



The effectiveness of TGT learning assisted by wordwall media on student mathematics learning motivation

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ABSTRACT

The use of media in learning that is not appropriate will cause boredom for students so that learning will seem monotonous and affect students' motivation to learn mathematics. This study aims to determine the effectiveness of TGT (Teams Games Tournament) learning assisted by Wordwall media on students' math learning motivation. This research is included in the experimental research of one group posttest-only design. The subjects of this study were students of class VII-A SMP Negeri 2 Waru as many as 31 students. The results showed that the learning motivation of students in class VII-A SMP Negeri 2 Waru in the 2023/2024 school year after being given treatment was in the "high" category. This proves that the use of Wordwall media has a better impact on students' math learning motivation.

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INTRODUCTION

Motivation is a change in an individual characterized by a push from within it to achieve certain goals (Muhammad, 2017). Motivation refers to a process that influences an individual's choice of various desired activities. In the world of education, student learning motivation is an important thing to improve their learning outcomes (Ariyadi et al., 2019) (Suwartini, 2021). Therefore, student learning motivation is very important during the learning process.

Facts in the field show that 80% of students have low learning motivation. This data was obtained from the results of researcher observations conducted at SMP Negeri 2 Waru for class VII-A. Other research shows a similar thing, namely the low motivation of students to learn is characterized by several factors. These factors not only come from within students, but there are also external factors that cause low student learning motivation such as difficulty understanding lessons, lack of concentration, lack of use of learning media, and lack of activity in the learning process in class (Sabrina et al., 2017) (Santosa & Us, 2016). This will result in less effective learning.

Learning will be effective if students have high learning motivation. This is also supported by research which states that to create effective learning, teachers can choose appropriate and

interesting methods, models, and learning media (Pamungkas et al., 2023). The previous statement is also in line with research which explains that student learning motivation can be increased through the use of props, media, or learning models that are tailored to the conditions of students in the classroom (Ramadani et al., 2023). Thus, it can be concluded that some of the causes of low student learning motivation are the lack of use of media or learning models that are appropriate to their conditions in the classroom when learning takes place.

A study conducted by Ainun Mardhiah and Said Ali Akbar (2018) entitled "The Effectiveness Of Learning Media On The Chemistry Learning Outcomes Of Students Of Sma Negeri 16 Banda Aceh" found that the average learning outcomes of students who were taught using Crossword Puzzles (TTS) media were higher than the average learning outcomes of students who were taught using domino card media. The effectiveness of using domino cards and TTS media was seen from the enthusiasm and excitement of the students in finding answers while playing domino cards and TTS media.

Although research has shown the effectiveness of domino cards and Crossword Puzzles media in improving student learning outcomes, there is still room to develop other more innovative and engaging learning media to improve student motivation and understanding, coupled with the current technological advancements that allow everything to go online, including the use of online learning media such as wordwall.

In this study, the researchers also explored how learning environment factors, such as interaction between students and teachers, can affect the effectiveness of learning media in improving students' learning motivation, especially in mathematics.

In a study entitled "The Implementation of Teams Games Tournament (TGT) Cooperative Model Assisted by Word Wall Media to Improve Learning Outcomes", Gina Alamsah et al. (2023) stated that the use of the Teams Games Tournament model assisted by Word Wall media in economics, especially on the concept of international trade, is effective in improving student learning outcomes.

The active involvement of students in the learning process with the Teams Games Tournament (TGT) cooperative learning model is expected to also have an effect on students' mathematical learning motivation. Therefore, in this study, the researchers wanted to determine the effectiveness of the TGT learning model assisted by wordwall media in improving students' mathematical learning motivation.

In another study entitled "Analysis Of Students' Learning Motivation In Class IX Of SMP Negeri 24 Pontianak" conducted by Dani Ariyadi, Purwanti, and Luhur Wicaksono, it was concluded that, in general, the learning motivation of students in class IX of SMP Negeri 24 Pontianak reached 85% with the category "Very High". This means that the students already have a learning motivation that can be said to be able to arouse the enthusiasm to learn, especially for students who are lazy to learn.

