

THE EFFECT OF LEARNING BARRIERS ON MATH STUDY ACHIEVEMENT

David Qolby Ikhsanul Akbar^{1*}, Isnani², Paridjo³

¹²³University of Pancasakti (TEGAL)

davidqolby869@gmail.com

isnani.ups@gmail.com

muhparidjo@gmail.com

Abstract

The purpose of this study was to determine the effect of learning barriers on students' mathematics learning achievement. The population in this study were VIII grade students of MTs NU 1 Lebaksiu in the 2022/2023 academic year. Sampling using total sampling technique. The research instrument in the form of a questionnaire was used to obtain data on student learning obstacles while data on student mathematics learning achievement was obtained from the final assessment of the semester (PAS) of the odd semester of the 2022/2023 academic year. The analysis technique used used a single linear regression. The results of the study state that learning barriers affect students' mathematics learning achievement by 6.2%.

Keywords: learning barriers, learning achievement

1 INTRODUCTION

Education plays an important role in efforts to improve the quality of human resources. The rapid development of the times and in this era of globalization, improving human resources is a must to be able to compete and compete freely. the rapid development of the times makes education in Indonesia continue to develop. This is characterized by curriculum changes that continue to change following the times. This is based on the development of science and technology and the needs of today. These changes and developments are expected to lead to development in a better direction.

According to Ertikanto (2016: 22), learning is all mental and psychological activities that take place in active interaction in the environment, which results in changes in the management of understanding. According to Slameto (2015: 2) Learning is an effort process carried out by a person to obtain a new change in behavior as a whole, partly the result of his own experience in interaction with the environment. According to Susongko (2017: 1) learning is a process that causes mental changes that are permanent and are the result of experience. Learning is a human process to gain abilities, skills and attitudes. So that by learning humans are able to know and understand and understand what they have not received. Based on the description above, it can be concluded that learning is a basic activity that is needed by humans to obtain changes in behavior and knowledge or experiences that are not yet known or already known for self-development.

It is important in the learning process to know the achievement of mathematics learning to determine the level of student understanding of the material that has been learned. Student learning achievement varies greatly, this is influenced by various factors both from the student's own factors (internal) and environmental factors (external). Internal factors can be in the form of student motivation and enthusiasm for learning which can encourage student enthusiasm in participating in teaching and learning activities. Meanwhile, the environmental factors themselves can be in the form of parental support and the learning environment. Parents who provide support to students and a student friendship environment that motivates each other can improve student achievement. Conversely, if the student environment is not supportive, of course this will be an obstacle to student learning in their learning efforts.

The condition of the Covid-19 pandemic that had hit made teaching and learning activities at MTs NU 1 Lebaksiu carried out 50% online and 50% face-to-face, making students not optimal in understanding the material presented by the teacher, especially in mathematics subjects. This was felt by the teacher when learning returned to normal using a 100% face-to-face system. Students who are currently in grade VIII certainly used the online learning system when they were in grade VII. This

makes students not optimal in understanding the material delivered by the teacher. So that once stepping on grade VIII with a face-to-face learning system, students are not fully prepared to receive material to the fullest, especially math subjects. Mathematics itself is a continuous subject. The material in grade VII is the basic material for the continuation material in the next grade.

The existence of the covid pandemic certainly provides obstacles in the learning process. Someone who is learning certainly hopes that the process will go well. When the process goes well the person will be more comfortable. This comfortable condition is always expected by every individual for the success of the learning activities carried out. Learning barriers are also known as learning difficulties. According to Hamalik (in Firmansyah, 2017: 118) learning difficulties are things or disturbances that make failure or obstruction of learning progress. According to Oemar (in Suyedi & Idrus, 2019: 124) obstacles are everything that humans encounter that comes and goes in the nature of hindering, hindering or hindering individuals who run it to achieve goals. Mathematics learning difficulties can be influenced by students' inability to master concepts correctly, inability to use data and inability to draw conclusions (Paridjo). Based on the description above, it can be concluded that learning obstacles are negative things that hinder, hinder or hinder learning activities carried out by a person to achieve the expected goals.

