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The Effect of Motivation on Students's Mathematics Learning Outcomes in the New Normal Era

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ABSTRACT

Motivation has a very important role in encouraging students to study with full attention and concentration in receiving lessons, so that the expected learning objectives can be achieved, one of which is indicated by increased learning outcomes. This research aimed to know the effect of motivation on students' mathematics learning outcomes. This type of research is a correlational study using a survey method. The event surveyed in this study is the effect of motivation on students' mathematics learning outcomes in the new normal era. The subjects of this study were 115 students from one of the state junior high schools in Batam City who were selected using random sampling technique. Data collection techniques in this research used a questionnaire. The data collected is data about students' motivation and mathematics learning outcomes which were analyzed using descriptive and inferential statistics. The results showed that the average value of student learning outcomes was in the medium category, which was 65.48. While the value of the percentage of students' learning motivation on each criterion shows that students have a high enough learning motivation during the mathematics learning process. Meanwhile, based on the results of the correlation test, it shows a positive relationship with the correlation value which is in the low category.

Keywords: *Motivation; Mathematics Learning Outcomes; New Normal Era*

1. Introduction

Education is a form of human culture that is dynamic. Therefore, changes in education are things that should happen in line with changes in the culture of life. These changes in terms of improving the quality of education at all levels need to be carried out continuously in anticipation of future needs [1]. Education should not only be to meet curriculum targets, but also to instill understanding in students. One of the subjects that require students' understanding is mathematics.

Mathematics learning contains various components that can substantially guide students to conceptualize and build their mathematical knowledge in different ways, and take advantage of their unique experiences in life or learning mathematics [2]. According to [3] mathematics is a language that uses carefully defined terms and symbols. Learning terms and symbols can improve your ability to communicate about science, dealing with real-life situations, and math itself. This is in line with [4] that mathematics is the science of patterns and rules. Mathematical solutions have the meaning of finding and revealing these regularities or sequences and giving meaning to an abstract thing.

Mathematics is one of the basic knowledge needed by students to support their success in taking education. However, the quality of global education is currently experiencing challenges as a result of the Covid-19 virus pandemic whose spread is very worrying. This causes the government to work hard to suppress the spread of the Covid-19 virus by issuing a policy of keeping a distance. With this policy, all activities that used to be carried out outside the home must now be temporarily suspended and replaced with activities from home, including the learning system in schools. Not only learning, but all other educational activities, such as evaluation and administration.

Based on the facts on the ground, studying at home causes students to forget a lot of subject matter, especially in mathematics, so a number of schools in the green zone have opened schools and implemented face-to-face learning. According to [5] face-to-face learning is classical learning in which teachers and students meet directly in a forum or the same room. Face-to-face learning activities in this new normal era are slightly different from face-to-face as usual because they have to follow the rules and directions from the government.

In this new normal era, the challenges of teachers are increasingly complex because in addition to having to carry out their duties as a teacher in the field, they also have to comply with various rules that apply in the midst of the Covid 19 pandemic. One alternative that can be done in current conditions is to design a learning process that in accordance with school conditions without ignoring the rules of health protocols. New normal is a change in behavior to continue to carry out normal activities but with the addition of implementing health protocols to prevent transmission of Covid-19 [6].

The teaching and learning process can be influenced by various factors, one of which is the motivational factor that will underlie students to carry out learning activities. In the midst of the limitations of the current new normal era, students really need motivation to encourage their enthusiasm for learning [7]. Because, motivation has an important role in determining and encouraging students to study with full attention and concentration when receiving lessons, so that learning objectives can be achieved by being shown by increased learning outcomes. Lack of motivation to learn in students can be a challenge for teachers to be able to change and improve it again because it can affect students' interest in learning [6]. So, in this case motivation has an influence on improving student learning outcomes. High learning motivation will support the ongoing learning process. Students who have high learning motivation will be more enthusiastic and serious in participating in the learning process at school so that the learning outcomes achieved can be optimal.

