

THE EFFECT OF LEARNING INTEREST ON LITERACY AND NUMERACY LEVELS

Sabar Riyanto¹, Rintis Rizkia Pangestika², Titi Anjarini³.
^{1,2,3}Universitas Muhammadiyah Purworejo, Indonesia

Corresponding authors email: sabarr70@gmail.com

Abstract: *This study aims to determine the effect of interest in learning on the level of literacy and numeracy of grade V students in Cluster III, Pituruh Purworejo. The type of research used in this study is quantitative research using the ex post facto method. The subjects in this study were all fifth-grade students of SD Negeri Sutogaten, SD Negeri Kaligintung 2, SD Negeri Kaligintung 1, and SD Negeri Kaligondang in the 2023/2024 academic year with a total of 65 students. Data collection techniques in this study used scales and tests. The research data are the scale score of students' interests in learning and the literacy and numeracy test results of students. Data analysis used in this research is descriptive statistical analysis and inferential statistical analysis. Descriptive statistical analysis of data includes calculating the range, number of classes, interval class length, average, and standard deviation. Inferential statistical analysis includes prerequisite testing in the form of a data normality test, linearity test, heteroscedasticity test, and autocorrelation test, then continues with hypothesis testing using a simple linear regression test. The result of this study is that there is an effect of interest in learning on literacy and numeracy of grade V students in Cluster III Pituruh Purworejo District with a significance value (2-tailed) of $0.02 < 0.05$. Furthermore, the R Square value of 0.081 states the effect of interest in learning on the literacy and numeracy of students.*

INTRODUCTION

In this rapidly growing information era, critical thinking and problem-solving skills are increasingly needed. This ability is inseparable from the mastery of numeracy and literacy, which is the ability to understand and use mathematical concepts in various situations of everyday life. Unfortunately, based on various studies and reports, the level of numeracy and literacy in Indonesia is still relatively low, especially at the primary and secondary education levels. This low level of numeracy and literacy raises various problems that need to be addressed, especially in facing the challenges of the 21st century.

The World Economic Forum established 6 essential literacy skills in 2015, the six basic literacies include reading and writing, numeracy, science, digital, financial, culture, and citizenship, therefore a basic literacy culture needs to be built in all domains of education both in family, school and community education (Ayuningtyas & Sukriyah, 2020: 237). The ability to use math to address real-world problems is known as numeracy and literacy. When analyzing information from various formats (graphs, tables, charts, etc.), literacy and numeracy use numbers and symbols connected to basic mathematics and analysis results to make predictions and take action (Han et al., 2017: 3). Numeracy and literacy is the capacity of individuals to formulate, use and interpret mathematics in various contexts including mathematical reasoning. The use of mathematical concepts, procedures, facts, and tools aims to describe, explain, and predict phenomena (OECD, 2019: 75). Based on some of the descriptions above, it can be concluded

that numeracy and literacy is a person's ability to apply his understanding and mathematical skills to solve a problem and to meet the demands of social life.

Interest in learning is the driving force within the individual to carry out learning activities to increase knowledge skills and experience (Achru, 2019: 208). Febrianti et al., (2023: 107) define students' interest in learning as a willingness or desire in students to learn something. A strong desire for something will lead students to learn as much as possible so that what they want can be realized. The interests of each learner must be considered because each learner has a different interest. Based on the description above, it can be synthesized that interest in learning is a feeling of liking and desire for learning activities without being ordered to increase knowledge, skills, experience, and changing behavior which is influenced by learning opportunities, and encouragement from outside and within students. An important characteristic is that learners must have an interest in learning.

Based on PISA 2022 survey data, around 74.54% of 15-year-old Indonesian students are below the minimum competency for language literacy. On the subject of math literacy, only 18.35% of Indonesian learners reached the minimum competency, meaning that 81.65% of Indonesian learners have math literacy below the global average of children's literacy worldwide. Around 65.84% of Indonesian learners are also below the minimum competency for science literacy (OECD, 2023:29). In addition to the PISA survey, the results of the Indonesian Learner Competency Assessment (AKSI)/Indonesia National Assessment Program (INAP) score which monitors the quality of learner education nationally show low results. Based on AKSI 2016 data, 77.13% of learners have poor math skills, and 46.83% of learners have poor reading skills. Furthermore, 73.61% of learners have poor science skills.