According to Slameto ((2015: 54) there are two factors that influence learning barriers, namely, internal factors and external factors. Internal factors include physical, psychological and fatigue. Physical factors include health and disability. Psychological factors include intelligence, attention, interest, talent, motive, maturity and readiness. External factors include family, school and community. Family factors include how parents educate, relationships between family members, home atmosphere, economic conditions, parental attention, and cultural background. School factors include teacher teaching methods, curriculum, school time, lesson standards, school environment, learning methods and home assignments. Community factors include student involvement in the community, playmates, and forms of community life. Based on the description above, it can be concluded that learning obstacles can occur due to factors from within and from outside the student. Internal factors include interest, talent, motivation and readiness. Meanwhile, external factors include the student's environment, both the school environment and the community environment.

Interviews with one of the math teachers, he said that students at MTs NU 1 Lebaksiu had a fairly low level of learning achievement, especially eighth grade students who initially entered using the online system so that understanding of basic material in seventh grade was not optimal. Based on observations as well as interviews conducted, information was obtained that students' learning barriers were felt as a result of the Covid 19 pandemic and that math learning achievement was still quite low, so that to describe the effect of student learning barriers on math learning achievement, this research was conducted.

2 METHODOLOGY

This research was conducted with a quantitative approach according to Sugiyono (2008: 7) is research whose data is in the form of numbers and analyzed with statistics. While the type of quantitative research conducted in this study is correlational type. The correlation method relates to data collection to determine whether or not there is an influence between two or more variables and how much influence between these variables. The sample is part or representative of the population under study (Arikunto, 2013: 174). The research subjects were selected using a total sampling technique or a sample representing a population of 78 grade 8 students. Each student is given a questionnaire of internal and external learning barriers to obtain data on student learning barriers. Data in the form of student learning achievement was obtained from the subject teacher through the value of the Final Assessment of Semester (PAS) odd semester of the 2022/2023 academic year. Furthermore, the variables in the form of questionnaires were tested, namely validity and reliability, then the data obtained were then subjected to final testing to determine the effect of learning barriers on math learning achievement with the help of the SPSS 25 application. The following list of samples in this study is presented in table 1.

Table 1. Number of research samples

No	Class	Amount
1	VIII A	23
2	VIII B	29
3	VIII C	26
Total		78

3 RESULTS

The results of the validity test of the internal learning obstacles questionnaire obtained 22 statement items declared valid which were then tested for reliability and the test results gave an r_{11} value of 0.835 whose value was more than r_{ac} , namely 0.6 so that the internal learning obstacles questionnaire was declared a reliable questionnaire. While the results of the validity test of the external learning obstacles questionnaire obtained 20 statement items declared valid which were then tested for reliability and the test results gave an r_{11} value of 0.780 whose value was more than r_{ac} , namely 0.6 so that the external learning obstacles questionnaire was declared a reliable questionnaire.

The final results of the study were obtained from the calculation of a single regression analysis and looking at the coefficient of determination to obtain the percentage of the influence of the obstacle variable on math learning achievement. Prerequisite tests of regression analysis, namely normality test, multicollinearity test and heteroscedasticity test were carried out in this study.

The data normality test is carried out to determine whether the data is normally distributed or not. This test is done by looking at the chi squared price with a significance level of 5% and $dk = k - 1$. The test results gave a χ^2_{count} value of 6.920. While the χ^2_{table} value for the significance level $\alpha = 5\%$ with $dk = 5$ is χ^2_{table} of 11.070. Data is normally distributed if the value of χ^2_{count} is less than χ^2_{table} , thus it can be concluded that the data is normally distributed because $\chi^2_{count} < \chi^2_{table}$ or (6.920 < 11.070).

The linearity test is carried out whether there is a linear relationship between the learning obstacle variable and achievement and the test results provide a deviation from linearity value of 0.37, this value is more than 0.05. Thus it can be concluded that the learning obstacle variable has a linear relationship with math learning achievement.

The multicollinearity test was conducted to determine whether the regression model found a correlation between the independent variables and obtained a Tolerance value of $0,98 > 0,1$ and a VIF value of $1,01 < 101$. so it was concluded that there was no multicollinearity problem.

