MOVEON: Motivation, anxiety, and their relationship to mathematics learning outcomes

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ABSTRACT This study is motivated by the student's low learning outcomes in mathematics. This study aimed to determine whether there is a relationship between motivation and learning anxiety on student learning outcomes in mathematics. This study uses a descriptive method with a quantitative approach. The preliminary analysis test used the Kolmogrov-Smirnov test, which concluded that the data were normally distributed. The sample in this study was 30 students from class XI who were selected by a simple random sampling technique. The data collection instrument used in this study was a questionnaire to obtain data on students' learning motivation and anxiety and test questions to obtain data on student learning outcomes. The d collected data were analyzed using Pearson's correlation to determine whether there is a relationship between variable X and variable Y. The results showed a positive and significant connection between learning motivation, learning anxiety, and mathematics learning outcomes of class XI MA Al Asror Sekampung students.

1. INTRODUCTION

In the whole education process in schools, learning activities are the most basic Abramovich (2019); Alphonse & Mwantimwa (2013); Firmansyah et al (2018). This means that the success or failure of achieving educational goals depends significantly on how students experience the learning process as learners Rodgers (2021); Song & Bonk (2016). Student success in the learning process can be influenced by factors from within the individual as well as from outside the individual Filgona et al (2020); Rodgers (2021).

Overall, the learning process measures the success or failure of the achievement of educational goals experienced by students at school. According to Subandi et al (2018), learning is a process carried out by a person to obtain new changes in behaviour so that he can the environment around him Fauza et al (2013). The learning process itself can occur both intentionally and unintentionally, and to find out how far the changes have occurred, an assessment is needed to determine the extent to which the learning objectives have been achieved Anggraini et al (2022); Darmayanti et al (2022). Check to find out the abilities possessed by students can be done by giving daily assignments, discussions, monthly exams, semester exams, and final semester exams, which are held once a year Vidyastuti et al (2018). Various negative and positive affective reactions affect student learning conditions and activities when facing exams and academic assignments. Students who show adverse affective reactions will experience anxiety, boredom, and stress, so they will tend to stay away from academic studies, be lazy at school, and even quit. As has been proven by Raudah, Budiarti, and Lestari, adverse affective reactions such as stress will cause a decrease in enthusiasm for learning and tend to stay away from academic assignments Chen (2019); Higgins (2019).

Anxiety is a typical symptom that occurs in every individual. Anxiety is considered one of the inhibiting factors in learning that can interfere with a person's cognitive performance function in concentrating Güner & Gökçe (2013), remembering Dionigi (2021), understanding concepts Rizta & Antari (2018), and solving problems Charmaraman (2021). Math anxiety is an unhealthy mood-like response when some students experience problems studying or on math tests Ahmed et al (2021); Sugianto & Darmayanti (2021).

Motivation to learn is the drive that individuals own in learning activities so that the direction and goals of students in learning are achieved. According to Uno, motivation to learn arises when there is a stimulus from within or outside so that someone wants to change behaviour or certain activities better than the previous situation. Symptoms that arise in learning motivation problems are when asked about the subject matter, students keep quiet and do not want to work on questions because they are afraid of failing, ignoring assignments given by the teacher, and avoiding lessons Moller (2019); Prasetyo et al (2020). Research on student learning motivation and anxiety has been conducted by Arthur et al (2022); Haftador el al (2021); Puspitarini & Hanif (2019). However, some of these researchers

only focused on student learning outcomes, whereas in this study, researchers focused on student learning outcomes.

The low learning outcomes indicate low student learning performance and the ability of teachers to manage quality learning. To find out why student learning outcomes are not as expected, the teacher needs to reflect on himself to discover the factors of student failure in the lesson Aras & Çiftçi (2021); Jabir et al (2021); Sinaga (2022).

Several factors may need to be considered to improve student learning outcomes, namely the desire and enjoyment of students in learning mathematics. The process of learning mathematics needs to pay attention to the comfort and fun feelings for students, and this can be done by showing a friendly attitude in responding to various student mistakes, using various methods and approaches, and creating a humorous atmosphere in the class. This is intended so that students do not become tense and do not create a sense of anxiety in learning. So that it can grow the desire and pleasure of learning mathematics Hanif (2019).

2. METHODS

This research uses a descriptive method with a quantitative approach. The type of quantitative research used is ex post facto research. Ex-post facto research examines causal relationships that the researcher does not manipulate or treat. Cause and effect research is carried out on programs, activities, or events that have taken place or have occurred. The existence of a causal relationship is based on theoretical studies that a variable is caused or motivated by certain variables or results in certain variables. Usman & Azzahra (2020(@)) in order to get the correct data for the sake of conclusions that are based on the actual situation, an instrument that is valid, consistent, and precise in providing research data (reliable) is needed Trisnawati et al (2019).

Class XI MA Al Asror Sekampung, totalling 30 students consisting of Class XI A and Class XI B, were the samples in this study. The types of research instruments used as data or information collection tools are questionnaires and test questions. The test method was used to find out the description of student learning outcomes. In contrast, the questionnaire described students' learning motivation and anxiety in mathematics. The researcher gave the questionnaire directly to the research sample students. The measurement scale used in this study is the Likert scale. The data analysis technique uses Pearson correlation.

3. RESULT & DISCUSSION

3.1 Results

Before the questionnaire is used to obtain research data, the author will first measure the validity of the questionnaire by testing the questionnaire on 30 respondents outside the sample. The respondents tested were students of class XII MA AL Asror. The researcher calculated the validity of the questionnaire using the SPSS program. The results of testing the validity of the instrument r-table on the variables X1 and X2 showed that all statement items could be used because the r-count was more significant than the r-table of 0.3610. Thus, it can be said that the statement incorporated in the variable is valid. For the instrument reliability test, the reliability value is stated to be reliable if it

has a Cronbach's Alpha value for each instrument, which is said to be valid if (ri) > 0.6.

