

THE EFFECT OF LEARNING INTEREST ON MATHEMATICAL PROBLEM-SOLVING SKILLS BY IMPLEMENTING THE BAAMBOOZLE-ASSISTED TEAMS GAMES TOURNAMENT MODEL

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Abstract

This study aims to analyze whether learning interests affect students' mathematical problem-solving skills by implementing the Baamboozle-assisted TGT model. This study uses a quantitative approach with the pre-experimental designs method. The population in this study consisted of all grade VIII students of SMP Negeri 9 Tegal, as many as 214 students. The sampling process uses the purposive sampling method, this technique was chosen because it is based on the characteristics of students who are considered most relevant to the purpose of this research. Data was collected through questionnaires and tests, a learning interest questionnaire consisting of 14 statements, and a mathematical problem-solving ability test consisting of 5 essay questions, which were tested for validity, reliability, difficulty, and differentiation, with a significance level of 5%. The data analysis technique used simple linear regression analysis with a t-test to determine the influence of learning interest on students' mathematical problem-solving ability by implementing the Baamboozle-assisted TGT model. The results showed that learning interest had a significant influence on students' mathematical problem-solving ability by implementing the Baamboozle-assisted TGT model.

Keywords: learning interest, mathematical problem-solving skills, teams games tournament, baamboozle

1 INTRODUCTION

Education is a fundamental part of human existence which functions as the main means of sustaining life as well as a forum to continue to improve one's capacity (Mustikasari et al., 2017). In this context, Mathematics is the foundation of cognitive development designed to train logical, systematic, and analytical reasoning. Acting as a tool for solving problems across sciences, mathematics competency equips students with mental readiness to face and solve various complex problems in daily life in a structured manner. (Nurhidayah et al., 2024).

In facing the challenges of the current era of globalization and industrial transformation, mathematics plays a vital role in sharpening problem-solving skills as one of the fundamental competencies. Problem-solving ability serves as one of the main indicators in fostering students' mathematical reasoning power (Widiastuti and Nindiasari, 2022). Until now, the proficiency of students in Indonesia in solving mathematics problems still seems to be a big challenge. Low competence in solving mathematical problems was also found in grade VIII students at SMP Negeri 9 Tegal.

Through the results of an interview with one of the mathematics teachers, who mentioned that the low ability to solve mathematical problems was suspected to be due to the lack of interest in learning students. This phenomenon can be seen from the attitude of students who tend to pay less attention when the material is explained. In addition, the majority of students show a desperate attitude when studying, and few of the students have an internal drive to believe in their own communication skills in solving problems. In fact, high interest in learning can increase student motivation, engagement, and learning outcomes (Anjani et al., 2025). Research results by Maulina et al. (2022), shows a positive and significant relationship between learning interest and students' ability to solve mathematical problems.

In addition, students' weak ability to solve mathematical problems is suspected to be because the learning model used does not attract students' attention, so that students feel bored when learning activities take place. So, the TGT model needs to be tried as a potential solution. The TGT model can be done through the use of educational technology such as Baamboozle, which is a game-based media to encourage student participation through interactive quizzes. The relationship between the TGT and Baamboozle models is projected to be able to build a more dynamic classroom atmosphere, as well as foster students' enthusiasm in solving various mathematical problems.

Therefore, the researcher is interested in dissecting the influence of learning interest on students' ability to solve mathematical problems by implementing the Baamboozle-assisted TGT model in grade VIII students of SMP Negeri 9 Tegal for the 2025/2026 school year with straight-line equation material.

2 METHODOLOGY

This research was conducted at SMP Negeri 9 Tegal. The approach in this study uses a quantitative approach with the pre-experimental designs, the goal is to see how a treatment affects the variables being studied, even though in the process it does not use the control group as a comparison (Sugiyono, 2015). The implementation of this research uses a design One-Shot Case Study. Details about the research design used in this study are presented through the following figure:

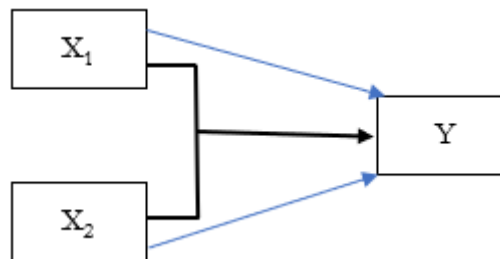


Figure 1. Research Design.

The population in this study consists of all grade VIII students of SMP Negeri 9 Tegal, with a total of 214 students. The sample in the study consisted of 30 students from class VIII C, the technique used was purposive sampling. This technique was chosen because it is based on the characteristics of students who are considered most relevant to the purpose of this research.

