Game-Based Learning and Students' Behavioral Engagement at a Private School In Minahasa Utara

Petrus Kondo*[1], Violina Gloria Glenny Ruth Tamalea[2]
[1] Fakultas Keguruan dan Ilmu Pendidikan, Universitas Klabat, Manado, Indonesia
[2] Fakultas Keguruan dan Ilmu Pendidikan, Universitas Klabat, Manado, Indonesia
e-mail: *[1]petrus.kondo@unklab.ac.id [2]s21810035@student.unklab.ac.id

Abstract

This study was done to determine the correlation between Game-based learning and Students behavioral engagement. This study used quantitative design method which were descriptive and correlational. The instrument used in this study was a questionnaire. The researchers adapted the questionnaire from Kolengen (2012) for Game-based learning and second questionnaire adapted from Setyowati (2021) for Student behavioral engagement. The respondents of this study were 65 students from grade VII of a private junior high school. The result of this study showed that the level of using Game-based learning was 4.00 which is categorized in high level. Secondly, the level of Student behavioral engagement was 3.91 which is high level. The last result showed that there is significant correlation between Game-based learning and Student behavioral engagement.

Keywords—Game-based learning, Student behavioral engagement

Abstrak

Penelitian ini dilakukan untuk mengetahui korelasi antara pembelajaran berbasis Game dengan perilaku keterlibatan siswa. Penelitian ini menggunakan metode desain kuantitatif yang bersifat deskriptif dan korelasional. Instrumen yang digunakan dalam penelitian ini adalah kuesioner. Para peneliti mengadaptasi kuesioner dari Kolengen (2012) untuk pembelajaran berbasis Game dan kuesioner kedua yang diadaptasi dari Setyowati (2021) untuk perilaku keterlibatan Siswa. Responden penelitian ini adalah 65 siswa kelas VII di sebuah SMP swasta. Hasil penelitian ini menunjukkan bahwa tingkat pembelajaran berbasis Game yang digunakan adalah 4,00 yang dikategorikan dalam tingkat tinggi. Kedua, tingkat perilaku keterlibatan siswa adalah 3,91 yang merupakan tingkat tinggi. Hasil terakhir menunjukkan bahwa terdapat korelasi yang signifikan antara pembelajaran berbasis Game dengan perilaku keterlibatan siswa.

Kata kunci—pembelajaran berbasis Game, perilaku keterlibatan siswa

INTRODUCTION

Game-based learning is an approach that combines learning materials and game features to facilitate the acquisition of knowledge and skills. This is one of the interesting approaches to do currently. According to Army (2021) there are several applications and platforms that support Game-based learning have been launched to help teachers/educators teach topics in a way that is easy for students to understand. Along with the development of information technology, many learning implementations carry interactive themes. Interactive learning methods are believed to be able to increase the speed of comprehension and understanding of students. One of the components of interactive learning media is the audio & visual component. Aslanabadi and Rasouli (2013) as cited in Febri (2021) stated, "Games always bring happiness and get students' attention more than teachers give materials while learning." Through games, students can learn their materials very quickly.

Student Behavioral Engagement is a component of Student Engagement which refers to behavioral, affective, cognitive, and academic components related to students' academic performance and commitment to learning. Trowler (2010) mentioned that Behavioral Engagement is student Engagement in the form of behavior. Students with behavioral engagement usually exhibit behaviors such as compliance with classroom rules such as attendance and engagement and do not exhibit destructive or negative behaviors. This is also one of the things that support student success. A student's behavior in the classroom is not only a form of participation in the learning process but also a way of responding to a friend or teacher. Behavior engagement is related to concentration, attention, effort, and attendance. Therefore "Behavioral Engagement is how easy it is for a student to engage in learning activities in terms of attention and concentration, effort to complete a task, patience, and the student's ability to follow school-established norms and rules." Reeve (2014). Student Engagement refers to the extent to which students are actively involved in learning activities.

