Differences in Student Learning Outcomes Using the Game Based Learning Model Assisted with Wordwall Media and The Cooperative Learning Model

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Abstract - Learning success is influenced by several components such as models, methods, media, and learning outcomes. Some learning models that can be applied in the classroom are game-based learning and cooperative learning. To support the implementation of the learning model, teachers need media such as the Wordwall game quiz. This research aims to determine the differences in student learning outcomes between word wall-assisted game-based learning and cooperative learning models in class X of SMAN Jenggawah, Jember Regency, academic year 2023/2024. The population taken in this research was class X at SMAN Jenggawah Jember. The research method used in this research is quasi-experimental with a nonequivalent control group design. The samples taken in this research were X-1 and X-3, each class consisting of 36 students. The sampling technique uses purposive sampling. The technique used in collecting learning outcomes data is a test which is divided into 2, namely pre-test and post-test. The results of the data analysis show that the results of the normality test in the control class obtained a significance value of 0.335 in the pretest and 0.088 in the posttest. The results of the normality test in the experimental class obtained a significance value of 0.096 in the pretest and 0.787 in the posttest. It can be concluded that all data is normally distributed. Based on the results of the normality test, a hypothesis test is then carried out, namely a difference test using the Independent Sample T-Test. Based on the data from the hypothesis test results, it can be seen that the significance value (2-tailed) is <0.05, namely 0.000. It can be concluded that there were differences in economic learning outcomes between students who were given learning using the game-based learning model assisted by Wordwall media and students who were given learning using the cooperative learning model in class X students at SMAN Jenggawah, Jember Regency.

Keywords – Cooperative Learning; Game Based Learning; Hasil Belajar; Wordwall

INTRODUCTION

Education has a very important role in creating a quality young generation. Things related to learning such as models, media, and learning outcomes greatly affect the success of learning [1]. Teachers need a learning model as a strategy to present materials and teaching materials to students, media is needed to make it easier for teachers to present materials to students, and learning outcomes are a measure of students' interest and potential in the subject [2]. In today's world of education, technological developments have changed the pattern of learning approaches from teachers as the center of learning to students as the center of learning [3].

Learning with teachers as the center is often the reason why students are less enthusiastic, sleepy, and even tend to be bored so students experience a decrease in concentration during the learning process which causes student learning outcomes to be less than optimal [4]. According to Sudjana (2017) [5], the learning outcomes achieved by students are influenced by

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two factors, namely factors from within the student and factors that come from outside the student or the environment. From within students, such as lack of motivation to learn, concentration, intelligence, body condition, as well as the interest and attention needed when studying [6]. Riwahyudin (2015) [7] revealed that external factors are in the form of the influence of various environments, both from within the family, school, and community environment. Learning outcomes can be said to be successful if there is a change in the way students think that is conceptualized with what the teacher teaches [8]. Based on Wirda et al. (2020) [9], learning outcomes are a method that teachers can use as a measuring tool in learning that can be used as a reference to find out the extent of students' ability to understand the material. Learning outcomes as achievements of students are reviewed from cognitive, affective, and psychomotor abilities [10]. Joshi & Lau (2021) [11] revealed that the cognitive aspect can be seen through tests that can be in the form of multiple choices, descriptions, essays, or non-tests related to the subject matter that is the standard of student competence.

In the teaching and learning process, the role of teachers is not only as a source of learning but also required to build a fun and student-centered learning atmosphere [12]. So the learning model is very important in the learning process [13]. The learning model is a factor that affects the learning process because there is a crucial part to consider, namely the syntax or stages that need to be passed related to the implementation of a learning model [14]. The learning model refers to the learning approach that will be implemented, including teaching objectives, stages in learning activities, learning environment, and classroom management [15]. To support the implementation of the learning model, teachers need media. The media is expected to be able to make it easier for students to understand the learning material. According to Kustandi and Darmawan (2020) [16], learning media can be said to be a means that can be used to communicate teaching materials so that they can achieve learning goals.

Based on the results of observations, in the economics subject of specialization in class X of SMAN Jenggawah, learning activities take place by applying a variety of learning models, one of which is the cooperative learning model. According to the economics teacher, the cooperative learning model has a positive impact on students' cooperative ability, but this model results in the cognitive learning outcomes of grade X students of SMAN Jenggawah tend to be low. When the researcher observed, it happened because students lacked attention, seemed to be ignorant, and were drowsy during learning which resulted in a lack of student understanding of the learning material, so the learning outcomes were less than optimal.

