

The Effect Of Application Of Wordwall Gamification Media In Accounting Learning On Vocational Students' Learning Interest In Sukoharjo

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Abstract. *This research aims to examine the effect of the application of gamification learning media in accounting learning on the learning interests of students of SMKN Sukoharjo. The population of this study was the first grade students (class X) of Accounting and at SMKN Sukoharjo. The writer used random sampling technique to choose the sample. There were 36 students of X AKL B as the experimental class and 36 students of X AKL C as the control class. This study uses an experimental method with a quasi experimental approach. The technique of collecting the data was observation and questionnaire. The techniques of analyzing data were paired sample t-test, independent sample t-test, and N-Gain. The results of this study showed that there was a significant difference in students' learning interest. It was proven by the acquisition of paired sample t-test test results with a significance level of $0.000 < 0.05$. In the independent sample t-test test results obtained a significance value of $0.000 < 0.05$. In the N-Gain test results obtained in the experimental class showed a score of 0.38 or $0.38 > 0.3$. In addition, the average learning interest of students in the experimental class after treatment was 79.81 higher than the control class which had an average of 72.19. Thus it can be concluded that gamification media affected the students' learning interest of basic accounting learning at SMKN Sukoharjo.*

Keywords: *Gamification, Interest in learning, Basic accounting*

INTRODUCTION

The main task of educators is to guide and assist students in learning by creating activities that can grow and increase students' interest in learning. Teachers have an important role in fostering students' interest in learning by teaching in a fun way (Riamin, 2016). Interest in learning is an important factor in achieving student learning success (Yunitasari & Hanifah, 2020, p. 232). If there is no interest in learning in students, then students tend to choose to remain silent and cannot think critically so that learning objectives cannot be achieved (Ndraha & Harefa, 2023).

Interest in learning is a desire to like or be interested in something and learning activities without any encouragement from other people (Ricardo & Meilani RI, 2017, p. 82). Interest in learning activities is an important factor in the success of the teaching and learning process in education (Rahmayanti, 2016, p. 206). The success of the learning process can be achieved by fostering and increasing students' interest in learning so that satisfactory learning results can be obtained.

When observing the learning process in the AKL there are many more problems in class. This is in accordance with the opinion of Nasir et al. (2017) who stated that low interest in learning can be seen from students' attitudes, such as being indifferent to learning, learning activities are considered a burden, and quickly get tired and bored in learning.

There are factors that influence students' interest in learning, namely internal and external factors (Slameto, 2013). Internal factors refer to students' physical conditions, while external factors include family, school and community factors (Maryani & Sopiansah, 2019, p. 67). One of the external factors that influences students' interest in learning in the school environment is the teaching media used by teachers in the teaching and learning process. As technology develops, learning media will continue to experience development and progress, so the media used will be more varied and interesting. However, in practice, there are still educators who have not been able to utilize existing technology. Based on previous research, the use of learning media is still minimal. Educators only use PowerPoint as a medium to explain material to students. When the teacher delivers lessons, it is only done using a conventional model through PowerPoint and discussions, so it seems boring and does not attract students' interest (Aini, 2018, p. 250). The use of less varied learning media causes the learning process to seem monotonous so that some students pay less attention to the material presented by the teacher. The large number of students who pay less attention is caused by students' lack of interest in following lessons (Aini, 2018, p. 250). Handling these problems can be solved using Behaviorism learning theory.

Behaviorism theory is an approach that prioritizes changes in student behavior as a result of stimulus and response (Sudarti, 2019). In the application of Behaviorism theory, student behavior results from the learning process, so there needs to be the right stimulus given to students to be able to produce the desired learning. The main focus of Behaviorist learning theory is visible behavior and the external causes that stimulate it (Nahar, 2016).

The problems above can be provided with solutions through innovation in learning media. Creative teachers are able to create an effective learning atmosphere so that students' interest in learning can increase (Siahaan et al., 2021, p. 22). What educators must do in using effective learning media is to find, search for and choose media that can meet students' needs and attract students' interest in learning (Miarso & Mahmud, 2012). Using appropriate learning media can provide a more interesting, interactive and relevant learning experience for students.

Efforts to increase students' interest in learning can be done by changing the media used to something more interesting so that students are more interested in participating in the learning process. The learning process can be innovated by using learning media in the form

of gamification. Gamification is the application of game elements into a non-game context to solve a problem. Gamification is a learning media that is expected to increase students' understanding quickly because it is supported by interesting games (Novaliendry, 2013).

