious in doing their work. The goal is that if they get high scores, it can be seen by their friends. **(T5)**

The existence of a live score that students can see while doing their work can spur students' enthusiasm to compete with their friends to get the best score, so this feature helps foster students to compete.

We can also analyze the results directly at the end of the learning session, so teachers do not bother recapitulating student scores manually. This feature is so helpful. **(T3)**

In addition to increasing students' enthusiasm for winning the games and competing with their friends, the display score and statistics feature helps teachers analyze students' grades by directly seeing the students' work results.

2) Easily-Operated

GBL is quite interesting, easy to use, and very effective in helping educators, especially in preparing learning materials because the features are complete. It has been designed for us to upload videos, and music, make quizzes, add pictures, and do other things. So, I think it is fascinating, very good, and indeed very helpful for teachers. **(T3)**

According to Teacher-2 (T2), besides having many exciting features that can be used, GBL can also be easily understood and used, especially for teachers.

3) Fun Learning Method

The difference with traditional learning is that the teachers can show games and share screens at the same time if we use game-based learning. We can let the students play the game while learning which is more interesting. There are pictures they can shake, songs, and games that they have to press or move, for example, a puzzle game, so learning is fun since the students do not just sit still, making GBL learning very interactive. **(T1)**

On the other hand, Teacher-3 (T3) also found that GBL made students not become passive and unmotivated during learning.

c. Improving Students Engagement

There are 15 codes regarding the advantages of GBL in improving student engagement.

My first experience using GBL was exhilarating because we could see the students

were pleased with learning while playing games with the teacher. Many of them sometimes ask for more, for example, "Ms, Ms... let us play another game..." or "Ms, let us play a game like yesterday." (T2)

With GBL, students become more active and responsive in learning. For example, they have become severe during the games, and they are trying to answer the questions quickly. (T4)

Many students become more creative and critical thinkers. The games that I usually play on the platform are games in the form of short questions that need their higher-order thinking skill. For example, guessing a picture (T5)

Based on the teachers' statements, GBL can provide fun ways to *engage students* in learning. It helps increase *student* participation, especially in online learning, and fosters *students* to think creatively. *GBL* can be a fantastic tool for teaching to *engage students* as it is designed to provide genuine and fun learning experiences for students.

d. Self-improvement for Teachers

In addition to helping teachers provide fun learning for children, GBL also makes teachers have to learn to be more creative and innovative in making learning in the form of games that teachers can make into various games every day, so students do not get bored, especially in online learning. Also, teachers must master digital technology skills, which inevitably make teachers learn to explore new abilities.

I learned self-improvement. As teachers, we are required to be more creative, think innovatively, and think critically in making appropriate learning for children with difficult situations like this, which in the end, inevitably, we also learn to adapt to conditions. (T2)

GBL helps teachers make learning material fun, and every day the teacher can create a different learning model so that students do not get bored and just study monotonously, as long as the teacher is willing to try. (T3)

e. Increasing Learning motivation

One of the challenges of an online learning system is students' lack of learning motivation to get involved in online learning.

The key is that when children are in a good mood, they will be motivated to learn, and they will be self-initiative to learn if the motivation is there. So the learning is more accessible to them and accepted by them without being forced. (T2)

Learning motivation is an important thing that students must possess. Teacher-3 (T3) admitted that GBL could increase students' learning motivation by attracting students' attention with games. Doing so can raise their learning mood.

f. Improving Technological Skills

Students must have at least a basic knowledge of digital technology in this current online learning system because all the online learning platforms are played on digital devices. GBL platforms are one of the learning tools that use digital technology.

When using the GBL platforms, the skills shown by the child are the ability of digital technology or IT. Because they learn how to open a platform website, then enter

the code. The most significant skill shown by students in learning GBL is their IT skills. **(T4)**

Teacher-4 (T4) feels that students are becoming more familiar with digital technology tools since they are starting to use GBL. Teacher-5 (T5) also has the same opinion regarding increasing students' technological skills and abilities through GBL.

The child can master the gadgets he has. Because if we give games without a platform or application, which they only answer or write orally, they can gain reading or speaking skills now if they use the platform, the abilities and skills they get can master the devices they have **(T5)**

g. The Challenges of GBL

Based on the data that has been qualitatively coded, primary school teachers faced four significant challenges in implementing GBL, including technical issues, lack of technological literacy, failing grades, and time limitations, which can be identified in Figure 2. In this regard, technical issue challenges are related to the unstable internet network and inadequate devices, as shown in Figure 2.