Heteroscedasticity test is used to determine whether or not there is inequality of variance and residuals between one observation and another in the regression model. The regression model requires the absence of heteroscedasticity problems. The heteroscedasticity test is carried out using the Glejser test. There is no heteroscedasticity if the Sig value > 0.05 . The test results show that the Sig value of the Learning obstacles variable has a Sig value of 0.27. This figure is more than 0.05. Thus it can be concluded that no heteroscedasticity occurs. The results of a single regression analysis to determine the effect of learning barriers on students' mathematics learning achievement using the t test are obtained as follows.

Table 2. t test results

		Coefficients ^a				
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	34,371	7,483		4,593	,000
	Hambatan	,310	,138	,249	2,244	,028

a. Dependent Variable: Prestasi

Based on the figure above, the value of $t_{count} = 2.244$ and sig value = 0.028. Because the value of t_{count} is more than t_{table} , namely $2.244 > 1.995$ and sig value $t < 5\%$, namely $0.028 < 0.05$, it is concluded that partially the learning obstacle variable has a significant effect on the mathematics learning achievement of students in class VIII MTs NU 1 Lebaksiu Tegal Regency.

Table 3. coefficient of determination

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,249a	,062	,050	8,522

a. Predictors: (Constant), Hambatan

Based on the figure above which is the result of calculating the coefficient of determination assisted using the SPSS 25 application, the Adjusted R Square value is 0.062 or 6.2%. This means that the mathematics learning achievement of MTs NU 1 Lebaksiu Tegal Regency students is influenced by the learning obstacle variable by 6.2%. While the remaining 93.8% is influenced by other factors not included in this study.

4 CONCLUSIONS

Based on the results of the research conducted, student learning barriers affect student math learning achievement. The coefficient of determination (R^2) gives a value of 0.62 which shows the percentage of the influence of learning obstacles on students' mathematics learning achievement by 6.2%. This is in line with research conducted by Honggonogoro (2016) that learning obstacles affect learning achievement. There are suggestions for students so that they can know the importance of learning achievement so that they can improve their learning achievement at school and know the obstacles that can cause their achievement to decline so that they can avoid them. For teachers, it is hoped that they can supervise students to improve student achievement.

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REFERENCES

Arikunto, S. (2013). *Prosedur Penelitian suatu Pendekatan Praktik*. Jakarta: Rineka Cipta.

Ertikanto, C. (2016). *Teori Belajar dan Pembelajaran*. Yogyakarta: Media Akademi, 192.

Firmansyah, M. A. (2017). Analisis Hambatan Belajar Mahasiswa pada Mata Kuliah Statistika. *JPPM (Jurnal Penelitian dan Pembelajaran Matematika)* 10(2). <https://jurnal.untira.ac.id/index.php/JPPM/article/view/2036>.

Honggonogoro, Tanu. (2016). Hambatan Belajar pada Mata Pelajaran Teknologi Mekanik Dasar Program Keahlian Teknik Mesin. *Jurnal Pendidikan Vokasional Teknik Mesin*. 4(3). 207-212.

Paridjo. (2006). *Sebuah Solusi Mengatasi Kesulitan Belajar Matematika*. Tegal: Research Institution and Community Service of Universitas Pancasakti.

Slameto, B. (2010). *Belajar dan Faktor-Faktor yang Mempengaruhinya*. Jakarta: PT. Rineka Cipta.

Sugiyono. (2008). *Metode Penelitian Kuantitatif Kualitatif dan R&D*. Bandung: CV. Alfabeta.

Susongko, P. (2017). *Penilaian Hasil Belajar*. Tegal: Universitas Pancasakti Tegal.

Suyedi, S. S., & Idrus, Y. (2019). Hambatan-Hambatan Belajar Yang Mempengaruhi Hasil Belajar Mahasiswa Dalam Pembelajaran Mata Kuliah Dasar Desain Jurusan Ikk Fpp Unp. Gorga : Jurnal Seni Rupa, 8(1), 120. <https://doi.org/10/24114/gr.v8i1.12878>