An alternative means for teachers to find a solution regarding conditions that are not by expectations is to implement a learning model that is expected to build students' enthusiasm for learning to understand the learning material so that they get optimal learning outcomes [17]. One of the learning models that can be implemented as a solution to the problem of lack of student enthusiasm for learning and suboptimal learning outcomes is game-based learning [18]. Game-based learning is one way to provide a learning experience by triggering student participation and collaboration [20].

The learning process takes place with games that have been designed according to the material to be taught. Learning with *a game-*based learning model is a form of learning where students can learn with a play approach [21]. Shi and Shih (2015) [22] explain that the application of this model begins with the goal of the game, and it includes the teaching goals and experiences that students want to provide. In the design of the educational game to be given, identifying pedagogical requirements is a top priority [23]. Samudera (2020) [24] explained that learning begins with the teacher providing games that are on the learning topic. Then the teacher explains the introductory material that will be given during the game, after giving an introduction to learning, the teacher makes game rules which are then continued with students playing games with predetermined media. This model is expected to

be able to create fun learning and can optimize student learning outcomes [25]. The results of the research by Puspitasari et al. (2023) [26] show that game-based learning increases students' interest in learning. Monalisa (2023) [27] in her research revealed that game-based learning can increase student motivation and learning achievement. In line with these two studies, Ully and Dewi (2022) [28] in their research also found that the game-based learning model can improve student learning outcomes.

To support the implementation of the learning model, teachers need media. The media is expected to be able to facilitate the delivery of learning materials [29]. Based on Astuti and Fatimah (2022) [30], in building an active learning atmosphere, game-based interactive media is needed that is appropriate to the age stage of students such as crossword puzzles. A game-based learning medium that is fun and can be applied optimally, according to Fanny (2020) [31], is a quiz game word. Wordwall is a category of educational games that are designed with interesting color and image collaborations so that they can be used as an option to build an active learning atmosphere. According to Nisa and Susanto (2022) [32], learning with Wordwall media becomes more interesting and fun for students so that it can build a spirit of learning, improve memory, and optimize student learning outcomes. The results of the study by Launin et al. (2022) [33] show that wordwall media can increase students' interest in learning.

OBJECTIVES OF THE STUDY

The first novelty of this research is the use of word wall media in game-based learning as an effort to build learning enthusiasm and optimize student learning outcomes. The second novelty is to use a jigsaw-type cooperative learning model as a comparison. The purpose of

The majority of BSICT research was concentrated on records systems or information system development. The review of literature and studies was presented by topic or concept in an organized manner. Data were presented and cross-checked with related literature and studies.

the comparison in this study is to find out the difference in learning outcomes between students who are given learning using the game-based learning model assisted by Wordwall media and students who are given learning using the cooperative learning model.

MATERIALS AND METHOD

The research design applied is a quasi-experimental research with a nonequivalent control group design. According to Masyhud (2016) [34], experimental research is a study conducted to find out whether or not there is an influence of a certain treatment on changes in conditions or groups. The population chosen as a sample in this study is class X students of Jenggawah High School which includes 8 classes and totals 288 students. The sampling technique in this study is Purposive Sampling. The sample was selected by the researcher by paying attention to the difference in the average score of the daily test which was more or less the same. This study uses two classes, namely the control class and the experimental class. In the learning control class, it was given using the cooperative learning model, and in the experimental class, the learning was given with a game-based learning model assisted by word wall media.

The data collected for this study was taken from observations, tests, and interviews. The instruments used are in the form of observation sheets, pretest and posttest question items, and interview guidelines. The data analysis method used is a test of the normality of the data results of the pretest, posttest of the control class, and the experimental class as a prerequisite, as well as the independent sample t-test which is intended to test the difference in learning outcomes between the two classes.

RESULTS AND DISCUSSION

The results of this study are divided into three, namely (1) the economic learning process with *a* game-based learning model assisted by word wall media, (2) the economic learning process with a cooperative learning model, and (3) the difference in learning outcomes between students who are given learning using *a game-based*

learning model assisted by word wall media and those who use the cooperative learning model.

The economic learning process with a game-based learning model assisted by word wall media

Learning with models game-based learning With the help of Wordwall media, the teacher began with presenting material and conveying important points about the scale of Priority and Financial Literacy, which then the teacher formed the students into 6 groups as many. Each group is required to learn independently by discussing before the teacher gives a quiz through the media word. Then the teacher shared Link Games through groups WhatsApp which was then done by each student while still discussing with his group members.

