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Learning Models, Motivation and Literacy as Intervening That Influence Learning Interest

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ABSTRACT

The learning model, learning motivation, and mathematical literacy have a large influence on learning interests in Budiniah Vocational High School students. This study aims to analyze the effect of the learning model variable, learning motivation on learning interest which is intervened by the mathematical literacy variable in students at Budiniah Citeureup Vocational School. This study used a sample of 80 class XI students at SMK Budiniah Citeureup Bogor using a Path Analysis model with a 5% margin of error. Data collection techniques with observation and questionnaire methods. In data processing using the SPSS application with data testing, among others, validity test, reliability test and classical assumption test. In this study it was concluded that the learning model,

Keywords: Learning Models, Learning Motivation, Literacy, Interest In Learning

INTRODUCTION

Education is one of the most important things in a person's life. Education determines and guides the future and direction of one's life. Even though not everyone thinks like that, education is still a human need. A person's talents and skills will be formed and honed through education. Education is also generally used as a benchmark for the quality of each person.

Education is activities and activities carried out based on awareness and planning so that learning activities and atmosphere run well so that students develop their potential and have spiritual strength, intelligence, noble character, personality and self-control as well as skills in society, as well as nation and state.

The purpose of education is an effort to foster and develop a person's basic abilities as optimally as possible according to their capacity. The success of students in pursuing education is influenced by several factors, one of which is interest in learning.

Interest is an attitude and behavior that comes from internal factors that encourage action. Interest can also be interpreted as liking something or activity, without anyone asking.

Interest has an important role in the world of education in schools, because with great interest a person will be motivated to focus on the activities carried out. Islamuddin (2012: 187) interest (interest) means great excitement to achieve the desired desire or ideals.

An interest can be seen through a statement that the student shows interest in certain things or the participation and activeness of students in that matter. If a student is interested in something, then the student will pay more attention than other things. Based on this, interest in learning is the main factor that must be continuously encouraged by the teacher with various methods.

Interest in learning is a student activity that is carried out consistently in following the learning process. Without encouragement from within students, teaching and learning activities will not be effective. Slameto (2010: 180) interest is a feeling to like and do something without any sense of coercion. Someone who has an interest will always participate in the activities that are of interest to them with a feeling of pleasure and will be remembered. Interest is very big influence on learning. Learning activities without the support of interest tend not to be followed seriously or wholeheartedly.

Lessons that are of interest to students will have a strong appeal and students will pay close attention to them. According to Shah (2006:151) interest is the desire and great interest in a particular object. Learning at school will run well if students have an interest in the learning material so that the goals of the learning process will be achieved.

Mathematics is a lesson that is useful for students in solving everyday problems, because it is a tool for thinking logically and creatively. So students are expected to have a great interest in learning mathematics, because students who are less interested will tend to be passive and lazy in taking lessons

In fact, the interest of students in the "Budiniah Foundation" tends to decrease, especially in mathematics as shown in the initial table of the interest in learning questionnaire. Mathematics is one of the subjects that supports other subjects, for example physics, chemistry, accounting and so on, especially for vocational productive lessons. From the results of the initial research obtained by researchers regarding interest in learning which has been calculated shows the percentage of interest in learning is 49.5%.

Susanto (2013) states that according to Elizabert Hurlock there are seven characteristics of interest, namely: 1) physical and mental growth accompanies the development of interest 2) learning activities affect interest in learning 3) interest development may experience limitations 4) learning opportunities can affect interest in learning 5) interest in learning depends on habits or culture 6) interest has emotional value 7) interest has egocentric value. In other words, the development of a child's interest is influenced by physical and mental growth, because that interest arises along with the development of physical and mental health, when his physical health is well developed, the interest in doing activities according to his wishes is also good. Conversely, if the physical and mental health problems then, tend to be less enthusiastic in carrying out activities. Then, appropriate and fun and planned learning activities will generate interest in learning. The development of interest may be limited, because interest is influenced by the natural talents of students so that interest in learning is limited because the talents of each student are different. Learning opportunities for students will vary depending on the facilities they have. Cultural activities or customs also affect students' interest in learning, meaning that learning activities that involve cultural elements can attract students' attention. Sixth, emotional weighted interest, emotional weighted interest is an interest that is influenced by the level of liking or happiness of students in carrying out activities carried out by students. Seventh, interest is egocentric, if someone likes something,

From the description above explains that interest in learning can be influenced by learning activities. The teacher plays an important role in learning activities so that it is fun to foster students' learning interest so that a teacher must be able to determine the appropriate learning model.

