

## Analysis of the Relationship Between Learning Interest and Mathematics Learning Outcomes

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### Abstract:

This study aims to determine the relationship between learning interest and student learning outcomes in mathematics and describe the main factors influencing student learning interest. This type of research is quantitative research, with data collection methods carried out by giving questionnaires, conducting interviews, and giving learning outcomes tests to students. The population in this study was class XI IPA, with the research sample being all members of the population. The type of research data used is qualitative data in the form of interviews with students and quantitative data in the form of math learning test results and questionnaire results of interest in learning mathematics. The data analysis technique in this study used simple regression analysis. The results showed a significant relationship between learning interest and math learning outcomes at SMA Islam Ar Rofi'iyah. They obtained  $r_{xy}$  of 0.345 with a low level of relationship strength, and learning interest gave an influence of 11.6%, while other variables outside the study influenced the remaining 87.6%. The highest percentage result on the practical aspects of student interest in learning is the feeling aspect, and the lowest is the aspect of student involvement.

**Keywords:** *learning interest, student learning outcomes, mathematics learning*

### Abstrak:

Tujuan penelitian ini untuk mengetahui hubungan antara minat belajar dan hasil belajar matematika siswa dan mendeskripsikan faktor utama yang mempengaruhi minat belajar siswa. Jenis penelitian ini adalah penelitian kuantitatif, dengan metode pengumpulan data dilakukan dengan memberikan angket, melakukan wawancara dan memberikan tes hasil belajar kepada siswa. Populasi penelitian ini adalah kelas XI IPA dengan sampel penelitian ialah semua anggota populasi. Jenis data penelitian yang digunakan adalah data kualitatif berupa hasil wawancara kepada siswa, dan data kuantitatif berupa hasil tes pembelajaran matematika dan hasil angket minat belajar matematika. Teknik analisis data pada penelitian ini menggunakan analisis regresi sederhana. Hasil penelitian menunjukkan bahwa ada hubungan signifikan antara minat belajar dengan hasil belajar matematika di SMA Islam Ar Rofi'iyah dan diperoleh  $r_{xy}$  sebesar 0,345 dengan tingkat kekuatan hubungan rendah dan minat belajar memberikan pengaruh sebesar 11.6% sedangkan sisanya 87,6% dipengaruhi oleh variabel lain di luar penelitian. Hasil persentase tertinggi pada aspek yang diamati pada minat belajar siswa adalah aspek perasaan dan hasil persentase terendah adalah aspek keterlibatan siswa.

**Kata Kunci:** *minat belajar, hasil belajar, pembelajaran matematika*

## INTRODUCTION

This section of the research contains the background, research problems, summaries of previous relevant studies, the gap of knowledge, novelty, and research objectives. This will reveal the state of the art, its originality, APA style with a single space. Example: (Moleong, 2016), (Sheikhhalizadeh & Piralaiy, 2017) (Levina et al., 2016)

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## **RESEARCH METHOD**

The researcher employed a descriptive research design using a quantitative approach. This study was conducted at SMA Islam Ar Rofi'iyah, located in Semampir Village, Kraksaan Sub-district, Probolinggo Regency, East Java, Indonesia. The research was carried out in the 11th grade science class (XI IPA), which consisted of 32 students. The purpose of this study was to analyze the relationship between students' interest in learning and their mathematics learning outcomes. To collect the data, the researcher used two main instruments: a mathematics achievement test to measure students' learning outcomes, and a questionnaire to assess their level of interest in learning mathematics. Both instruments were validated prior to use to ensure their reliability and accuracy in measuring the intended variables.

## **RESULTS AND DISCUSSION**

This study aims to determine the relationship between learning interest and mathematics learning outcomes at SMA Islam Ar Rofi'iyah, located in Semampir Village, Kraksaan District, Probolinggo Regency. The subjects of the study are 32 students in the 2nd semester of class XI for the 2024/2025 academic year. Data collection in this study was conducted using a learning interest questionnaire, interviews, and a mathematics learning outcomes test. The questionnaire was used to measure the level of students' interest in learning mathematics, interviews were conducted to identify the main factors influencing students' lack of interest in learning, while the learning outcomes test was given to measure students' achievements in mathematics.

