Monicawati, B. E., Nurimani, N., Arifannisa, A.
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DOI 10.37640/ice.01.317
In *Proceeding of International Conference on Education-01*, pages 48-51
ISSN 2964-7479

Correlation of Interest in Learning and Reasoning Ability Influences Students

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Abstract

The purpose of this study is to measure a significant relationship between students' interest in learning and students' mathematical reasoning ability on three-dimensional geometry material in class XI of SMK Negeri 1 Tangerang Regency in the 2021/2022 Academic Year. This study is correlational. The samples in this study were 34 people taken with the Cluster Random Sampling technique. The data collection technique in this study used a questionnaire instrument in the form of a scale of interest in learning and student test results. Data analysis was tested using correlation analysis, validity tests, reliability, linear regression, and hypothesis tests. Based on data analysis, the Product Moment Correlation value of 0.616 means that the correlation level is quite strong and the level of the Coefficient of Determination of 37.95% is the student's mathematical reasoning ability determined by the student's interest in learning, the rest is determined by other factors. Ho Hypothesis Test is accepted because the t_{count} is greater than t_{table} (4,423>2,021). So this proves that there is a significant correlation between students' interest in learning and students' mathematical reasoning ability on three-dimensional geometry material in class XI OF SMK Negeri 1 Kabupaten Tangerang.

Keywords: interest in learning, reasoning ability, three-dimensional geometry.

1 INTRODUCTION

Education is a forum to obtain knowledge and useful skills so that it can be a provision of knowledge in every person's life. The knowledge and skills possessed can be useful in every activity carried out, so that a person can become a qualified person. So education in schools always develops with the times, this is one of the government's efforts to improve the quality of education in the hope of achieving a better and more useful education.

However, seeing the current conditions that there are still students who have not been able to solve mathematics problems correctly, this is evidenced based on the 2019 Pusat Penilaian Pendidikan Nasional (Puspendik, 2019) in the data it is explained that the percentage of SMK students who answer correctly on the material tested is still relatively low.

Students' success in learning is influenced by internal and external factors, where internal factors are factors that come from their own person, namely attention, intelligence, interests, talents and motivation (Ariyes, Fitria, & Puspita, 2021; Haliza & Sari, 2021). While external factors are factors that come from outside a person's person, namely environmental factors. From the factors that have been described, one of the factors that can affect student success in learning is the student's interest in learning.

According to Muhammad Fathurrohman and Sulistirini (2012) expressing interest in learning is a feeling of liking, interest and attention that arises and is shown by an active attitude, participating and paying attention to the material while studying. Interest is a feeling of liking for something that gives rise to an action or reaction (Rahmayanti, 2016). Indicators of interest in learning are, liking or pleasure, a statement of liking something

more, a sense of interest, an awareness to learn on one's desires without being told to, participating in learning activities, being willing to pay attention (Hendriana, Rohaeti, & Sumarmo, 2021).

The reasoning is an activity of thinking to determine an appropriate conclusion from things that are interrelated (Hikmah, 2021). The reasoning is a process of thinking a person by utilizing the ability of logic of thinking to produce an idea or conclusion (Sappaile, 2007). Indicators of reasoning are to make conjectures, perform mathematical manipulations, draw conclusions, compile evidence, provide reasons or evidence against the correctness of solutions, draw conclusions from statements, examine the validity of an argument, find patterns or properties of mathematical symptoms to make generalizations (Hendriana, Rohaeti, & Sumarmo, 2021).

A number of studies have proven how students' interest in learning influences students' reasoning ability. Awaliyah and Fitrianna (2018) have examined that the interest in learning in students' mathematical reasoning ability suggests that there is a significant relationship. Similarly, Apriyani (2019) has proven that numerical intelligence and interest in learning have a positive influence on mathematical reasoning ability.

From several previous studies that have been described, it proves how the relationship between students' learning interests affects students' reasoning ability. However, along with the development of the times and technology that is increasingly rapid, this affects a person's habits, as well as on students. So on this basis, this research was conducted to see how much interest students' learning is in students' reasoning abilities, especially at this time.