There are many learning models that can be applied in learning activities, for example the cooperative learning model. The cooperative learning model is a student-centered learning approach. There are many types of cooperative learning models that can be implemented by teachers to increase students' learning interest and creativity. Problem-Based Learning (PBL) is an appropriate learning model in mathematics that requires the participation of students to solve problems by exploring ideas and strategies in solve problems.

According to Delisle (Abidin, 2014: 159) the Problem-Based Learning model is a learning model developed to help teachers develop thinking skills and problem-solving skills in students while they study

learning material. Problem Based Learning is a learning model that trains students to identify problems, formulate problems, analyze and solve everyday problems and then evaluate the solution to the problem.

In previous research conducted by Widyastuti, Wijaya, AP, Wayan, R., & Marpaung, R. R.T. (2019). Students' interest in mathematics and its relationship with learning methods and self-efficacy. Journal of Mathematics Education, 13(1), 83-100 states that there is a fairly strong positive relationship between the implementation of learning methods and an interest in mathematics. In another study I Dewa Ayu Tini Udayani, I Gusti Agung Ayu Wulandari, Gusti Ngurah Sastra Agustika (2020) stated that there was a significant influence on interest in learning mathematics between groups that were studied with the Creative Problem Solving learning model. While there is another study conducted by Abdul Gani (2015) Volume 3 No. 3 Journal of Mathematical Power states that the cooperative learning model has no effect on learning interest.

It is possible that the research carried out was not in-depth so that there was a gap, so research needs to be continued with literacy as the intervening.

In research conducted by Jamalum Purba, Ani Sutiani, Freddy Tua Musa Panggabean, Pasar Maulim Silitonga, and Nora Susanti Journal of Innovation in Chemistry Education Volume 4, Number 2, October 2022 entitled "The Relationship between Learning Motivation and Confidence with Chemical Literacy Ability and Its Impact on Students' HOTS states that chemical literacy ability has a significant positive relationship and effect on HOTS abilities. Chemical literacy ability is a positive intervening factor between learning motivation and self-confidence in HOTS abilities.

Another study conducted by Nafia Hani Yudanta (2021) states that there is a significant influence from the ease and usefulness of the aCOWtancy website on student motivation and learning effectiveness. The variable use of aCOWtancy (digital literacy) also acts as an intervening variable.

According to Russefendi (2006:233). Interest in learning mathematics and the ability to think creatively needs to be developed in students. "Interest in learning with learning achievement is positively correlated. Given the correlation between learning interest and learning success, even though it is small, there is and is positive, the factors that cause interest in learning should be fostered.

Besides interest in learning, another thing that determines success in learning is literacy. Literacy or literacy is a general term that refers to a set of abilities and individual skills in reading, writing, speaking, calculating and solving problems at a certain level of expertise needed in everyday life. UNESCO also explains that literacy is a set of real skills, especially cognitive skills in reading and writing which are independent of the context in which the skills in question are obtained, from whom these skills are obtained and how to acquire them. One's understanding of this literacy will be influenced by competence in the academic field,

national context, institutions, cultural values and experience. (Farid Ahmadi and Hamidulloh Ibda: 2019) stated that new literacy is an ability or an effort to obtain information, knowledge, through three ways, namely data literacy, technology and HR/humanism. New literacy becomes a reinforcement of old literacy, namely calistung or known as reading, writing, arithmetic.

Motivation in the financial context 6) Cultural literacy and citizenship are skills in understanding and acting towards Indonesian culture as a national identity and understanding rights and obligations as citizens. In the research results from Marlina Eliyanti Simbolon1*, Arita Marini2, Maratun Nafiah3 (2022) entitled "The effect of digital literacy on elementary school students' reading interest" says that there is an influence of digital literacy on reading interest of fifth grade elementary school students in the Ahmad Yani Cluster, Kuningan Regency . Therefore, digital literacy needs to be considered in increasing elementary school students' interest in reading. Maratun Nafiah3 (2022) entitled "The Effect of Digital Literacy on Reading Interest in Elementary School Students" said that there was an influence of digital literacy on reading interest in fifth grade elementary school students in the Ahmad Yani Cluster, Kuningan Regency. Therefore, digital literacy needs to be considered in increasing elementary school students' interest in reading. Maratun Nafiah3 (2022) entitled "The Effect of Digital Literacy on Reading Interest in Elementary School Students" said that there was an influence of digital literacy on reading interest in fifth grade elementary school students in the Ahmad Yani Cluster, Kuningan Regency. Therefore, digital literacy needs to be considered in increasing elementary school students' interest in reading.