Before the learning outcomes test and learning interest questionnaire were given to the students, the instruments were first validated by one mathematics lecturer from UNUJA and two mathematics teachers at SMA Islam Ar Rofi'iyah. After the validity of the instruments was confirmed, they were pilot-tested at the school to ensure their suitability. Once the instruments met the required criteria, the study was conducted at SMA Islam Ar Rofi'iyah.

Instrument Analysis and Suitability Process Logical Validity Validation

was conducted by three mathematics experts, and the instrument was declared valid and suitable for use in the study. Pilot Test of Learning Outcomes Test The pilot test was conducted with five essay questions in class XI IPA. Validity, reliability, difficulty level, and discriminating power tests were conducted based on the pilot test data, with the results indicating the instrument's suitability for the study.

**Data Analysis of the Study Results** The simple linear regression calculation produced the following regression equation:  $Y = 48.493 + 0.313X$  This equation shows that if students' interest in learning is zero, their learning outcome will be 48.493. Every one-unit increase in students' interest in learning will raise their mathematics learning outcomes by 0.313 units.

**Hypothesis Testing Test for Significant Relationship Between Variables X and Y** Based on the F-test, the calculated F value (4.36) is greater than the F table value (4.13), thus  $H_0$  is rejected and  $H_1$  is accepted, indicating a significant relationship between students' learning interest and their mathematics learning outcomes. **Correlation Coefficient Test** The correlation coefficient test yielded a value of 0.345, indicating a positive but weak relationship between learning interest and mathematics learning outcomes.

**Coefficient of Determination Test** The coefficient of determination yielded a value of 11.6%, indicating that learning interest contributes 11.6% to the variance in mathematics learning outcomes, while the remaining 87.6% is influenced by other factors not included in this study. **Additional Testing Learning Interest** The data from the learning interest questionnaire showed that most students (44%) had high learning interest in mathematics, although others had moderate or low interest. The average learning interest score was 66.56, which is considered moderate.

**Learning Outcomes** The students' learning outcomes also showed a similar trend, with the majority (39%) in the moderate category and an average score of 69.36, which is also categorized as moderate. This study reveals a positive relationship between learning interest and mathematics learning outcomes. The higher the students' learning interest, the better their learning outcomes. The results of the simple linear regression test show a positive influence of learning interest on learning outcomes. Students' learning outcomes are influenced by internal factors, such as learning interest, as well as external factors, such as the learning environment and parental support.

To improve mathematics learning outcomes, it is essential for teachers to create enjoyable and engaging learning experiences and reinforce students' understanding of fundamental mathematics concepts so they can more easily grasp advanced topics. Academic success can be achieved when students have a high interest in the subject being studied. Therefore, learning interest plays a crucial role in supporting optimal learning outcomes.

## CONCLUSION

Based on the data obtained from the data analysis and hypothesis testing, the following conclusions can be drawn: There is a relationship between learning interest and mathematics learning outcomes for class XI IPA students at SMA Islam Ar Rofi'iyah, with a correlation coefficient of  $r_{xy} = 0.3455$ , indicating a low

but definite relationship. From the coefficient of determination test, it was found that learning interest influences learning outcomes by 11.6%. Meanwhile, the remaining 87.6% is influenced by other variables not included in this study.

The main factor influencing students' low learning interest is their lack of involvement in learning efforts. This is reflected in the students' low initiative to study mathematics, such as not studying at home unless assigned homework by the teacher and lacking the initiative to study mathematics before the lesson begins. According to the interview results with students, the low initiative in learning is caused by their lack of understanding of the ongoing learning material, the insufficient variety of mathematical problems discussed, making it difficult for students when they encounter questions slightly different from the examples presented, and the lack of reinforcement from the teacher, leading to students not taking the mathematics lessons seriously.

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