However, this study lacks a deep discussion of the factors that influence student learning motivation at SMP Negeri 24 Pontianak, limitations in understanding how providing incentives or rewards can motivate students to study harder, and the potential to further explore the relationship between intrinsic and extrinsic motivation with student learning outcomes in the school environment. By conducting further research that is more in-depth and focused on these areas, it can help to fill the research gap in the literature on student learning motivation at SMP Negeri 24 Pontianak.

Therefore, in this study researchers will use the Teams Games Tournament (TGT) learning model assisted by Wordwall media to increase students' motivation to learn mathematics. The selection of the TGT learning model was chosen because in previous studies it has been explained that students' motivation to learn mathematics increased after learning with the TGT model so that students were also more active in the learning process (Asih, 2017). In line with other research

which shows that the application of the TGT learning model will affect student learning motivation seen from their learning outcomes that have increased (Pratiwi Fani Fitriani, 2021).

In addition, this study will also use Wordwall to increase students' math learning motivation. The selection of Wordwall media is motivated by several previous studies. Wordwall is an online learning application that has various assessment instruments and can be adapted to learning materials (Zulfah, 2023) (Pamungkas et al., 2023). Wordwall can create beneficial interactions for learners (Nissa & Renoningtyas, 2021). Wordwall can be used by students to play while learning so that it can increase their learning motivation (Sudarsono & Mulyani, 2021). Wordwall can be used efficiently and attract student learning motivation so that learning becomes more effective (Taufik & Fattya Ariani, 2020). Wordwall is able to create favorable interactions for students so that there are changes in attitude after learning with Wordwall such as their activeness and enthusiasm in the learning process (Utami et al., 2023).

Thus, this study will combine the TGT learning model with Wordwall to increase students' motivation to learn mathematics. The TGT learning model will be more effective when applied with the help of Wordwall (Fajriyanti, 2022). In addition, students experienced a significant increase in their learning motivation seen from their learning outcomes when the TGT learning model was applied with the help of Wordwall (Afiyah & Wahyuningsih, 2023).

In this study, Wordwall will be used during games in the TGT learning model. This aims to make students not easily bored after receiving the material explained by the teacher. Students will be in groups and each student must work on the questions on the Wordwall at the tournament table. Assessment uses a +10 point system for groups that can answer questions correctly. Based on the description above, it is necessary to study in depth about the TGT learning model and Wordwall so that it can have a positive influence to increase students' motivation to learn mathematics. Therefore, the purpose of this study is to determine the effectiveness of TGT learning assisted by Wordwall on students' math learning motivation.

RESEARCH METHODS

This research is classified as a One Group Posttest-Only Design quasi-experimental research. One Group Posttest-Only Design research is characterized by the absence of a control group and no initial measurement before the treatment is given. The subjects of this research were seventh-grade students of SMP Negeri 2 Waru with a population of 343 students and a sample of class VII-A of 31 students. The subjects were selected using the random sampling method. This research was conducted in the odd semester of the 2023-2024 academic year at SMP Negeri 2 Waru.

The variables in this study are Wordwall-Assisted TGT Learning (X) and Students' Mathematics Learning Motivation (Y). The relationship between the two variables is as follows:

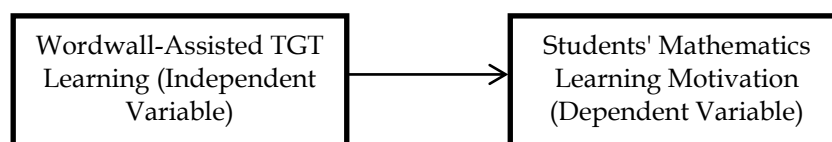


Figure 1. Relationship between X and Y Variables

Explanation:

→ : Relationship between variables.

The initial research data was obtained through observation and interview activities with the informant, who is a mathematics teacher at SMP Negeri 2 Waru. The post-test results were in

the form of a student motivation to learn questionnaire with 4 answer choices measured on a Likert scale, consisting of strongly agree, agree, disagree, and strongly disagree.

Table 1. Assessment criteria

Answer Choices	Value
Strongly agree	4
Agree	3
Disagree	2
Strongly Disagree	1

Student Learning Motivation Questionnaire contains statement sentences about students' motivation to learn mathematics.