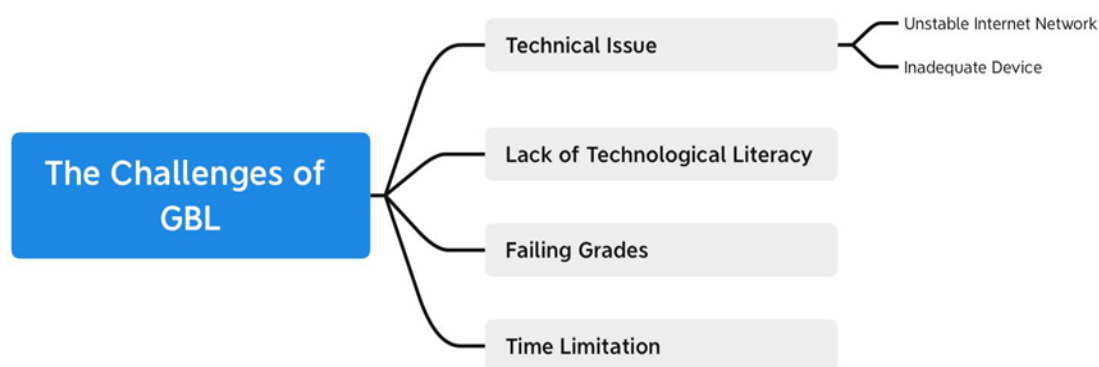


Figure 2. The challenges of GBL

There were 29 identified codes related to the challenges of GBL during online learning. It was identified that technical issues became the most dominant challenges reported by the primary school teachers with 17 codes in the data. Furthermore, primary school teachers also reported that they encountered challenges due to the lack of technological literacy during online learning with five codes. From the analysis, failing grade issues were also found in four codes, followed by time limitation issues in three codes, as shown in Table 3.

Table 3. The number of instances regarding the challenges of GBL

No	Challenges	Number of Codes	Total Codes
1	Technical Issue	17	17
2	Lack of Technological Literacy	5	22
3	Failing Grades	4	26
4	Time Limitation	3	29

h. Technical Challenges

Technical Issues became the most significant challenges both students and teachers face that can be identified with 17 codes. GBL is a learning media based on digital technology. When implementing it, it takes adequate devices and a good internet network. There are 17

codes/references regarding technical issues related to devices and internet issues in the analyzed data.

1) Unstable Internet Network

The most significant challenge is the poor network. Sometimes I get annoyed when I am explaining something, and the students are very excited when listening, but then the screen suddenly lags, or it could be that the students or I suddenly leave the meeting room. That is a technical problem that mostly happens. **(T2)**

This is one of the most common and unavoidable problems during online learning. Another technical problem was also felt by one of the teachers, Teacher-5 (T5). He argues that the internet network is the principal capital in conducting Game-Based Learning. It takes a stable and good network to run the GBL platform so that learning runs smoothly and does not stop when played by students.

The internet network must always be good if you want to use the GBL platform so that the students can play or continue to run the program and we can learn without any obstacles in the middle of learning. **(T5)**

If the network is inadequate, learning will stop suddenly. If learning stops suddenly, the teacher who is explaining has to continue learning by re-explaining the learning material that was cut off. Like the experiences of Teacher-1 (T1), who suggested that "Every learning activity is cut off, like it or not, it must be continued because there is no solution for internet problems."

2) Inadequate Devices

There is one sub-theme within the technical challenges, which is inadequate devices. In addition to the internet network, devices are essential things that need to be prepared if online learning runs smoothly. In running GBL in online microteaching, one of the teachers, Teacher-5 (T5), reported that GBL requires adequate devices; in his case, there are still many students who use old devices, and it becomes a problem since GBL does not support the old devices.

There are still many children whose devices do not support the GBL platform; for example, some children whose cell phones still use the 3G network and their cell phone memory is small, or they use an old laptop. Those cannot be used on the GBL platform. Even if it can, there will be interference, and maybe it will take a long time, and the buffering continues. **(T5)**

Teacher-3 (T3), one of the teachers, also reported the same problem, namely that incompatible student devices were one of the obstacles she experienced while using GBL when online learning. "There are still some children whose devices do not support the GBL platform. Many of them complain because the GBL feature does not work properly."

i. Technological Literacy

With five identified codes, the other issue faced by primary school teachers is a lack of technological literacy. The teachers mentioned that they still did not possess adequate

technological literacy, which led them to face difficulties in navigating GBL platforms that require technological literacy to deliver the lesson, one of which was Teacher-2 (T2):

In fact, GBL is very advantageous, but many teachers today cannot use it and may find it challenging to explore technology now. They cannot do a lot. **(T2)**

One of the teachers, Teacher-1 (T1), also believes that some teachers still do not understand how to operate digital-based learning. On average, they are elderly teachers or senior teachers.