According to [8] motivation is an impulse that arises due to influences from within and outside the individual so that the person wishes to make changes in behavior or certain

activities that are better than the previous situation. Meanwhile, [9] explained that motivation refers to the factors that activate, direct, and maintain behavior that is directed towards achieving goals. For example, if students want to achieve good learning achievement, they have to study hard.

Students with high learning motivation will be more persistent in doing assignments and willing to work on their own accord to direct an action of learning behavior shown by characters such as having initiative, being diligent, active in learning, punctual, and disciplined [10]. This is in line with the research by [11] which explained that students who are academically motivated tend to plan and set their academic goals and strive with passion to achieve these goals. Students also tend to focus all their attention and efforts in their academic work and see academic challenges as obstacles to be overcome. In connection with the above, teachers should learn to generate student learning motivation because without motivation, the learning outcomes achieved by students will be minimal [12]. A student will not be able to study well and diligently if there is no motivation in him. Even without motivation, a student will not carry out learning activities. Therefore, increasing student motivation to learn does not only lie with subject teachers and parents, but is a shared responsibility so that the learning process that occurs in students goes well. so that learning achievement will be maximized.

2. Methods

The type of research is a correlational study using a survey method. The event surveyed in this study is the effect of motivation on students' mathematics learning outcomes in the new normal era. Judging from the type of analysis, this study uses a quantitative approach. The subjects of this study were 115 students from one of the State Junior High Schools in Batam City who were selected using random sampling technique. The data collection technique in this study used a questionnaire. The data collected is data about students' motivation and mathematics learning outcomes. In order for the data obtained to be systematically arranged and easier to interpret, the data analysis was carried out during the data collection process with the data analysis techniques used were descriptive and inferential statistics. The range of scores and criteria scales on motivation and mathematics learning outcomes can be seen in the following Table 1 and Table 2.

Table 1. Conversion of Student Learning Motivation Scale

Interval	Criteria
$X \leq 54$	Very Low
$54 < X \leq 72$	Low
$72 < X \leq 90$	Moderate
$90 < X \leq 108$	High
$X > 108$	Very High

Table 2. Conversion of Student's Mathematics Learning Outcomes Scale

Interval	Criteria
$90.07 < X$	Very High
$73.68 < X \leq 90.07$	High
$57.29 < X \leq 73.68$	Moderate
$40.89 < X \leq 57.29$	Low
$X < 40.89$	Very Low

3. Results and Discussions

Data on students' mathematics learning outcomes were obtained through daily test scores with a total of 115 students. Based on the results of data analysis shows that the mean score of students is 65.48 and the standard deviation is 16.39. To see the trend of student learning outcomes based on the conversion of online-based learning outcomes scales can be seen in the following Table 3.

Table 3. Percentage of Students' Mathematics Learning Outcomes

Mean	Standard deviation	Criteria
65.48	16.39	Moderate

Based on the score acquisition data in Table 3, it shows that the mean value of student learning outcomes is in the medium category. Meanwhile, the data for the description of the overall student learning motivation scale is presented in the following Table 4.

Table 4. Percentage of Student Motivation Criteria

Criteria	The number of students	Percentage (%)
Very High	24	20.87
High	62	53.91
Moderate	27	23.48
Low	2	1.74
Very Low	0	0
Total	**115**	**100**

Based on Table 4, information is obtained that the percentage value of student learning motivation on each criterion has different results. However, it can be said that students have a fairly high learning motivation during the mathematics learning process.

Meanwhile, to find out the relationship between motivation and students' mathematics learning outcomes, it is necessary to test hypotheses using Pearson Product Moment correlation analysis and regression tests to be able to see the effect of research variables. The output of the correlation test and regression test between motivation and student learning outcomes can be seen in the following Table 5.