There are three types of instruments in this study, namely a learning interest questionnaire consisting of 14 statements, and a mathematical problem-solving ability test consisting of 5 questions, which has been tested in class VIII D SMP Negeri 9 Tegal.

The data analysis techniques in this study consist of descriptive statistical analysis and inferential statistical analysis. Descriptive statistical analysis is used to describe the data through mean values, medians, modes, maximum values, minimum values, standard deviations, and variances. Inferential analysis in this study is used to answer the formulation of the problem through the presentation of data. The hypothesis is analyzed using simple linear regression, with the following steps: (1) determining the regression equation; (2) classical assumption test, which includes residue normality, linearity, and heteroscedasticity test; (3) t-test; and (4) the coefficient of determination.

3 RESULTS

This research was conducted at SMP Negeri 9 Tegal on grade VIII students in the even semester of the 2025/2026 school year. Based on the results of the analysis, data on students' learning interest (MB) and mathematical problem-solving ability (KPMM) are presented in table 1 below:

Table 1. Descriptive Statistical Results.

Data Distribution	MB	KPMM
Average	44,5	63,2
Median	42,5	63
Mode	54	62
Maximum Value	56	74
Minimum Score	33	50
Baku Junction	6,527	6,294
Variance	42,603	39,614

3.1 Hypothesis Testing

Simple linear regression analysis was carried out to determine the influence of learning interest on mathematical problem-solving ability by implementing the Baamboozle-assisted TGT model which was then tested using a t-test. From this analysis, a simple linear regression equation was obtained, namely:

$$\hat{Y} = 37,339 + 0,581X_1$$

The constant value of 37.339 in this equation shows that mathematical problem-solving ability is estimated to be 37.339 if the learning interest is zero. An increase in learning interest by one unit will result in an increase in mathematical problem-solving ability by 0.581 units, according to the regression coefficient for learning interest of 0.581.

A classical assumption test that includes residue normality, linearity, and heteroscedasticity tests is performed before testing the hypothesis using a t-test to ensure that the simple linear regression equation meets the validity requirements.

Normality tests are carried out to determine whether the residual data is distributed normally or not. The application to test normality is carried out using the Lilliefors test. The test criteria state that H_0 is accepted if $L_{count} < L_{table}$. With reference to Table 2, it is found that $L_{count} = 0.107$. Meanwhile, $L_{table} = 0.161$ at $\alpha = 5\%$ and $n = 30$. So H_0 is accepted because $L_{calculated} < L_{table}$, which shows that the regression model is normally distributed.

Table 2. Normality Test Results

L_{count}	L_{table}	Conclusion	Remarks
0,107	0,161	$L_{count} < L_{table}$	Normal

The linearity test aims to ascertain whether there is a linear pattern in the relationship between independent and dependent variables. The condition of this test is that if $F_{count} < F_{table}$ then H_0 is accepted. Table 3 shows that the variables studied have a value of $F_{calculated} < F_{table}$, which shows that the regression model is linear.

Table 3. Linearity Test Results

Variable Test	F_{count}	F_{table}	Conclusion	Remarks
X against Y	0,004	2,53	$F_{count} < F_{table}$	Linear

The heteroscedasticity test aims to determine whether the variance of error in each regression model prediction varies. In this study, the Glejser test was used. If $|t_{count}| < t_{table}$, then H_0 is accepted, which indicates that the regression model is absent from heteroscedasticity. It can be seen from Table 4 that there is no evidence of heteroscedasticity in the regression model because the variables studied have the value of $|t_{count}| < t_{table}$.

Table 4. Heteroscedasticity Test Results

Variable Test	t_{count}	t_{table}	Conclusion	Remarks
X against $ e $	-0,51	2,049	$ t_{count} < t_{table}$	Absence of heteroscedasticity

The results of the t-test calculation show that if $|t_{count}| \geq t_{table}$, then H_0 is rejected, so that learning interest has a significant effect on students' mathematical problem-solving ability.

In addition, the results of the determination coefficient test showed that $R^2 = 0.363$. This shows that 36.3% of the variation in mathematical problem-solving ability can be explained by learning interest variables, while the remaining 63.7% are influenced by factors other than the independent variables studied.

4 CONCLUSION

Based on the results of a study conducted on grade VIII students at SMP Negeri 9 Tegal, it can be concluded that learning interest has a significant influence on students' mathematical problem-solving ability by implementing the Baamboozle-assisted TGT model, with a contribution of 36.3%.

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