The implementation of Gamification can be done using media, one of which is Wordwall. According to Sari & Yarza (2021) Wordwall is an application that can be used as a learning medium, a source in learning, and can be used as a tool for online-based assessment and is attractive to students. This media is an internet-based game on a website that can be used as a learning tool in the classroom. Wordwall has various quiz templates in the form of online games where teachers can create various interesting and interactive learning templates.

Wordwall can create an interactive teaching and learning process with varied, applicable and interactive games to convey learning material (Winanti et al., 2017). The material presented in a Wordwall is able to increase students' interest in learning so that learning activities can be carried out in a fun and non-monotonous manner. The use of interesting learning media in the learning process is thought to increase students' interest in learning. This is in line with research from Launin et al. (2022); Sari & Yarza (2021) concluded that the use of the online game media Wordwall can influence students' interest in learning.

Based on this description, it encourages researchers to conduct research with the title "The Effect of Application of Wordwall Gamification Media in Accounting Learning on the Learning Interest of State Vocational High School Students in Sukoharjo". Based on the results of observations that have been made, SMKN XY students have never applied gamification media in the form of Wordwall in accounting learning.

THEORETICAL STUDY

1. Behaviorism Theory

According to Watson (1930) in the theory of behaviorism, all human behavior, whether emotions or physical activity, is actually just an illusion originating from stimuli and responses to them. The behaviorist perspective focuses on the role of learning and explaining human behavior. According to Desmita (2015), behaviorist learning theory is a learning theory that understands human behavior using an objective, mechanistic and materialistic approach, so that changes in a person's behavior can be done with conditioning efforts. Behaviorist learning is often called stimulus response learning (Nahar, 2016). According to this theory, the most important thing in learning is input in the form of stimulus and output in the form of response. Stimulus is something that the teacher gives to students, while response is a reaction or response from students to the stimulus given by the teacher.

2. Interest To Learn

Someone who has an interest in something will naturally do what they want without coercion from other people. According to Djaali (2013: 122) interest is a feeling of wanting to know, learn, admire or have something. A student should have an interest that arises from within himself to learn. Learning is something that happens naturally to gain knowledge or skills through teaching and learning activities.

A person's interest in learning is not always stable, but always changes. Therefore, it needs to be directed and developed towards a choice that has been determined through factors that influence that interest. Lusi (2016:149-159) explains that students' interest in learning is influenced by the following things:

1. Internal factors

Internal factors are influences that originate within students in the form of attitudes, abilities, attention and talents.

2. External Factors

External factors are influences from outside or the student's immediate environment such as the school environment, family and community, which can be in the form of learning facilities and infrastructure, guidance from parents and teachers, attention in the learning process, support and motivation from parents.

One of the external factors that influences interest in learning is the school environment, where this research examines the influence of the use of learning media used during the teaching and learning process on students' interest in learning.

According to Darmadi (2017:322), indicators of interest in learning include:

- 1) There is a concentration of attention, feelings and thoughts of the subject towards learning because of interest,
- 2) There is a feeling of enjoyment towards learning,
- 3) There is a willingness and tendency in the subject to appear active in learning and to get the best results.

3. Instructional Media

Learning media is an intermediary means in a learning process (Daryanto, 2015). The use of learning media in the teaching and learning process can generate new interests and desires, generate motivation and stimulation of learning activities and even bring new psychological influences to students (Arsyad, 2017). Learning media is a means of conveying information that is created or used in accordance with learning theory, can be used for learning purposes in conveying messages, stimulating students' thoughts, feelings, attention and will so

that it can encourage a deliberate, purposeful and controlled learning process (Amanullah, 2020).

4. Gamification

Gamification is the use of game mechanical elements to provide practical solutions by building interest in certain groups (Vianna, 2014). KM Kapp and J. Cone define gamification as a concept that uses game-based mechanics, aesthetics and game thinking to engage people, motivate actions, promote learning and solve problems (Kapp, 2012). The aim of gamification is to make teaching and learning activities more interesting, interactive and challenging with elements such as prizes, levels, competitions and challenges. This is in line with research by Permata and Kristanto (2020), in this research implementing gamification media. Based on the results of research that has been conducted, the media used is effective in sparking students' interest in learning.