We usually train and teach teachers who lack technological skills. However, it is challenging because it is not easy for them to understand. Maybe this is something new for them at an old age. **(T1)**

j. Failing Grades

Apart from technical problems, another problem faced by primary school teachers is the decline in grades:

From what I see from the results, if you use platform games, in my opinion, students' scores tend to be lower. So, GBL is not always suitable for student outcomes. There are many factors, one of which is that the students are more focused on the game content than the learning, so they are less severe **(T4)**

The decrease in students' scores when learning with GBL was associated with the students only focusing and enjoying the game content provided instead of the lessons given.

k. Time Limitation

Time limitation is one of the problems students face when using GBL. As suggested by Teacher-5 (T5) during GBL implementation:

I usually give the students 35 seconds to answer a question and 2 minutes for questions that require more time to think. Nevertheless, sometimes, it is still not enough for the student **(T5)**

So, one of the factors for the decline in students' grades is the time limit and poor student time management. Some GBL platforms require students to answer several quiz questions in a short time given. In this way, many children are left behind and do not have time to think when filling out the questions.

2. Discussion

a. The Advantages of Implementing GBL in Primary School Classrooms

Many previous studies have highlighted how GBL is beneficial as a learning medium during online learning since it helps teachers deliver material in a fun way. For instance, Dewi and Listiowarni (2019), in their research on the implementation of GBL in English lessons in elementary schools, found that GBL can be an alternative means to support learning. The results showed that interactive GBL in English subjects helped make it easier for students to make learning more fun. In this study, most teachers also have the same response that GBL can be used as a fun learning media because it is easy to operate along with the exciting

features in making learning that will make both teachers and students enjoy the learning process.

Apart from its use as a learning medium, GBL could also improve students' engagement in class. The terms of engagement refer to how players interact with a game (Jabbar & Felicia, 2015), how people feel emotionally and cognitively engaged with a game's elements, and how players behave within the game to accomplish their goals. A qualitative experimental study conducted by Ucus (2015) about primary teachers' views about GBL has shown that teachers agreed that students enjoy being involved in the game. Games are an effective way of instruction for all elementary school curricula. Teachers expressed those games construct a link between learning activities and students' engagement. Another study conducted by Avdiu (2019) about GBL practices in primary schools in Austria showed that teachers agreed on the use of GBL to develop students' logical thinking, writing and reading development, communication development, and problem-solving skills. Most teachers in this study responded that GBL forms students to be more active and responsive during online learning. Moreover, in some cases, GBL is considered to improve critical thinking in students, even in online classes. In other words, GBL successfully improves student engagement which can be assessed by how students are active and participate in online classes. GBL. Applying the GBL method to primary school is feasible and valuable for long-term learning.

Furthermore, GBL also awakens the intention and enthusiasm for teachers to improve their teaching media and teaching strategies to be better than conventional teaching. Ramani (2015) believed that the teacher's role is crucial in enhancing the teaching and learning process because learning outcomes are primarily determined by the role and competence of the teacher. Competent teachers can manage their teaching methods to optimize student learning outcomes (Wibowo & Farnisa, 2018). This study reports that while using GBL, teachers are also inspired to want to learn to renew and improve their old teaching methods to be better and more attractive to students by creating creative and innovative learning media through GBL.

The other advantage of GBL in a primary school classroom is its effectiveness in increasing students' learning motivation. A study conducted by Winatha and Setiawan (2020) using a quasi-experimental design outlined that student learning motivation increased significantly because of the application of the game-based learning model. Moreover, student learning achievement also increases significantly because of the GBL application. Similarly, most teachers agreed that GBL could increase students' learning motivation by attracting students' attention with games in this study. This is in line with other previous studies that found that GBL is one of the learning strategies that can help to motivate students in learning. For instance, a study conducted by Avdiu (2019) showed that teachers believe that applying GBL encourages students to do what we want them to do and the most straightforward approach to motivate students is through playing. Utilizing game-based learning to encourage students to learn is a proper way. GBL naturally provides a framework for inspiring students and appealing to their inherent desire to learn.