In a study conducted by Gustina (2020: 82), it was found that there was an effect of interest in learning on math learning outcomes in grade V elementary school students with a regression coefficient as high as 83% while the remaining 17% was influenced by external variables. Another study conducted by Siamah et al. (2023: 3133) suggests that there is a positive and significant influence between interest in learning on learning outcomes in Mathematics subjects. Research conducted by Saraswati et al., (2023: 61) found that there is a positive and significant influence between interest in learning on students' mathematical literacy skills. Furthermore, research conducted by Rosmalah, et al. (2023: 340) found that there is a significant correlation or relationship between literacy and numeracy and math learning outcomes, the correlation is positive, meaning that if there is an increase in literacy and numeracy, there will be an increase in math learning outcomes. Furthermore, research conducted by Rodhi (2021: 176) produced findings that students' mathematical literacy skills are influenced by students' interest in learning mathematics, students who have low interest in learning mathematics cause their mathematical literacy skills to be low and vice versa, students with high interest in learning mathematics have a high level of mathematical literacy as well. This is confirmed by research conducted by Septia, (2022: 67) where the results of her research say that interest in learning affects the level of literacy and numeracy of students, in her findings it is said that interest in learning affects literacy and numeracy by 23.1% and has a positive effect. From some of the theoretical studies above, it can be concluded that interest in learning affects math learning outcomes, while math learning outcomes have a positive relationship with students' literacy and numeracy skills,

therefore interest in learning can be said to affect students' literacy and numeracy skills.

This research is expected to contribute both theoretical and practical contributions to the education unit. Through this research, it is expected to find valuable information about the extent to which learners' interest in learning can affect their literacy and numeracy skills. The findings can provide insights for education, teachers and parents on the importance of building learners' interest in numeracy subjects. By knowing the positive impact of learning interest on literacy and numeracy, primary schools can design more interesting and motivating learning strategies to improve learners' understanding of mathematical concepts. Thus, this research not only makes a theoretical contribution to the understanding of literacy and numeracy but also provides practical guidance for curriculum development and teaching methods at the primary school level. By applying the findings of this research, it is hoped that the quality of mathematics education in primary schools can continue to be improved to support the development of learners' potential in literacy and numeracy.

Based on some of the descriptions above, it became a source for researchers to conduct research with the title "The Effect of Learning Interest on Literacy and Numeracy Levels".

METHOD

The type of research used in this study is quantitative research using the ex post facto method. The population used in this study were fifth-grade students of elementary schools in Cluster III Pituruh District, Purworejo Regency, totaling 164 students. The samples of this study were fifth-grade students of SD Negeri Sutogaten, SD Negeri 1 Kaligintung, SD Negeri 2 Kaligintung, and SD Negeri Kaligondang. The sample was determined by non-probability sampling with purposive sampling. The sample used in this study amounted to 65 students.

The data collection techniques used in this study were questionnaires and tests. The questionnaire instrument was used to collect data on student learning interest scores while the test instrument was used to collect data on literacy and numeracy scores.

There are 2 types of data analysis techniques used in this study, namely descriptive statistical analysis and inferential statistical analysis. Descriptive statistical analysis in this study serves to describe the results of learning interest, and the level of literacy and numeracy of students to get a clear picture. Inferential statistical analysis is used to test the hypothesis proposed. Testing in this study uses prerequisite tests of normality, linearity, heteroscedasticity, and autocorrelation. If the prerequisite test is met then proceed with hypothesis testing using simple linear regression. The whole process of inferential statistical analysis uses the help of the IBM SPSS 27 program.

RESULTS

Data obtained from the results research was processed using SPSS version 27. The first is by conducting a descriptive statistic. This test is carried out to find out the depiction general description of the data obtained from the field. The results of the statistical test are:

Tabel 1. Descriptive statistics test results

Data Penelitian	N	Minimum	Maximum	Mean	Std. Deviation
Minat belajar (X)	65	59	94	77,492	8,051
Literasi dan Numerasi (Y)	65	45	90	73,508	9,943

Based on the data in Table 1, the minimum value of learning interest data (X) is 59, the maximum value is 94, the average value is 77.492, and the standard deviation value is 8.051. As for literacy and numeracy (Y), the minimum value is 45, the maximum value is 90, the average value is 73.508, and the standard deviation value is 9.943.

The next step after conducting descriptive statistical tests is to perform inferential statistics. The stage of conducting inferential statistical tests is by passing prerequisite tests, namely: the normality test, linearity test, heteroscedasticity test, and autocorrelation test. After all prerequisite tests are met, hypothesis testing can be carried out, namely using simple linear regression tests. The following are the results of the inferential statistical test:

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		65
Normal Parameters ^{a,b}	Mean	.0000000
	Std. Deviation	.99550445
Most Extreme Differences	Absolute	.082
	Positive	.062
	Negative	-.082
Test Statistic		.082
Asymp. Sig. (2-tailed) ^a		.200 ^a
Monte Carlo Sig. (2-tailed) ^a	Sig.	.328
	95% Confidence Interval	Lower Bound .316
		Upper Bound .340

Using reference table 2, it can be observed that the value of Asymp. Sig (2-tailed) is 0.200. This value is greater than the error rate (α) of 5% or 0.05 ($0.200 > 0.05$), this indicates that the research data is normally distributed. Using this reference, the data normality prerequisite has been met and the next prerequisite test can be carried out, namely the linearity test.