In today's era, learning English cannot be underestimated, as is the case with the world of technology now that many online games are very distracting for students' focus. The application of Game-based learning is good media to increase the behavioral Engagement of students. Syarif (2020) stated that "A learning can be effective if it uses learning methods and learning media that match with the learning styles of the participants". Furthermore, the existence of Game-based learning makes students more active in class because in this digital era using Game-based learning is very suitable. Creating a fun learning environment and motivating students to learn, competition and teamwork to complete the mission of the gaming application can also add motivational elements to students, quick and concrete feedback makes it easy for students to find other suitable ways to complete their assignments Wihanry (2015). And with Game-based learning, can also train three stimuli for students at school, namely intellectual, emotional, and psychomotor.

Game-based learning, of course, has recently become known in the world of education, because online learning has created many platforms or game applications to support online learning. Ajun (2021) stated that the use of technology in learning makes learning more interesting. Integrating technology into the classroom environment increases behavioral Engagement and motivates students by using a Game-based learning student response system. Educational games and technology-based student response systems increase student motivation and engagement Barrio (2015). The use of game-based learning is an effective thing to do currently when learning is already supported by devices. Game-based learning is also a significant tool that can help a good learning process. Aini (2018) mention that "This Game-based learning can help students be more active, educative, and have a high level of cooperation when discussing to solve a problem". For this reason, students will be interested in this method, and they will be engaged in learning so that they can understand the material given by their teacher easily. With Game-based

learning, many platforms have been created, including Kahoot, Quiziz, Quizlet, and others. According to Nurhayat (2020) someone can create student activity by using interesting learning media. One of the interesting learning media in online learning is the Quiziz. And with Game-based learning, students can also stimulate their brains to be more engaged and happier.

Teachers when using game-based learning in today's era are the right actions in helping students to be engaged in learning. Aini (2018) mention that the provision of game-based learning has also been proven to help motivate students to be engaged in learning. Prensky (2010) cited in Khairunnisa (2021) In his journal article also stated that this game-based learning stimulated students in terms of their intellectual, emotional, and psychomotor aspects. So, it can be concluded that this learning method can be a good solution in the current pandemic era. Where many students are bored with monotonous learning. Freitas (2006) mention that there are several benefits of this game-based learning, namely: motivating and engaging all students in learning, train students' abilities such as literacy and numeracy skills, as a therapeutic medium to overcome cognitive difficulties, playing certain roles or professions before practicing in real life, and empower students as producers of multimedia or game-based content.

Online learning during Covid19 was an appropriate crisis response, online (daring) learning stands for network learning and is also known as online learning. The transition from face-to-face learning to distance learning via online systems is an attempt to reduce the risk of Covid19 epidemics and infection. Meda (2020) Online learning is now taking place at all levels of education, from elementary school to college level because everything is limited by distance and the current pandemic situation. Because education in today's era is online based, wherever one is, one can access this online learning. According to Ariantoro (2016) the Internet can have a significant impact on education, besides being easy to find and use, the development of smartphone devices is currently experiencing very important developments in various walks of life. Online learning, a subset of distance learning, includes a variety of technology applications and learning processes, including computer-based learning, web-based learning, virtual classrooms, and digital collaboration (Urdan, 2000).

The engagement of students in the classroom is a learning process and a critical thinking process that determines the success of learning in the classroom because the student learning process is the main goal of education that is made. Turangan (2020) stated, "Student engagement has been used to depict students' willingness to participate in routine school activities, such as attending classes, submitting required work, and following teachers' directions in class". So, a student must be able to apply attitudes and behaviors that do not deviate from what has been set in his school. Student engagement is an attachment in the learning process, both in academic activities and non-academic activities that can be seen through the behavior, emotions, and cognition shown by students in school or class Fredrick (2004). For that we cannot judge all our students from just one aspect, every assessment must be balanced, Fredrick (2004) also mentions that student engagement was found to consist of three aspects: behavioral engagement, emotional engagement, and cognitive engagement.