The last advantage of GBL is improving technological skills for students. In implementing daily learning, people frequently encounter technological advancements in education, as teachers often do by integrating technological tools into the learning process. A previous study in secondary school by Jumila et al. (2018) found that utilizing Kahoot (one of the GBL platforms) as a learning medium can impact the development of students' digital literacy. Similarly, in this study, teachers also admitted that students' most important skill in learning

GBL is their technological skills. In other words, learning in the current digital era requires knowledge and skills in digital technology. Using game-based learning that uses digital technology will grow and develop children's abilities and skills in using digital technology.

b. The Challenges of Implementing GBL in Primary School Classroom

GBL also has several challenges, including technical issues such as an unstable internet network. In a study conducted by Anggraini et al. (2021), some students experienced unstable internet networks while using GBL. Unstable internet networks will interfere with the learning process. In a similar vein, Darmawan (2020) revealed that if students cannot access the internet, they only can take the questionnaire but do not play the game because they have internet problems. The lack of a stable internet connection hinders their response to quizzes on the GBL platform. Similarly, this study found that the unstable internet network is the most common and unavoidable problem during online learning. Bunyamin et al. (2020) emphasized that in addition to a good internet connection, there must be adequate digital technology facilities such as smartphones or laptops to run GBL without any problems. This is also in line with the teachers' concerns in this study, who reported that GBL requires adequate devices since some of the GBL platforms are not supported by the old devices.

The other identified challenge of GBL is that some teachers lack technological literacy. Digital technology has become inextricably linked to education. Digital literacy abilities are essential for a teacher, as they have become an integral aspect of education (Benson & Kolsaker, 2015). This study identified that some of the old teachers still did not possess adequate digital technology literacy, which led them to face difficulties navigating GBL platforms requiring technological literacy to deliver the lesson. Therefore, the finding of this study reports that teachers, especially elementary school teachers, must be equipped with various literacy skills, including digital technology literacy. This literacy is helpful as a provision for application when they teach, considering that today's education is always connected with digital technology. The knowledge and skills of digital technology are essential for educators.

Furthermore, in many previous studies, GBL has increased students' grades. For instance, in a survey conducted by Sari et al. (2020) about the effectiveness of GBL on sports subjects in elementary school, they reported an increase in students' psychomotor outcomes. Another study by Wahjusari et al. (2021) found that GBL in terms of Quizzes is more effective in increasing grades than conventional learning. Dissimilarly, in this study, although GBL is considered to increase student engagement in the classroom, GBL is considered ineffective in increasing student grades. According to the teachers, the decline in students' grades when learning with GBL was associated with the students only focusing and enjoying the game content instead of the lessons given.

Lastly, time limitation became the following challenge in implementing GBL in primary school. There have been previous studies that have examined the effect of time limitation on declining student grades. For instance, a survey conducted by Chernov et al. (2021) showed that some students regarded time limitation as an obstacle that made them feel unfair and stressed. In addition, one of the teachers in Ucus (2015) suggested that implementing GBL takes time in the learning process, leading the students to focus on the games instead of the lesson on their games. This is in line with this study that the time limit is one of the problems students face when using GBL. Some GBL platforms require students to answer several questions quickly, while many need a long time to think and fill out questions.

D. CONCLUSION AND SUGGESTIONS

The teachers generally emphasized the importance of GBL mainly for the learning tools used in online learning because the features are beneficial, exciting, and easy to learn. In addition, the teachers demonstrated that GBL encourages a positive attitude toward learning and helps students develop skills in thinking creatively and critically and being advanced in technology. The teachers also reported that GBL is one of the teaching strategies used in this pandemic situation. At the same time, the current curriculum requires teaching and learning practically and interestingly. GBL could be an option since games are attractive for students and possible to use nowadays to reach learning goals. Nevertheless, the teachers also experienced challenges while implementing GBL, including technical issues such as the unstable internet network and inadequate devices. The teachers also highlighted their obstacles in learning digital technology since some teachers lack technological literacy and skill. Another teacher considered that the students did not consistently achieve the intended results, including some students performing decline in grades. On the other hand, the time limitation is another issue students face while implementing GBL. The integration of GBL into curriculums presents an excellent opportunity for online learning.

For suggestions and recommendations, future studies focusing on online learning could build upon our exploratory study by expanding the size and scope to allow more rigorous qualitative analysis, including examining how GBL affects student grades. Additionally, researchers could investigate the application of GBL in different subjects. In terms of practical recommendations, teachers need to study more about how digital technologies work because both teachers and students have to deal with online learning that requires the knowledge and skill of digital technology. Regarding this, the schools can provide digital technology literacy training to overcome this issue. Furthermore, the teachers need to evaluate and consider what learning platforms in GBL are suitable for the student grade level.

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