Table 2. Student mathematics learning motivation survey outline

No	Aspect	Indicator	Number		Amount
			Positif	Negatif	
1.	A feeling of enjoyment and perseverance in learning.	• Enthusiastic about math	1, 2, 6	5	6
		• Enjoy doing math	3, 4		
2.	Willingness and interest in learning	• Willingness of students to work on math problems	7, 14	8, 12	8
		• Willingness of students to do homework	10		
		• Students' desire to get good grades	11, 13	9	
3.	Intelligence and independence in learning.	• Students' awareness to learn mathematics	16, 18	17	7
		• Student awareness to explore the material	15, 20, 21		
		• Student awareness of cheating	19		
4.	Excel in learning	• Parental support for students	25		5
		• Need for achievement	23, 24	22	
		Amount			

The analysis conducted for the percentage according to Purwanto (Huda & Kencana, 2013) is as follows:

$$N = \frac{SSM}{SM} \times 100\%$$

Explanation:

N = Percentage value to be found

S = Score obtained

SM = Maximum Score

The research results are converted into percentages to determine their category. According to Purwanto (Huda & Kencana, 2013), the percentage data is categorized with the following limitations:

Table 3. Data criteria

Percentage	Criteria
81% - 100%	very high
61% - 80%	high
41% - 60%	Medium

Percentage	Criteria
21% - 40%	Low
0% - 20%	Very Low

RESULTS AND DISCUSSION

Overview of the Application of Teams Games Tournament (TGT) Learning Model assisted by Wordwall Media

The Teams Games Tournament (TGT) learning model is applied into several stages. The implementation of the Teams Games Tournament (TGT) learning model begins with starting the class and explaining the steps of the learning model to be carried out. The initial stage is that the teacher divides students into 4 groups with each group totaling 6-7 members randomly, then the teacher explains the rules in the game and the learning tournament that will be carried out, the teacher explains the initial understanding of the material to be tournamented and provides opportunities for students to discuss with their group friends. In the second stage of the Team Games Tournament (TGT) learning model, students will play scrambling to answer Wordwall-assisted questions on the tournament table in turn according to member numbers. Learners who cannot answer questions directly are given the opportunity to return to their group to discuss with their group members. And for group representatives who are able to answer quickly and precisely will get points from the teacher. The last stage is for the group that gets the highest points will be declared the winner in this tournament.



Figure 2. Use of wordwall media

Researchers chose the TGT learning model with the help of Wordwall media because this combination can bring out the activeness of students in the learning process. Each learner is required to better master the material that has been explained by the teacher. So that students will try to learn before TGT activities. This is in line with research conducted by (Amni et al., 2021). Research (Permana & Kasrman, 2022) corroborates this research that TGT learning assisted by Wordwall media makes students feel happy during learning. In addition, they become more independent when answering the problems given during group work.

Overview of Learning Motivation of Class VII A Students

After giving the Team Games Tournament (TGT) learning model treatment, the statistical results of the posttest of students in class VII A SMP Negeri 2 Waru are presented in the following table:

Table 4. An overview of the learning motivation of students in class VII A

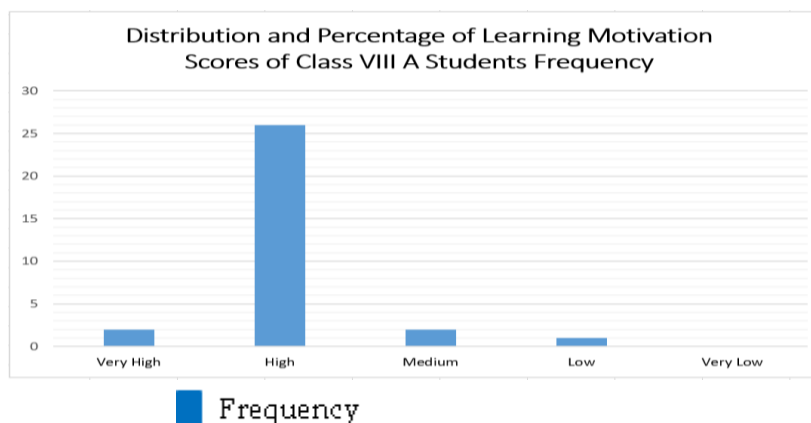
Descriptive Statistics	Statistical Value
Total Value	2204
Lowest Score	40
Highest Score	82
Average (Mean)	70,77
Rentang (Range)	42
Standard Deviation	8,2045
Median	73
Mode	73