In research conducted by Sri Buwono, Jagad Aditya Dewantara (2020) showed that learning methods by utilizing digital technology had a positive effect on digital literacy of PIIS FKIP students at Tanjungpura University. In research conducted by Felisitas Dayanti1, Chandra Sundaygara2, Kurriawan Budi Pratama3 stated that the model learning Creative Problem Solving can improve scientific literacy and student learning motivation. In addition to learning and literacy models, the thing that influences interest in learning is motivation. Motivation is the basic impetus that moves a person to behave (Hamzah Uno, 2008:1).

Motivation is a psychological process that reflects the interaction between attitudes, needs, perceptions and decisions that occur in a person. There are two motivational factors, namely internal motivation that comes from within and external motivation that comes from outside yourself. Internal factors that can increase student learning motivation include physical, intelligence, attitudes, interests, talents, and emotions. These factors can affect students' interest in learning. With strong motivation to succeed, it will generate interest in learning.In research conducted by Amni Fauziah1, Asih Rosnaningsih2, Samsul Azhar3 (2017) said that there is a positive relationship between

learning motivation and interest in learning fourth grade students at SDN Poris gaga 05 Tangerang City

This research has an important meaning related to the problem of interest in learning which is still a lot of attention in the world of education. In addition, this study adds literacy as a moderating between learning models, motivation and interest in learning. So this research takes the title "Learning Model, Motivation and Literacy as Intervening that Affects Interest in Learning"

METHODS

This study used a survey method with a questionnaire technique. The survey method according to Neuman W Lawrence in Sugiyono (2018) survey research method is quantitative research. In survey research, researchers ask several people (who are called respondents) about past or present beliefs, opinions, characteristics of an object and behavior by using a questionnaire. The questionnaire as a research instrument is a data collection technique that is carried out by providing a set of written statements or questions to the respondent to be answered by the respondent.

RESULTS

1. Classic assumption test

The purpose of the classical assumption test is to provide certainty that the regression equation obtained has estimation accuracy, is not biased and is consistent.

Table 1. Results of the One Sample Kolmogorov-Smirnov Test (X1 and X2 against X3)

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residuals
N		80
Normal Parameters, b	Means	0
	std. Deviation	4.26290669
Most Extreme Differences	absolute	58
	Positive	52
	Negative	-0.058
Test Statistics		58
asymp. Sig. (2-tailed)		.200c,d

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.
d. This is a lower bound of the true significance.

The data normality test uses the Kolmogorov Smirnov One Sample, namely with the provisions, if the significant value is above 0.05 then the data is normally distributed, whereas if the significant value is below 0.05 then the data is not normally distributed

From tables 1, it can be concluded that the Kolmogorov-Smirnov significance value is 0.200 > 0.05. So based on these results it can be stated that the data used in the research is normally distributed.

2. Test Multicollinearity

The multicollinearity test aims to test whether the regression model finds a correlation between the independent variables. A good regression model is a model that is free from multicollinearity. The data multicollinearity test can be seen from the VIF (Variance Inflation Factor) and Tolerance values.

These two measures show which independent variables are explained by other independent

variables. Tolerance measures the variability of the selected independent variables and which cannot be explained by other independent variables. Regression models that are free from multicollinearity are those that have a VIF of less than 10 and a valuetolerance more than 0.1. Referring to the two opinions above, based on the results of the research that has been done, the following values can be obtained.

Table 2. Multicollinearity Test (X1 and X2 against X3)

Coefficientsa

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	std. Error	Betas	t	Sig.	tolerance	VIF
1	(Constant)	6,282	6,423		0.98	0.33		
	Learning model	0.442	0.143	0.315	3,084	3	0.908	1.101
	Motivation to learn	0.409	0.126	0.332	3,252	2	0.908	1.101

a. Dependent Variable: Interest in learning

Table 3. Multicollinearity Test (X1, X2 and X3 to Y)

Coefficientsa

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	std. Error	Betas	t	Sig.	tolerance	VIF
1	(Constant)	12,295	2,401		5.12	0		
	Learning model	0.184	56	0.24	3,258	2	0.808	1,237
	Motivation to learn	0.174	0.05	0.26	3,502	1	0.798	1,253
	Mathematical literacy	0.289	42	0.529	6,815	0	0.728	1,374

a. Dependent Variable: Interest in learning

Based on these results, multicollinearity does not occur because each independent variable, namely learning model, learning motivation and mathematical literacy has a VIF value of < 10 and tolerance > 0.1.