5. Wordwall

Wordwall is a learning media designed with the aim of increasing group learning activities and actively involving students in the learning process (Zulkifli, 2019). Wordwall is an interesting game application available in the browser. The application was created with the specific aim of being a learning medium, learning resource and fun assessment tool for students. Media Wordwall provides several types of games including quizzes, matching, anagrams, random words, word searches, grouping, etc. The Wordwall page provides examples of forms of application of teaching materials packaged with game templates as an illustration to new users about this type of creativity so that teachers can easily understand the application of this media to teaching materials. The material presented in a Wordwall is able to increase students' interest in learning so that learning activities can be carried out in a fun and non-monotonous manner. This is in line with research from Launin et al., 2022 which concluded that the use of the online game media Wordwall can influence students' interest in learning.

RESEARCH METHODS

The type used in this research is experimental research. The research method used is a Quasi Experimental Design type experiment. The experimental method is a research method aimed at finding the influence of treatment on others under conditions that can be controlled (Sugiyono, 2016:72). This research used a control class which was not given gamification media treatment so it used learning media in the form of PowerPoint, while the experimental class was given gamification media treatment. In this research, the learning model used is discovery learning because the learning series involves students actively.

The population of this study was class X students with the Institutional Accounting and Financial Skills Program who attended SMK Negeri In this study, two classes were taken as samples with a total of 72 students. Consisting of an experimental class and a control class. The experimental class in this research is the XB Accounting and Institutional Finance class while the control class in this research is the XC Institutional Accounting and Finance class.

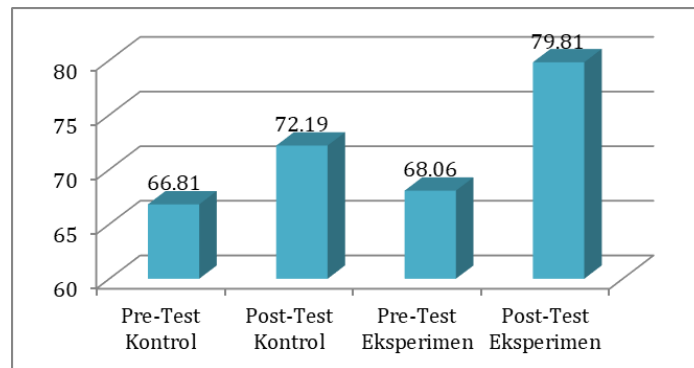
Data collection techniques use observation and questionnaires. The researcher carried out validity testing using content validity using the Expert Judgment method with a score of 0.84 so that it was declared valid and suitable for use. Meanwhile, the reliability test was measured using the Cronbach Alpha coefficient with the help of the SPSS tool with a value of $0.351 > 0.6$, so it was said to be reliable. The prerequisite test for this research used the Kolmogorov-Smirnov normality test assisted by SPSS software version 27 for Windows with the results for both classes having a sig value > 0.05 , so the data met the requirements for analysis. The Levene homogeneity test was assisted by SPSS software version 27 for Windows with the results of both classes having sig values. > 0.05 so it is suitable to be used as a research sample. Data analysis techniques use descriptive statistical analysis and inferential statistical analysis. The hypothesis test uses the Paired Sample t-test, Independent Sample t Test, and N-Gain Test.

RESULTS AND DISCUSSION

1. Comparison of Initial Results and Final Results of Learning Interest in Control Class and Experimental Class

Data comparison was carried out to determine the improvements that occurred in the control class and experimental class. The data compared is as follows:

Based on the processed data, a comparative analysis of the overall average of the control class and experimental class learning interest variables can be carried out before being given treatment and after being given treatment. The diagram is presented as follows:



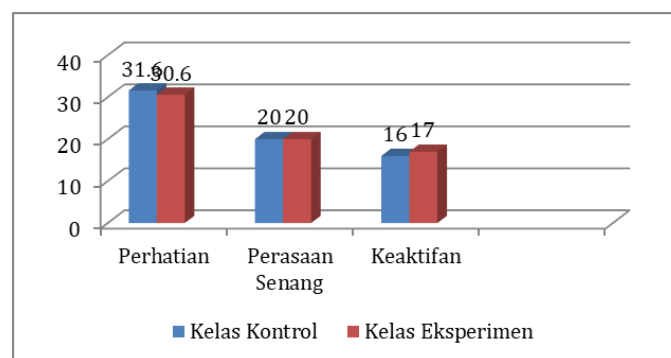
Picture1. Comparison of initial and final average interest in learning

(Source: Processed data, 2024)

From Figure 1, it can be seen that there are significant differences between the control class and the experimental class before and after being given treatment. The average difference after being given treatment between the control class and the experimental class was 7.62%.