The reliability test results above show that Cronbach's Alpha X2 value is 0.839, more significant than the critical value of 0.6, so the variable X2 is reliable.

After testing the validity and reliability of the questionnaire, the researcher then conducted the research by providing questionnaires and test questions to the research sample, namely students of class XI MA Al Asror Sekampung.

The Normality test is used to test whether, in the regression l model, the variable use or residual has a normal distribution. The normality test used the Kolmogorov-Smirnov test with a significant value of n < 0.05. The distribution of residual data l is not regular l if the significant value n > 0.05, then the residual data l is normally distributed.

A significance value is generated equal to 0.200; according to the existing guidelines, the residuals are normally distributed, so the conclusion shows that the data is usually distributed. After the normality test has been carried out, which states that the data is normally distributed, the next test is the linearity test. The linearity test is the nature of the linear relationship between variables, meaning that any change in one variable will be followed by a change with a parallel magnitude in the independent variable (x) and the dependent variable n (y). In the linearity test, researchers used the SPSS 25 program.

The product significance value is 0.780. It is known that the calculated F-value is 0.630, and an F-table value of 2.41 was obtained. Because the F count is more minor than the F table, it can be concluded that there is a significant linear relationship between variable X1 and variable Y.

The product significance value is 0.477. It is known that the calculated F value of 0.477 and an F table value of 2.41 was obtained. Because the F count is more minor than the F table, it can be concluded that there is a significant linear relationship between variable X1 and variable Y.

The correlation test is a test or data analysis that determines the level of closeness of the relationship between the independent variable (X) and the dependent variable (Y). In this test, the test is only to find out the relationship. The form of the relationship in question is to know the nature of the relationship between the n variables X and Y.

Results show that the X1 and Y variables are 0.001 < 0.005, meaning a significant correlation exists between the learning motivation variables and variable learning outcomes. Furthermore, between variable X 2 and variable Y is 0.000 < 0.005, meaning there is a significant correlation between learning anxiety variables and variable learning outcomes.

Based on the calculated r-value (Pearson correlation), it is known that the r-calculated value for the relationship between the n variable X1 and the Y variable is 0.595 > r-table 0.361. This states a relationship or correlation between variable learning motivation and variable learning outcomes. Furthermore, it is known that the calculated r value for the relationship between variable X 2 and variable Y is 0.605 > r-table 0.361; this indicates that there is a relationship or correlation between learning anxiety variables and variable learning outcomes. Because the calculated r-value or Pearson correlation in this analysis is positive, the relationship between the two variables is positive.

Thus, the count is greater than the r-table on variables X1 and X2 with Y, which means there is a relationship between learning motivation and anxiety with the learning outcomes of class XI students in MA Al Asror Sekampung. So, it can be concluded that learning motivation and anxiety are related to the learning outcomes of class XI students.

3.2 Discussion

Student learning outcomes are benchmarks for success in education when learning. Academic achievement is a learning outcome obtained from learning activities at school or higher education that is cognitive and usually determined through measurement and assessment. Based on the data obtained, it shows that the learning outcomes of the students of MA Al-Asror Sekampung are generally in the low group with a score of less than 65. These results are undoubtedly inseparable from motivational factors and learning anxiety in learning. Students themselves, although it is undeniable that many other factors influence student learning outcomes.

Based on the calculations or data analysis above, it can be seen that there is a significant relationship between learning motivation and mathematics learning outcomes of 0.001, which means that one of the students' mathematics learning outcomes is influenced by students' learning motivation. To overcome low learning motivation, the role of parents is huge by providing education to children from a young age as a guide in the future, namely instilling an attitude of love to learn and developing potential. Yourself through learning. In addition to the role of parents, teachers also significantly contribute to the success of students' learning. For that, the teacher must be able to optimize the application of learning principles, and there are dynamics in learning and taking advantage of students' experiences and abilities. Motivation is essential for getting students to do learning activities and determines how much students can learn from the activities they do or the information they encounter. Motivated students will show high cognitive processes in learning, absorbing, and remembering what they have learned.

Based on the calculations or data analysis above, it can also be seen that there is a significant relationship between learning anxiety and learning outcomes in mathematics of 0.000, which means that one of the results of student learning in mathematics is influenced by student learning anxiety. Anxiety is a manifestation of mixed emotions experienced by individuals as a reaction to threats, pressures, and worries that affect the physical and psychological. Anxiety can arise because it is triggered by specific situations and conditions that make you feel uncomfortable and can occur without realizing it is caused by something special. Individuals who suffer from chronic anxiety are more likely to fail in education despite having high scores on other intelligence. In the teaching and learning process, the teacher should understand when students need to be motivated during the learning process so that learning activities are more enjoyable and the flow of communication is smoother, increasing creativity and student learning activities.

4. CONCLUSION

Based on the data from the results of the analysis of Pearson correlation, it can be concluded that (1) There is a significant relationship between learning motivation and learning outcomes in mathematics; (2) there is a significant relationship between learning anxiety and learning outcomes in mathematics; (3) There is a significant relationship between learning motivation, learning anxiety and students' learning outcomes in mathematics.

The advice from this study is that students need to understand themselves and give a positive assessment of themselves to foster motivation and self-confidence without experiencing excessive anxiety. Furthermore, the teacher plays a role in helping to understand students' self-concept, overcoming student learning anxiety, and helping to achieve student learning outcomes.

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