Table 5. The Results of Correlation Test between Motivation and Students' Mathematics Learning Outcomes

		Learning Motivation	Learning outcomes
Learning Motivation	Pearson Correlation	1	.265**
	Sig. (2-tailed)		.004
	N	115	115
Learning outcomes	Pearson Correlation	.265**	1
	Sig. (2-tailed)	.004	
	N	115	115

**. Correlation is significant at the 0.01 level (2-tailed).

Based on the output of the correlation test, it is known that the value of the correlation coefficient between motivation and students' mathematics learning outcomes is 0.265 with a significance value of 0.004. Based on the criteria because the significance value is 0.004 < 0.05, it can be concluded that there is a relationship between motivation and students' mathematics learning outcomes.

Referring to the interpretation guidelines for the correlation coefficient, it shows a positive relationship with the correlation value being in the low category. This positive direction explains that an increase in the variable X will be accompanied by an increase in the variable Y, and vice versa [13]. In other words, this study shows that if learning motivation has increased, it will be accompanied by an increase in students' mathematics learning outcomes. On the other hand, if students' learning motivation decreases, it will be accompanied by a decrease in mathematics learning outcomes. This is in line with the research of [14] which explained that students with high learning motivation tend to work harder and are not easily discouraged in learning. In addition, students also have more perseverance and a strong drive in learning. This opinion is supported by the results of [15] research which stated that students' learning motivation is largely influenced by reinforcement such as giving awards, certificates, and written comments on the results of their work. Therefore, the role of mathematics teachers is needed in building and generating student learning motivation so that the expected learning outcomes can be achieved optimally.

Meanwhile, to predict how far the Y variable if the value of the X variable is changed, a regression test can be used. Here are the results of the regression test output between motivation and mathematics learning outcomes.

Table 6. The Results of Regression Test between Motivation and Students' Mathematics Learning Outcomes

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	26.969	13.262		2.034	.044
	Learning Motivation	.388	.133	.265	2.922	.004

a. Dependent Variable: Learning outcomes

Based on the results of the regression test output, information is obtained that the constant value (a) is 26.969 while the regression coefficient (b) is 0.388 so that the regression equation is Y = 26.969 + 0.388X. The value of the regression coefficient (b) of 0.388 indicates that by increasing the motivation to learn each unit can increase students' mathematics learning outcomes by 0.388 by assuming that other variables are fixed. Meanwhile, with the acquisition of a significance value of 0.004 < 0.05, it can be said that there is an influence between learning motivation and students' mathematics learning outcomes in the new normal era.

In the process of learning mathematics in the classroom, success or failure can not only be seen from one type of factor, but it is necessary to look at the various factors that influence it. One factor that comes from within students is motivation. Motivation is a

psychological condition that can encourage students to learn. Several studies have shown that student learning outcomes in general can increase if motivation in learning also increases. Many students' talents cannot develop due to not getting the right motivation. If students get the right motivation, there will be extraordinary energy that can make students achieve unexpected results.

In this new normal era, a teacher must be able to make learning fun to increase student motivation in the mathematics learning process carried out. Because learning motivation is very important to be owned by someone, especially for students who are studying at school. The level of student learning motivation greatly determines the quality of behavior in doing the given math task. The existence of learning motivation will encourage students to be more enthusiastic in learning and doing the tasks given by the teacher, so as to obtain positive results and as desired [16].

4. Conclusions

Based on the results of the study, it can be concluded that there is an influence of motivation on students' mathematics learning outcomes in the new normal era. In addition, there is also a positive relationship between motivation and student learning outcomes in mathematics. With this positive direction, it shows that if learning motivation has increased, it will be accompanied by an increase in students' mathematics learning outcomes. Conversely, if students' learning motivation decreases, it will be accompanied by a decrease in mathematics learning outcomes.