3. Path Analysis of Intervening Variables

Another term for a regression test with intervening variables is path analysis or path analysis. Path analysis is a further part of the regression analysis, path analysis not only examines the direct effect but also explains the indirect effect of the independent variable through the intervening variable on the dependent variable.

a. Model I Pathway Regression

Table 4. Regression of equations X1 and X2 on X3

Coefficientsa

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	std. Error	Betas	t	Sig.	tolerance	VIF
1	(Constant)	6,282	6,423		0.98	0.33		
	Learning model	0.442	0.143	0.315	3,084	3	0.908	1.101
	Motivation to learn	0.409	0.126	0.332	3,252	2	0.908	1.101

a. Dependent Variable: Mathematical Literacy

Referring to the output of the regression model I table 4, in the "Coefficients" table it can be seen that the significance values of the

two variables namely X1 = 0.003 and X2 = 0.002 are smaller than 0.05. These results conclude that the Regression Model I, namely variables X1 and X2 have a significant effect on X3.

a. Coefficient of Determination of Model I

Table 5. R Square equation X1 and X2 to X3

Summary model b

Model	R	R Square	Adjusted R Square	std. Error of the Estimate
1	.522a	0.272	0.253	4,318

a. Predictors: (Constant), learning motivation, learning model
b. Dependent Variable: Mathematical Literacy

Based on table 5, the R Square value contained in the "Model Summary" table is 0.272, this shows that the contribution of the influence of X1 and X2 to X3 is 27.2%, while the remaining 78.2% is the contribution of the variables others that were not included in the study.

b. Model II Path Coefficients (X1, X2 and X3 with respect to Y)

Table 6. Regression of equations X1, X2 and X3 on Y

Coefficientsa

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	std. Error	Betas			tolerance	VIF
1	(Constant)	12,295	2,401		5.12	0		
	Learning model	0.184	56	0.24	3,258	2	0.808	1,237
	Motivation to learn	0.174	0.05	0.26	3,502	1	0.798	1,253
	Mathematical literacy	0.289	42	0.529	6,815	0	0.728	1,374

a. Dependent Variable: Interest in learning

Referring to the output of the regression model II table 6, in the "Coefficients" table it can be seen that the significance values of the two variables namely X1 = 0.002, X2 = 0.001 and X3 = 0.000 are smaller than 0.05. These results conclude that the Regression Model II, namely the variables X1, X2 and X3 have a significant effect on Y.

c. Coefficient of Determination of Model II

Table 7. R Square equations X1, X2 and X3 to Y

Summary model b

Model	R	R Square	Adjusted R Square	std. Error of the Estimate
1	.816a	0.666	0.653	1,604

a. Predictors: (Constant), Mathematical Literacy, Learning Models, Learning Motivation
b. Dependent Variable: Interest in learning

Based on table 7, the R Square value contained in the "Model Summary" table is 0.666, this indicates that the contribution of the influence of X1, X2 and X3 to Y is 66.6% while the remaining 33.3% is a contribution from the variable – other variables not included in the study. Meanwhile, the value of e2 can be found using the formula e2 = √(1-0.666) = 0.5779.

CONCLUSSION

Based on the results of research that has been done regarding the influence of learning models, learning motivation, interest in learning, and mathematical literacy abilities as intervening variables, several conclusions can be drawn. First, the learning model (X1) has a positive and significant influence on the mathematical literacy skills (X3) of Budiniah Vocational High School students. The significance value of 0.003 which is less than 0.05 indicates that the learning model has a direct effect on mathematical literacy skills. Furthermore, learning motivation (X2) also has a positive and significant effect on the mathematical literacy skills (X3) of Budiniah Vocational High School students, with a significance value of 0.002 which is also smaller than 0.05, confirming that learning motivation has a direct effect on mathematical literacy abilities. Then, the results show that mathematical literacy ability (X3) has a positive and significant influence on students' interest in learning (Y). With a significance value of 0.000 which is far below 0.05, it can be concluded that mathematical literacy skills have a direct effect on students' learning interest. Furthermore, the learning model (X1) and learning motivation (X2) also have a positive and significant effect on learning interest (Y) for Budiniah Vocational High School students. This is corroborated by a significance value of 0.002 and 0.001 which is less than 0.05, indicating that both have a direct influence on students' learning interest. In addition, when looking at mediating variables, the results show that the learning model (X1) and learning motivation (X2) mediated by mathematical literacy skills (X3) also have an influence on students' interest in learning (Y). The direct and indirect effects of each variable on learning interest can be seen from the calculation of the value of the direct and indirect effects. Overall, this study indicates that the learning model, learning motivation, and mathematical literacy skills have a significant influence on the learning interest of Budiniah Vocational High School students.

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