2. Comparison of Initial Average Interest in Learning Per Indicator

Based on Figure 1, an initial average analysis of each indicator of the learning interest variable can be carried out and obtained as follows:



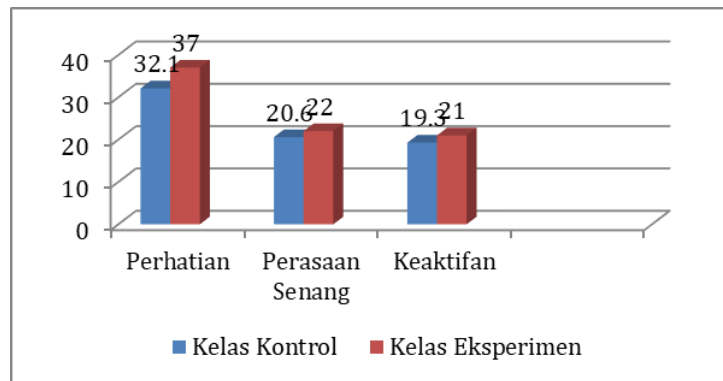
Picture2. Comparison of initial average interest in learning per indicator

(Source: Processed data, 2024)

Figure 2 shows that in the learning interest variable in the control class and the experimental class before treatment, the attention indicator in the control class had a higher average than the experimental class, the feeling of happiness indicator had the same average, while the class activity indicator experiments have higher averages.

3. Comparison of Final Average Interest in Learning Per Indicator

The following is a comparison of the average indicators of learning interest after treatment as follows.



Picture 3. Comparison of final averages of learning interest indicators

(Source: Processed data, 2024)

From Figure 3 it can be concluded that in the learning interest variable in the control class and experimental class after treatment, the experimental class had a higher average in each indicator compared to the control class which had a lower average. The attention indicator has a higher average than other indicators, this shows that the attention indicator is more dominant in increasing students' interest in learning. Gamification media is able to focus students' attention because in practice, the material is packaged in game form so that students can participate in learning with more focus and less monotony.

4. Hypothesis Test Results

After knowing the results of the analysis prerequisite tests which show that the data is normally distributed and homogeneous, you can proceed with hypothesis testing. Hypothesis testing was carried out to determine the effect of gamification media on students' learning interest. The hypothesis tests used in this research are the Paired Sample T-Test, the Independent Sample T-Test and the N-Gain Test.

a. Paired Sample t-test

The test results in the paired sample t-test are determined based on the significance value. If the significance value is <0.05 , it indicates that there is a significant difference, then it can be concluded that there is an influence on the difference in treatment given to each variable. However, if the significance value is >0.05 , it shows that there is no significant difference, so it can be concluded that there is no influence on the differences in treatment given to each variable. The detailed results of the paired sample t-test hypothesis test calculations are in Appendix 19. Based on this attachment, it can be presented briefly as follows:

Table 1. Hypothesis Test Results Paired Sample t-test

Paired Samples Test			
	Class	Sig. (2 tailed)	
Interest t learn	Pre-Test Control – Control Post-Test	,002	
	Pre-Test Experiment - Post Test Experiment	,000	

(Source: Processed primary data, 2024)

Table 11 of the paired sample t-test results shows that the level of significance in the experimental class shows that the Sig. (2-tailed) $< \alpha$ or $0.000 < 0.05$ so it can be concluded that there is a significant difference after treatment.

b. Independent Sample t-test

Independent sample t-test is a statistical analysis with the aim of comparing two unpaired sample data. The significance level in this study is 5% with the test criteria if the significance value is $> 5\%$ then H_0 is rejected. The detailed independent sample t-test hypothesis test calculation results are in Appendix 20. Based on this attachment, it can be presented briefly as follows:

Table 2. Statistical Group Results in Independent Sample Test Hypothesis Testing

Group Statistics			
	Class	N	Mean
Results	Post-Test Experiment	36	79.81
	Post-Test Control	36	72.19