The results of observations in the classroom that were given learning using the game-based learning model assisted by word wall media showed that the learning process was active and fun. It can be seen that students are more enthusiastic about participating in learning because of the game media so students can easily understand the material through playing games and discussing with their group friends. Therefore, students can answer post-test questions well and get optimal learning results.

The economic learning process with the cooperative learning model

Learning with the cooperative model begins with the teacher providing subject information and then forming students into 6 groups consisting of 6 students. Each group was given the task of discussing the priority scale and financial literacy. After the discussion activity is over, students are asked to present the results of their discussion in front of the class and be commented on by other groups.

Based on the observation results, it can be seen that in this class the learning process that takes place seems monotonous. Students look unenthusiastic, and less active in discussions and some students look awkward and unconfident in expressing their opinions.

Differences in learning outcomes between students who are given learning using the game-based learning model assisted by word wall media and those who use the cooperative learning model

Table 1. Average post-test results of control class and experimental class

Group Statistics

	Class	N	Mean	Std. Deviation	Std. Error Mean
Economics Learning Outcomes	Kontrol (*Cooperative Learning*)	36	73.83	4.583	.764
	Experiment (*Game-Based Learning Assisted by Wordwall Media*)	36	80.39	5.618	.936

Based on Table 1, it is known that the average post-test results of students in the experimental class are 80.39. Meanwhile, in the control class, the average posttest result was 73.83. This shows that the average score of the learning outcomes of the experimental class is higher than that of the control class. Another thing that is benchmarked is the number of students who complete the post-test questions. In the experimental class, as many as 32 students (89%) completed, while in the control class, the number of students who completed was 18 students (50%).

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Table 2. Independent sample t-test test results

Independent Samples Test								
		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Mr.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Economics Learning Outcomes	Equal variances assumed	1.660	.202	-5.425	70	.000	-6.556	1.208
	Equal variances not assumed			-5.425	67.285	.000	-6.556	1.208

Based on the results of the independent sample t-test in Table 2, the significance value (2-tailed) data was obtained of 0.000 (0.000 < 0.05) which means that there is a difference in learning outcomes between students who are given learning using the game-based learning model assisted by word wall media and students who are given learning using the cooperative learning model.

The difference in the learning process that can be seen during the application of the cooperative learning model in the control class and the game-based learning model assisted by word wall media in the experimental class in addition to the learning outcomes lies in the lack of enthusiasm of students in the control class during the learning process. Some students looked awkward when discussing and lacked confidence when expressing their opinions. This has an impact on the lack of optimal student understanding of the learning material, so the completion of post-test questions is not optimal and the post-test score of the control class is low. This statement is in line with the results of Handayani (2020) [35] research which revealed that students' lack of confidence in their abilities hinders students from actively discussing and delivering material to friends, as a result of which students lack of understanding of the material and the learning outcomes obtained tend to be less than optimal.

The observation results also showed that the change in the average learning outcome in the experimental class occurred due to the increase in students' understanding of the learning material which made students able to answer posttest questions correctly. Learning with the implementation of the game-based learning model with the help of word wall media in the experimental class obtained higher learning outcomes because students were able to answer all questions well in the final test (posttest) compared to the control class that implemented the cooperative learning model. This is in line with research conducted by Noviyanti (2018) [36] which revealed that there was an increase in the cognitive aspects of students after the implementation of game-based learning.

Based on this, it can be concluded that there is a difference in the acquisition of economic learning outcomes of priority scale materials and financial literacy between students who are given learning using *the game-based* learning model assisted by Wordwall media and students who are given learning using the cooperative learning model in grade X students of SMAN Jenggawah, Jember Regency.

CONCLUSION AND RECOMMENDATION

Based on the results of data analysis, it can be concluded that there is a difference in the

learning outcomes of economics, priority scale materials, and financial literacy between students who are given learning using the game-based learning model assisted by word wall media and students who are given learning using the cooperative learning model. This is shown by the average post-test score of the experimental class of 80.39. Meanwhile, in the control class, the average score of the posttest was 73.83. This happens because, in the experimental class where learning is given using a game-based learning model assisted by word wall media, students can work together, be responsible for the assigned tasks, be enthusiastic, and actively exchange ideas with their group friends so that students can easily understand the material being studied. Meanwhile, in the control class that was given learning using the cooperative learning model, students were awkward when discussing and tended to lack confidence when presenting the results of their discussion so the understanding of the material was less than optimal.

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