Tabel 3. Linearity test result

ANOVA Table						
			Sum of Squares	df	Mean Square	F
Literasi Numerasi * Minat Belajar	Between Groups	(Combined)	2150,835	23	93,515	,798
		Linearity	561,138	1	561,138	4,789
		Deviation from Linearity	1589,697	22	72,259	,617
	Within Groups		4804,550	41	117,184	
	Total		6955,385	64		

Based on Table 3, the linearity of the learning interest variable (X) with the literacy and numeracy variable (Y) can be interpreted using the Sig. deviation from the linearity value which is 0.887. This value is much greater when compared to the significance level (α) of 0.05 ($0.887 > 0.05$). Based on this result, it can be synthesized that the learning interest variable (X) and the literacy and numeracy variable (Y) are linear. The proof of the linear relationship between the two research variables means that the research data can be carried out in the next prerequisite test, namely the heteroscedasticity test.

Tabel 4. Heteroscedasticity test results

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1	(Constant)	2,677	7,720		,347
	Minat Belajar	,064	,099	,081	,648
a. Dependent Variable: Abs_RES					

Through the SPSS output results in Table 4, it can be observed that the significance value of the learning interest variable is 0.519. This value is greater than the α level which is 0.05 ($0.519 > 0.05$). Using the test results, it can be deduced that there is no heteroscedasticity in the data so it meets the requirements before the regression test is carried out.

Tabel 5. Autocorrelation test results

Runs Test	
	Unstandardized Residual
Test Values	,89983
Cases < Test Value	32
Cases >= Test Value	33
Total Cases	65
Number of Runs	28
Z	-1,374
Asymp. Sig. (2-tailed)	,170

Based on the data in Table 28, it can be observed that the Asymp. Sig. (This value is greater than the α error rate of 0.05 ($0.170 > 0.05$)). This value is the basis for the interpretation that there are no autocorrelation symptoms in the research data and regression tests can be carried out.

The prerequisite test has been carried out and has been fulfilled, the next step is to test the hypothesis to find out whether the hypothesis made whether accepted or rejected. The prerequisite test has been carried out and has been fulfilled, the next step is to test the hypothesis to find out whether the hypothesis is accepted or rejected. The alternative hypothesis (H_a) proposed is that there is an effect of interest in learning on the level of literacy and numeracy of students. Hypothesis testing is done using a simple linear regression test. The following are the results of the hypothesis test:

Tabel 6. Hypothesis test results

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	561,138	1	561,138	5,529	,022 ^b
	Residual	6394,247	63	101,496		
	Total	6955,385	64			
a. Dependent Variable: Literasi Numerasi						
b. Predictors: (Constant), Minat Belajar						

Referring to Table 6, the regression test of the learning interest variable (X) and the literacy and numeracy variable (Y) above can be observed that the Sig. value shows 0.022. This value is smaller than the research significance level of 0.05 ($0.022 < 0.05$). This can be interpreted that the alternative hypothesis (H_a) which states that there is an effect of interest in learning on students' literacy and numeracy is accepted. The magnitude of the effect of interest in learning on students' literacy and numeracy can be observed in Table 7.

Tabel 7. Coefficient of Determination of Learning Interest on Literacy and Numeracy

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,284 ^a	,081	,066	10,075
a. Predictors: (Constant), Minat Belajar				

Interpretation of the magnitude of the influence of the learning interest variable on the literacy and numeracy variable through the magnitude of the R square value. Based on the data in Table 30, it can be observed that the R Square value is 0.081 or 8.1%. This value can be interpreted as the learning interest variable (X) affects the literacy and numeracy variable (Y) by 8.1%, while the remaining 91.9% is influenced by other variables not examined. The regression coefficient results are shown in Table 8 below.

Tabel 8. Regression coefficient result

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	44,884	12,186		3,683	<,001
	Minat Belajar	,368	,156	,284	2,351	,022
a. Dependent Variable: Literasi Numerasi						

Based on Table 8, it can be observed that the constant number of unstandardized coefficients is 44.884. This value can be interpreted that if there

is no interest in learning (X) then the value of literacy and numeracy (Y) is 44.884. The regression coefficient number shows a value of 0.368, this can be interpreted that every 1% addition of interest in learning (X) will be able to increase literacy and numeracy (Y) by 0.368. The regression coefficient value is positive (+), which means that interest in learning (X) has a positive effect on literacy and numeracy (Y).