Independent Samples Test			
		t	Sig. (2-tailed)
Results	Equal variances assumed	6,940	,001
	Equal variances not assumed	6,940	,001

(Source: Processed primary data, 2024)

Table 12 of the results of the independent sample t-test shows that the t count is 6.940 with a significance level of 0.001. Based on the significance value, it can be seen that the Sig. (2-tailed) $< \alpha$ or $0.001 < 0.05$ so it can be concluded that there is a significant difference in average between the experimental class and the control class after treatment. It was proven in the posttest results that the experimental class had a higher average score than the control class.

c. N-Gain Test

The N-Gain test is used to show how effective a treatment is, so in this research it functions to determine the effect of Wordwall media based on a gamification approach to increase students' interest in learning. Based on Archambault et al., (2008), the scores from the pretest and posttest are processed to find the N-Gain score, the results of which are then interpreted into high, medium and low categories.

Table 3. Hypothesis Test Results using N-Gain for Control and Experimental Classes

N-Gain		
		N-Gain
Results	Control Class	0.26
	Experimental Class	0.38

(Source: Processed primary data, 2024)

Table. 13 results of the N-Gain test in the experimental class showed a score of 0.38 or $0.38 > 0.3$ so it can be concluded that the N-Gain test in the experimental class was classified as medium criteria, so the gamification media used was quite effective in increasing participants' interest in learning students compared with PowerPoint media in the control class.

The results of this research show that the application of gamification media can increase students' interest in learning. By using gamification learning media, students are much more active and interactive so that good communication can be established between teachers, students and their peers. Students will be more active because learning with gamification media requires students to be active and directly involved during the learning process. This will increase students' interest in learning. On the other hand, students who are not given gamification media are not directly involved in the learning process, resulting in a lack of interaction in the learning process. This will cause a lack of interest in learning among students.

Another thing that proves that the application of gamification media can have a greater effect on increasing students' interest in learning is the results of hypothesis testing. This is proven by the results of the paired sample t-test with levelssignificance of $0.000 < 0.05$. In the results of the independent sample t-test, a significance value of $0.000 < 0.05$ was obtained. The N-Gain test results obtained in the experimental class showed a score of 0.38 or $0.38 > 0.3$. It can be concluded that this research shows that the application of gamification media can increase students' interest in learning.

Gamification is the use of game mechanical elements to provide practical solutions by building engagement with certain groups (Vianna, 2014). The aim of gamification is to make teaching and learning activities more interesting, interactive and challenging with elements such as prizes, levels, competitions and challenges. Therefore, learning media that has game

elements in its application is an effective way to increase students' interest in learning. In this way, gamification learning media can increase students' interest in learning.

Gamification learning media has the advantage of helping students become more focused in learning. Students have the opportunity to be directly involved in competing, exploring and achieving, so that there will be encouragement within students to complete active learning (Jusuf, 2016). This advantage is supported by research conducted during two meetings in each class. At each meeting, students can solve problems in basic accounting learning, namely general journals.

In the first stage, the researcher determines the template that will be used to insert question material into gamification media. The choice of template is adjusted to the material that will be presented in class. In the next stage, prepare the class. The teacher shows the learning objectives that will be carried out and provides initial stimulation to students before implementing learning using gamification media. Then the teacher asks students to focus their attention on the directions explained by the teacher regarding the use of gamification media. At this stage the teacher provides instructions and rules for playing the game, introduces the features that will be used in working on the questions, and ensures that students can understand the use of gamification media.

The next stage is student participation. At this stage, students participate in solving questions in the game. Students are divided into groups to complete challenges in the game. Each group discusses how to complete the challenge and competes to achieve the highest score in completing the game. At this stage students are required to be active in learning so that students' interest in learning will be seen when they actively participate in working on questions in gamification media. Meanwhile, the teacher monitors and directs students during the learning process. The gamification media used is Wordwall.

Wordwall can be used as a learning medium to foster student enthusiasm, because with the help of the wordwall game the learning process can be carried out by playing so that it is not monotonous and students can be directly involved in the learning process. Wordwall contains challenges that must be completed by students, where there are not only questions that must be solved, but there are other components that can encourage students to complete the game. Apart from that, the Wordwall game contains elements that are in line with the use of gamification, namely giving points for each challenge in the game.