The data in table 4. above, it can be seen that the average (mean) learning motivation of students in class VII A SMP Negeri 2 Waru after applying the Teams Games Tournament (TGT) learning model is 70.77. The highest score obtained by students is 82 and the lowest score obtained by students is 40, with the difference (range) between the highest and lowest scores obtained by students is 42. The median value of student learning motivation data in class VII which is sequential from the lowest score to the highest score is 73, while the data that often appears (mode) is 73 which means that the majority of students score 73. The standard deviation of student learning motivation in class VII is 8.2045 which means that student learning motivation varies because it is actually away from 0, so the data is heterogeneous. This shows that the standard deviation is small from the mean, which is a reflection of the average deviation of the data from the mean.

The frequency distribution of the learning motivation test results of class VII A students of SMP Negeri 2 can be seen from the following table.

Table 5. Distributions and percentage of learning motivation test scores of VII A class students

Percentage	Criteria	Frequency	Percentage
81% - 100%	Very High	2	6,451613
61% - 80%	High	26	83,87097
41% - 60%	Medium	2	6,451613
21% - 40%	Low	1	3,225806
0% - 20%	Very Low	0	0

**Figure 3.** Frequency distribution diagram of learning motivation test results for students in class VII A

The data in Figure 3 above shows that there are no students who state that their learning motivation is in the very low category, there are 1 student who states that their learning motivation is in the low category, in the medium category there are 2 students, in the high category there are 26 students, and in the very high category there are 2 students. Based on this description, it is

found that the learning motivation of students in class VII A SMP Negeri 2 after being given treatment or treatment is at a high level or category, this can be seen based on the overall average value of 70.77 with a percentage of 83.87%.

The results of research conducted by applying the Teams Games Tournament (TGT) learning model assisted by Wordwall media found that student learning motivation was in the "High" category with an average score of 70.77. This is in accordance with the statement (Sardiman, 2010) that the learning process will run smoothly if accompanied by interest, students will feel interested in learning if they have high interest. Innovative learning with the application of cooperative learning methods can build an atmosphere that is active, fun and not monotonous when learning takes place so that it can smooth the learning process. From the results of observations made by researchers in class VII A, it was concluded that researchers chose to apply the Teams Games Tournament (TGT) model in the learning process.

In accordance with the statement (Mardhiah & Akbar, 2018) that to obtain optimal learning outcomes with high interest in learning, it can be done by choosing the right media and in accordance with the conditions and learning environment of students. This is in line with the results of research (Hidayaty et al., 2022) through the calculation of Effect size, interest in learning has an influence of 58.9% with a score of 1.1 which is included in the high category.

The achievement of the application of Teams Games Tournament (TGT) with the help of Wordwall media on student learning motivation, apart from being concluded from the data from the calculation of questionnaires and observations made after the experiment, the reason for this research is that Wordwall media with a variety of displays are able to provide opportunities for students to solve problems while playing interesting and not boring with the application of the Teams Games Tournament (TGT) model.

CONCLUSION

During learning using the TGT model, learners become more independent when answering problems through group work activities. Learners also show pleasure during learning. TGT learning combined with Wordwall media can attract learners' interest in solving problems while playing. Wordwall provides a varied appearance, so that students are not easily bored with the application of the Teams Games Tournament (TGT) model. In addition, the results of the posttest in the form of a questionnaire of students' learning motivation that has been described above show that the learning motivation of students in class VII A is categorized as "high" with an average of 70.77. In accordance with the Learner Motivation Qualification table, the questionnaire is in the interval 68-74. Based on the results and discussion previously described, it can be concluded from this study that the learning motivation of students in class VII A SMP Negeri 2 Waru in the 2023/2024 academic year after being given treatment is in the "high" category.

However, this study has several limitations, including the purpose of this study is only to determine the effectiveness of TGT learning with the help of Worldwall Media. The researcher also only focused on the material of linear equation of one variable. In addition, researchers are only limited to using one game template in Worldwall, namely Game Show Quiz. Based on these limitations, future research is expected to develop this research such as trying to compare the TGT learning model assisted by Worldwall Media with other learning models. Future researchers can also try on other mathematics concepts or materials so that it is not only limited to linear equation of one variable material. In addition, future researchers can also use more varied Wordwall game templates with the aim that students are more interested in learning.

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