Cognitive and emotional also affect students' attitudes to being involved in the learning process so it's not just behavioral engagement. According to experts about cognitive engagement, this aspect is related to the student's willingness to do their best in each degree to be able to push themselves beyond what is needed to understand or acquire their abilities, as needed. Referring to a concept, the teacher is someone who plays an important role in increasing student engagement from a cognitive perspective. Students become cognitively active in learning (active engagement) if they can actively use their cognitive abilities learning by engaging in activities such as (creating) during the learning process Idris, Syamsurizal, and Muhammad (2018). Cognitive and active participation occurs when

students remember self-regulation, and the cognitive aspect also tends to make ordinary learning teacher centered.

Furthermore, in the emotional field, the emotional reactions are usually the same as shown by students in their Engagement in class, namely to teachers and classmates. This emotion includes excitement, enjoyment, joy, and satisfaction in the school's academic activities and is associated with attitudes, interests and interests, ratings, classes, teachers, classmates, or the student's emotional response to the school. This emotional aspect is also very important so that students can be more sensitive to their environment at school later so that they can take an active part in the learning process Connell (2004); Finn (1989) cited in Fredricks (2004).

METHODOLOGY

This study used a quantitative research design, where the data were taken from a questionnaire. Musianto (2002) stated that the quantitative approach directs and focuses research by theoretical testing, constructing, or compiling facts and data, statistical descriptions, relationship clarity, and prediction. In descriptive research, the goal of the study is to obtain detailed, systematic, and accurate explanations and explanations of the phenomenon Ridha (2017). For this reason, a descriptive method is needed to describe the level of use of Game-based learning on students and the level of student in student behavioral engagement in the learning process. According to Williams (2007) Correlation studies examine the differences between the two characteristics of a research group. For this reason, the Correlation Method is used to find out whether there is a correlation between Game-based learning and Student behavioral engagement. These are the designs used in this study.

The respondents of this study were students in semester 2 of the 2021-2022 academic year at one private junior high school in Minahasa Utara. All students who participated in this study were from class VII B with 31 students, class VII C with 32 students, and the last from class VII D with 33 students. For this reason, the total number of students participating in this study were 96 students, where these students have participated in pilot studies and real studies. 31 from class VII B for the pilot study and the remaining 65 for the actual study.

The instrument used in this study was adapted from Setyowati (2021) where the number of items from the original questionnaire was 32 but only 15 items were taken regarding student involvement: behavioral, emotional, and cognitive. Behavioral engagement is 1,2, while emotional engagement is 3,4,5,6,7 and finally cognitive engagement is 8,9,10,11,12,13,14,15. Previously in the thesis proposal, the researcher planned to use 19 items regarding the student behavioral engagement variable, but through a pilot study after the data was tested, it turned out that there were 4 items that were declared invalid because they had a value not greater than 0.3. And the second questionnaire was adopted from Kolengen (2012). It contains 15 items of questions about the use of games in learning or Game-based learning.

RESULTS AND DISCUSSIONS

This section contains the results of the study. These results were gained through some descriptive and inferential statistical analyses to answer the research questions. They were then discussed after the presentations of them.

Table 1. Descriptive Statistics of Game-Based Learning

Variable	N	Mean	Std. Deviation
Game-Based Learning	65	4.00	.59

The mean score of using game-based learning was 4.00 (see Table 1). According to the 5-point-scale of data interpretation, the mean score fell between 3.50 – 4.49. The results showed that students in classes VII C, and D of the private school had a high level when using game-based learning in the learning process. This indicates that game-based learning is an interesting media for students in learning. This result is in line with the results found by Safitri (2022) conducted at MTs Negeri 2 Jambi, the results showed that with the use of game-based learning with 3 tests carried out, the percentage value of the use of game-based learning in learning was very high reaching 91%. In other words, it is the same as previous research that the use of game-based learning is very effective in the learning process.