In contrast to experimental class students, control class students carry out the learning process without using game elements. In the control class the teacher acts as a learning presenter using PowerPoint media while the students simply pay attention to the teacher's

explanation. Students will tend to be more passive and have less interaction with peers and teachers. When the teacher gives an explanation, some students tend not to focus on the learning process, such as chatting with their classmates, playing on their cellphones, and being less active when asked questions.

The data description shows an increase in interest in learning in the experimental class after being given treatment. The average obtained before the treatment was 68.06, while after the treatment it increased to 79.81. Apart from that, for each indicator of interest in learning, there is one indicator that has the highest average, namely the attention indicator. Students can focus their attention because in practice the use of gamification media is considered not monotonous so that students can focus more on the learning process. It can be seen that before the treatment, students tend to chat alone with their friends, sleep in class, and not focus on learning. After the treatment, students can pay close attention to the material being taught with the help of gamification media.

The gamification media that has been applied to the experimental class is in accordance with the approach to behaviorist learning theory. According to Desmita (2015), behaviorist learning theory is a learning theory that understands human behavior using an objective, mechanistic and materialistic approach, so that changes in a person's behavior can be done with conditioning efforts. Behaviorist learning is often called stimulus response learning (Nahar, 2016).

Behaviorism theory assumes that student learning behavior is the result of the stimulus provided by the teacher. In research that has been carried out, the stimulus provided was in the form of Wordwall gamification learning media. Providing this stimulus can attract students' interest in learning in the classroom. Interest in learning can be seen through the involvement of students in the learning process so that it can be seen in the experimental class that students can actively participate in the learning process, show feelings of joy and attention can be focused on the teaching media applied, namely the Wordwall gamification media.

The results of this study are in line with previous research (Launin et al., 2022); Sari & Yarza (2021) concluded that the application of the Wordwall game media can influence students' interest in learning. The application of gamification learning media has been proven to be able to increase students' interest in learning by adding several supporting components such as game elements to increase interaction and interest in students. In this research, gamification learning media increased students' interest in learning. This is based on the average posttest score obtained by the experimental class being higher than the control class,

namely, $79.81 > 72.19$. Wordwall can create an interactive teaching and learning process with varied, applicable and interactive games to convey learning material (Winanti et al., 2017).

Efforts that can be made to overcome students' lack of interest in learning are by providing innovation in the use of learning media in the classroom. A teacher certainly has to be creative and innovate in teaching through the use of learning media, so it is hoped that the use of media that is different from usual can support interest in learning in the learning process. Teachers can apply interactive learning media such as gamification media (Launin et al., 2022). This is done to achieve enjoyable learning, as well as being able to increase students' interest in learning. Apart from that, students can play an active role in the learning process, in this way students discover new learning conditions, thus avoiding boredom in learning and the learning atmosphere becomes more enjoyable. Students are expected to be braver in expressing opinions, dare to ask questions, and be able to respond to other people's opinions.

CONCLUSIONS AND RECOMMENDATIONS

Based on the results of research data analysis, researchers draw conclusions that are adjusted to the problem formulation in the research. The results of this research can be concluded that the application of gamification media in basic accounting learning has an influence on students' interest in learning. This is shown from the analysis data which states that the results of the paired sample t-test show The significance level for the experimental class is $0.000 < 0.05$. So there is a significant difference in the pretest and posttest results of the experimental class. The results of the independent sample t-test show that the t count is 6.940 with a significance level of $0.001 \text{ Sig. (2-tailed)} < \alpha$ or $0.001 < 0.05$. There is a difference in the average posttest results for the experimental class and the control class. After treatment, the average of the experimental class was higher, namely 79.81, than the control class with a value of 72.19. On results The N-Gain test in the experimental class shows a score of 0.38 or $0.38 > 0.3$ so it can be concluded that the N-Gain test in the experimental class is classified as medium criteria, so the gamification media used is quite effective in increasing students' interest in learning compared to Powerpoint media in control class.

Teachers are expected to be able to apply interactive learning media in the classroom, such as gamification media which can increase students' interest in learning. Apart from that, learning media is also aligned with the material and characteristics of students. This is done to achieve enjoyable learning, as well as being able to increase students' interest in learning.

Students are expected to be able to play an active role in learning through the application of gamification media, in this way students discover new learning conditions so as

to avoid boredom in learning and make the learning atmosphere more enjoyable. Students are expected to be braver in expressing opinions, dare to ask questions, and be able to respond to other people's opinions.

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