DISCUSSION

The results of the hypothesis test state that the results of hypothesis testing in this study where the alternative hypothesis (H_a) proposed is accepted. The accepted alternative hypothesis (H_a) states that "There is an effect of interest in learning on literacy and numeracy of grade V elementary school students in Cluster III Pituruh Purworejo". The results of hypothesis testing using simple linear regression tests between the learning interest variable (X) and the literacy and numeracy variable (Y) show that there is a positive relationship between the two. This means that if students' interest in learning increases, it will be accompanied by an increase in their literacy and numeracy skills, this also applies the other way around, if interest in learning decreases, students' literacy and numeracy skills will decrease.

In testing the hypothesis of the effect of interest in learning (X) on literacy and numeracy (Y), a significance level of 0.022 ($0.022 < 0.05$) was obtained and an R square value of 0.081 was obtained. The data can be interpreted that there is an influence of the learning interest variable (X) on the literacy and numeracy variable (Y) in students which has a percentage of 8.1%, while the remaining 91.9% means that the literacy and numeracy variable is influenced by other factors outside the research variables. This is in line with the opinion of Slameto (2018: 54) who suggests that the factors that influence student learning outcomes come from internal factors consisting of physical, psychological, and fatigue. External factors consist of school, family, and community environment.

Learning interest is one of the psychological aspects that affect a person's learning outcomes. If it is related to this research, the learning outcomes in question are the literacy and numeracy skills of students. The effect of the learning interest variable (X) on the literacy and numeracy variable (Y) in students who have a percentage of only 8.1% means that other things besides learning interest affect 91.9% of students' literacy and numeracy skills, it can be internal factors such as health, intelligence, motive, fatigue or external factors such as school, family, and society by Slameto (2018: 54).

The positive regression coefficient value of 0.368 states that if there is an increase in interest in learning, it will be followed by an increase in the literacy and numeracy of students. This is the opinion of Djaali (2017: 121) who states that the stronger students accept the relationship between their interest in learning and their literacy and numeracy skills, the stronger the students' interest in learning and improving their literacy and numeracy skills. This is also by the findings of Novita et al. (2021: 174) who argue that interest in learning can increase students' attention during learning activities and will later affect learning outcomes. Learners' learning outcomes can be known through the Minimum Competency Assessment (AKM), one aspect of which is literacy and numeracy.

Research conducted by Gustina (2020: 82) resulted in the finding that there is an effect of learning interest on math learning outcomes in grade V elementary school students with a regression coefficient as high as 83% while the remaining 17% is influenced by external variables. Another study conducted

by Siamah et al. (2023: 3133) suggests that there is a positive and significant influence between interest in learning on learning outcomes in Mathematics subjects. Research conducted by Saraswati et al. (2023: 61) found that there is a positive and significant influence between interest in learning on students' mathematical literacy skills. Furthermore, research conducted by Rosmalah, et al. (2023: 340) found that there is a significant correlation or relationship between literacy and numeracy and math learning outcomes, the correlation is positive, meaning that if there is an increase in literacy and numeracy, there will be an increase in math learning outcomes. Furthermore, research conducted by Rodhi (2021: 176) produced findings that students' mathematical literacy skills are influenced by students' interest in learning mathematics, students who have a low interest in learning mathematics cause their mathematical literacy skills to be low and vice versa, students with a high interest in learning mathematics have a high level of mathematical literacy as well. This is confirmed by research conducted by Septia, (2022: 67) where the results of her research say that interest in learning affects the level of literacy and numeracy of students, in her findings it is said that interest in learning affects literacy and numeracy by 23.1% and has a positive effect. From some of the theoretical studies above, it can be concluded that interest in learning affects math learning outcomes, while math learning outcomes have a positive relationship with students' literacy and numeracy skills, therefore interest in learning can be said to affect students' literacy and numeracy skills.

In achieving good literacy and numeracy level results, several influencing factors are associated with the factors that affect learning outcomes according to Slameto (2018: 54), namely internal factors and external factors. One of the influential internal factors is interest in learning. Meanwhile, external factors include the influence of the learning environment and parental and family attention. To help students achieve good literacy and numeracy skills, one of the only ways is to foster students' interest in learning. This is necessary because having an interest in learning can help students become interested in an activity or subject content, especially mathematics which is closely related to literacy and numeracy, so that students can achieve learning outcomes, in this case, better literacy and numeracy skills.

Based on the results of the research and theoretical discussion above, it can be synthesized that there is an effect of interest in learning on the level of literacy and numeracy of students.

CONCLUSION

Based on the results of data analysis and discussion that has been done, it can be concluded that there is an effect of interest in learning on the literacy and numeracy of grade V students in Gugus III Pituruh Purworejo District with a significance value (2-tailed) of $0.02 < 0.05$. Furthermore, the R Square value of 0.081 states that the effect of interest in learning on the literacy and numeracy of students is 8.1%. The positive regression coefficient means that interest in learning has a positive effect on literacy and numeracy so that if interest in learning increases, it will be followed by an increase in literacy and numeracy.

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