2 RESEARCH METHODS

This study aims to see how students' learning interests relate to students reasoning ability. The method used is to use the correlation technique to examine two variables, namely variable X (student's interest in learning) and variable Y (student reasoning ability). The two variables will be tested with a validity test using the Product Moment Correlation formula, a reliability test with the Alpha formula, then a data analysis technique is carried out, then a prerequisite test, namely by a normality test using the Liliefors method and a linearity test with a regression equation, then test the hypothesis with the Product Moment Correlation formula, a t-test, and a determination coefficient test (Sugiyono, 2013).

The subjects involved in this study were 34 class XI students of SMK Negeri 1 Tangerang Regency who were taken by the Claster Random Sampling technique. For data collection on variable X (student interest in learning) researchers used a learning interest scale using the Likert Scale in the form of a questionnaire containing questions – statements that refer to indicators of student learning interest then the questionnaire was distributed to students. Then on variable Y (student reasoning ability), the researcher uses the student's math test scores which will be tested on students by determining the test questions first before being tested. The question item should refer to the student's ability indicator.

3 RESULT AND DISCUSSION

Validity testing for variable X (student interest in learning) used the Product Moment Correlation formula from 24 points of statements tested and found that only 17 points of statements were valid and reliable. While the variable Y (mathematical reasoning ability) uses the Product Moment Correlation formula from 8 description questions tested the results of the 8 questions are declared valid and reliable. The prerequisite test for analysis is a normality test using the normality test using the normally distributed Liliefors test. The results of the normality test calculation can be seen in Table 1.

Table 1. Calculation Results of The Normality Test of Variable X and Variable Y

Variable	*n*	L_{count}	L_{table}	Data distribution
Students' interest in learning	34	0,0629	0,1519	Normal
Reasoning ability	34	0,1431	0,1519	Normal

Table 1 shows that data were obtained that students' learning interests and ability to distribute normally. Then the linearity test using the regression equation Y over X has been calculated and results are obtained that show that there is a linear relationship between students' learning interests and students' reasoning ability. This can be seen in Table 2.

Table 2. Variable X and Variable Y Linearity Test Table

Variant source	Free Degree	Sum of Squares	Average Sum of Squares
Total	34	158,796	-
Regression (*a*)	1	156.672,47	156.672,47
Regression (*a*|*b*)	1	806,17	806,17
Residue	32	1317,36	41,17
Tuna Fit	19	570,69	30,036
Error	15	746,67	57,436

Table 2 is the linearity test data of Variable X and Variable Y and then obtained F_{count} which is 0,523 and F_{table} which is 2,475. Since $F_{count}<F_{table}$ or 0,523 < 2,475, it can be concluded that the Y regression method over X Linear.

Furthermore, product-moment correlation is used to find the level of correlation and obtained the value of Product Moment Correlation, which is 0,616, which means that the correlation level is quite strong, then from the *t*-test obtained t_{count} greater than t_{table} 4,423>2,021 and the level of the Coefficient of Determination of 37,95% states that students' mathematical reasoning ability is determined by the interest in learning students of class XI SMK Negeri 1 Kabupaten Tangerang, the rest is determined by other factors.

4 CONCLUSION

The findings of this study have proven that there is a positive and significant relationship between students' interest in learning and students' reasoning ability as evidenced by the results of a series of data tests that have been described. Teachers need to create a pleasant learning atmosphere in the classroom, so it is hoped that teachers can pay more attention to factors that can affect learning activities, one of which is interest in learning. This aims to achieve goals in the process of learning activities. More research is needed to prove the relationship between students' learning interests with students' reasoning abilities by using different materials.

5 ACKNOWLEDGEMENT

Respect and gratitude to all parties who sincerely have given assistance and encouragement to the author in completing this research. Specials for both guidance and my family. Hopefully get a reward from Allah SWT.

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