This research has provided descriptive data and information about the influence and relationship between motivation and students' mathematics learning outcomes in the new normal era. However, there are still limitations in this study, namely when students fill out a learning motivation questionnaire, researchers cannot control it as a whole. This causes the possibility of other factors that affect students, such as physical health, honesty, and psychological conditions. In addition, researchers also experienced time constraints in carrying out research, especially when taking student questionnaire research data. So, in order to obtain accurate description results, a sample screening process is carried out by eliminating certain samples after the data is collected. The criteria for sample disposal include students who do not complete most of the questions and students who are indicated to be working on problems carelessly. Thus, for further researchers who want to conduct research on student learning motivation in the new normal era, it is better to expand the research subject to all existing levels of education, with the aim of getting a more optimal description of the learning motivation of students' mathematics learning outcomes.

References

[1] Trianto, *Mendesain model pembelajaran inovatif-progresif*. Jakarta: Kencana Prenada Media Group, 2010.

[2] A. Bishop, H. Tan, and T. N. Barkatsas, *Diversity in mathematics education: Towards inclusive practices*. Heidelberg: Springer, 2015.

[3] R. Reys, M. M. Lindquist, D. V Lambdin, and N. L. Smith, *Helping children learn mathematics*, 9th ed. New York: John Wiley & Sons, Inc, 2009.

[4] J. A. Van de Walle, *Elementary and middle school mathematics: Teaching*

developmentally. Boston: Pearson Education, Inc, 2007.

[5] S. F. Nissa and A. Haryanto, "Implementasi pembelajaran tatap muka di masa pandemi Covid-19," *J. IKA Ikat. Alumni PGSD UNARS*, vol. 8, no. 2, pp. 402–409, 2020, doi: https://doi.org/10.36841/pgsdunars.v8i2.840.

[6] M. Tandi and M. Limbong, "Evaluasi hasil belajar siswa SMA Kristen Barana' pada pembelajaran tatap muka di masa new normal," *J. Manaj. Pendidik.*, vol. 10, no. 1, pp. 13–20, 2021, doi: https://doi.org/10.33541/jmp.v10i1.3262.

[7] H. Fitriani and A. Syarkowi, "Motivasi belajar siswa SMA pada pembelajaran Fisika di Era New Normal," *J. Ilm. Pendidik. Fis.*, vol. 5, no. 3, pp. 448–458, 2021.

[8] H. B. Uno, *Teori motivasi dan pengukurannya*. Jakarta: Bumi Aksara, 2013.

[9] R. S. Peters, *The concept of motivation*, 2nd ed. New York: Taylor & Francis Group, 2015.

[10] R. Bakar, "The effect of learning motivation on student's productive competencies in vocational high school, West Sumatra," *Int. J. Asian Soc. Sci.*, vol. 4, no. 6, pp. 2226–5139, 2014.

[11] B. Y. Dramanu and A. I. Mohammed, "Academic motivation and performance of junior high school students in Ghana," *Eur. J. Educ. Dev. Psychol.*, vol. 5, no. 1, pp. 1–11, 2017.

[12] L. J. Moleong and R. Natawijaya, *Psikologi Pendidikan*. Jakarta: Prindo Jaya, 1979.

[13] L. Cohen, L. Manion, and K. Morrison, *Research methods in education*, 6th ed. New York: Routledge, 2007.

[14] S. C. Shiu and S. Y. Lin, "The relationship between learning motivation and innovative behavior in the university students: From the perspective of creative self-efficacy," *Int. J. Arts Sci.*, vol. 5, no. 5, pp. 33–38, 2012.

[15] U. Phuntsho, "The impact of motivation on student's academic achievement and learning outcomes in mathematics - an action research," *J. Educ. Action Res.*, vol. 1, no. 3, pp. 41–55, 2018, doi: 10.13140/RG.2.2.22064.46084/1.

[16] A. Cahyani, I. D. Listiana, and S. P. D. Larasati, "Motivasi belajar siswa SMA pada pembelajaran daring di masa pandemi Covid-19," *IQ (Ilmu Al-qur'an) J. Pendidik. Islam*, vol. 3, no. 1, pp. 123–140, 2020, doi: https://doi.org/10.37542/iq.v3i01.57.