Table 2. Descriptive Statistics of Students' Behavioral Engagement

Variable	N	Mean	Std. Deviation
Students' Behavioral Engagement	65	3.91	.46

The mean score of students' behaviour engagement was 3.91 (see Table 2). the result showed the mean score of Students' behaviour engagement in the learning process at SMP Advent Unklab in Class 7C and d fall in the category with a value between 3.50 – 4.49. it means the mean score of their behaviour engagement in the learning process is a high level. Therefore, based on the findings, when there is a method that students prefer in class, the students will be engaged in the learning process. Similar to previous research conducted by Sa'adah (2018) at SMA Negeri 9 in Semarang, the results of this study showed that the involvement of students more specifically their behaviour in learning is very helpful for student learning outcomes. In other words, if students are involved in-class activities, doing assignments given by the teacher, etc., then the value or student learning outcomes will increase.

Table 3. Correlation between Game-Based Learning and Students' Behavioral Engagement

		Game-Based Learning	Students' Behavioral Engagement
G	Pearson Correlation	1	.47[**]
	Sig. (2-tailed)	65	.00
	N		65
S	Pearson Correlation	.47[**]	1
	Sig. (2-tailed)	.00	
	N	65	65

Based on Table 3, the result shows that the p-value is .00. This means that there is a significant correlation between Game-based learning and Student behavioral engagement. The results showed that r = .47 and p = .00 < α = .05. With the use of game-based learning, there is an increase in student behavioral engagement in the learning process. Value of r = .47 the strength of the correlation is moderate and positive. Therefore, when the use of game-based learning methods continues to be applied by teachers, it will greatly affect student behavior in the classroom, they are more engaged. So, an increase in the variable X is followed by an increase in the variable y. According to McLeod (2019) if the *p* value is less than .5 or 5% it is significant. Therefore, by looking at the results in table 4.3, it is found that the value of p = .00 < .05 then H0 is rejected: thus, the alternative hypothesis stating "There is a significant correlation between Game-based learning and Students' behavioral engagement" is accepted.

CONCLUSIONS

Based on the findings, the students of Class VII at the private school feel that the use of game-based learning in the classroom is very helpful for them in learning. It is because apart from learning they also have a fun experience because learning is a combination of materials and games. Therefore, the level of using Game-based learning on students was high. Furthermore, the level of students' behavioral engagement in the learning process was also high which means that the students can enjoy and be engaged when the learning process is fun and interesting. Finally, the main finding revealed that there was a moderate significant correlation between Game-based learning and Students' behavioral engagement. This means that the more they use games in learning, the more engaged they would be in learning.

RECOMMENDATIONS

Based on these results, the researcher proposes these recommendations. Firstly, for students, this research will help them that the use of game-based learning really helps them to be engaged in learning in the classroom. Furthermore, because the result of using game-based learning was high, it is recommended that students be able to practice more of their skills in using the instructional media used to support learning using the game-based learning method. Moreover, because the level of student behavioral engagement was high, those students could discuss with the teacher whether they could use methods that could make them enjoy and understand learning. Furthermore, because there is a significant correlation between the use of game-based learning and students' behavioral engagement, the research recommends that students could prepare media that is always used when learning using game-based learning because of course when students can prepare media that support learning, of course, they like to be engaged in the learning process made by their teacher.

Due to the high level of use of game-based learning, game-based learning is maintained and has a good impact so the researcher recommends to schools that when schools continue to use this method, students will actively participate. in the learning process. In addition, based on the results of the study showed that the level of student behavior involvement was at a high level. Therefore, when using an effective method, one of the methods that can be used is game-based learning, which will involve students being engaged in learning in the classroom, and the school can be maintained and can also be further improved. Furthermore, based on the research results show that where there is a significant relationship between game-based learning and student behavioral engagement has a positive correlation, the use of game-based learning in the learning process will make students engaged in learning, and it is highly recommended for schools that use this method, maintained, and further developed. because basically, the purpose of education is so that

students can enjoy and be engaged in learning. Finally, for the next researchers who want to develop the same learning about game-based learning and student behavioral engagement, they can use this research as a reference, and the researchers would like to recommend the next researchers to be able to do this research in different schools. To be able to find out whether there might be differences in results when carried out in different schools.

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