

## Motivation to Learn Mathematics After the Covid-19 Pandemic Students

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**Received:** November 2023. **Accepted:** December 2023. **Published:** January 2024.

### ABSTRACT

*During the COVID-19 pandemic, most students had low motivation to learn because learning was carried out boldly. After the end of the COVID-19 pandemic, students returned to learning offline, causing changes in students' learning motivation. Thus, this research aims to determine students' motivation to learn mathematics after the COVID-19 pandemic by describing students' motivation based on motivation indicators. The research method used is a quantitative approach with a descriptive type. The respondents of this research were 110 class VII students of SMP Negeri 1 Bangsal, Mojokerto Regency, East Java. The data collection technique used was an online questionnaire in a Google Form containing 36 statement items. The data analysis technique used is descriptive analysis. This research data analysis shows that students' mathematics learning motivation in the high category is 72%, medium is 21%, and low is 7%. It can be concluded from the analysis that the mathematics learning motivation after the COVID-19 pandemic for class VII students is in the high category, which means that the five indicators of mathematics learning motivation are met well. The indicator with the highest average of 4.09 is the task value indicator. Further research is recommended to add variables such as mathematics learning models.*

**Keywords:** learning motivation, post-pandemic, descriptive quantitative analysis.

**How to Cite:** Rohmawati, S., In'am, A., & Zukhrufurrohmah, Z. (2023). Motivation to Learn Mathematics After the Covid-19 Pandemic Students. *Journal Of Medives : Journal Of Mathematics Education IKIP Veteran Semarang*, 8(1). 122 - 134.



## INTRODUCTION

One of the subjects that is the center of attention in the world of education is mathematics. Mathematics is a subject that is the basis of all subject areas at every level of education (Ferdianto, 2019; Sandy et al., 2019). Mathematics is a subject that can make students think, reason, have opinions, and contribute to solving a problem (Chuseri et al., 2021; Laia & Harefa, 2021). Based on the statement above, it can be concluded that mathematics is an essential subject in education to develop students' logic, way of thinking, and reasoning.

The majority of students think that mathematics is an uninteresting subject to study. Many students assume that studying mathematics feels scary and intimidating, so quite a few students avoid studying mathematics. (Damayanti et al., 2022; Aulia & Rejeki, 2023).

When the Covid-19 pandemic occurred, learning was carried out online. This forces students to adapt to new learning methods because they are required to adapt to education that was initially carried out offline to switch to online learning. During the Covid-19 pandemic, online learning brought many changes to the habits of students and teachers. These changes include knowledge carried out online, requiring students to study using applications such as Google Classroom to collect assignments, and virtual meeting applications such as Zoom to carry out learning. However, after the Covid-19 pandemic, students returned to learning offline.

Based on information from one of the mathematics teachers at SMP Negeri 1 Bangsal, students find it difficult to learn mathematics because, in online learning, students tend to need help understanding the material being

taught. Apart from that, students also rely on other people to help them complete assignments. Thus, this has an impact on student learning motivation. Apart from that, mathematics material that is considered difficult to understand makes students need more motivation to learn mathematics (Rahmawati & Warmi, 2022).

Motivation is the effort that arises in someone to do something based on something they would like to achieve successfully (Sukmawati & yenni, 2020; Thompson et al., 2021). Motivation to learn is one of the factors that becomes the driving force that arises in students to carry out learning activities to master the material that will be understood (Afrisno Udil et al., 2021; In'am & Sutrisno, 2020). Motivation to learn is an essential element contained in learning to help students develop their desire to learn (Tabuena & Pentang, 2021).

There are three functions of learning motivation, namely: 1) encouraging someone to take specific actions, which means there will be no action to learn without motivation; 2) motivation functions as a guideline for motivation itself, which means that this motivation aims to encourage someone to carry out the desired goal, and 3) motivation aims to encourage student's enthusiasm for learning to help students achieve the desired goals (Aqilah et al., 2021).

Motivation is divided into two types, namely intrinsic motivation and extrinsic motivation. These two motivations are related to each other. Intrinsic motivation is the motivation that arises from one's own needs and goals, while extrinsic motivation is the motivation that occurs due to factors originating from outside (Dewi et al., 2019; Putri et al., 2019). Based on intrinsic motivation, students can

achieve learning goals because of the encouragement within the students themselves. Meanwhile, based on extrinsic motivation, students can achieve learning goals due to external encouragement, which causes these students to be motivated to learn (Sugianto et al., 2023). Based on the definition of motivation from several opinions above, learning motivation is one of the elements that motivate students to carry out learning activities, which arises due to factors from within the student and outside.

Research relevant to this includes the results of a study conducted by Nurfallah & Pradipta (2021) regarding high school students' motivation to learn mathematics during online learning carried out during the COVID-19 pandemic, which was in the medium category. According to Murtiyasa & Amini (2021), who analyzed the mathematics learning motivation of students at SMP Negeri 1 Grogol based on six indicators, the average learning motivation was 3.71 in the excellent category. Apart from that, the results of research conducted by Iqbal et al. (2021) show that the motivational condition of class VB students at SD Negeri Demangharjo 01 studying mathematics during the pandemic is in the sufficient category based on six indicators.

Based on the explanation above, the difference between this research and previous research is the mathematics learning after the COVID-19 pandemic for class VII students at SMP Negeri 1 Bangsal. This research aims to determine students' mathematics learning motivation after the COVID-19 pandemic by describing students' mathematics learning motivation based on motivation indicators.

## METHOD

This research uses a quantitative approach with a descriptive research type. This quantitative descriptive method was used to determine the level of mathematics learning motivation of class VII SMP students after the COVID-19 pandemic by describing students' mathematics learning motivation based on motivation indicators. This research was conducted at SMPN 1 Bangsal, Mojokerto Regency, East Java. The respondents in this research were 110 class VII students.

The data collection technique is based on a learning motivation questionnaire (non-test). In this technique, respondents are given a series of statements regarding conditions that are appropriate or not appropriate to the needs experienced by the respondent. This learning motivation questionnaire was conducted online via Google Forms and consisted of 36 statement items. Each statement item is given five alternative answers using a Likert scale of 1 - 5. Score 1 indicates strongly disagree, score 2 indicates disagree, score three indicates disagree, score 4 indicates agree, and score 5 means strongly agree. Then, the results will be analyzed as data about student learning motivation. Indicators in the student learning motivation questionnaire adapted from Liu & Lin (2010) are presented in Table 1.

Table 1. Indicators of Motivation to Learn Mathematics

No.	Indicator	Item
1.	Intrinsic and Extrinsic orientation goals	1, 2, 7, 8, 13, 14, 18, 19, 24, 25, 30, 31
2.	Assignment Grades	3, 9, 15, 20, 26, 32
3.	Confidence Control For Learning	4, 10, 16, 21, 27, 33
4.	Confidence	5, 11, 22, 28, 34
5.	Test Anxiety	6, 12, 17, 23, 29, 35, 36

This data analysis technique was carried out using descriptive analysis. The descriptive analysis technique in this research uses data presentation in tabular form. The completed questionnaire will be analyzed by scoring each statement item in the table. Then, the table will calculate the total score from the questionnaire in the form of averages and percentages for each indicator and overall. With this analysis, research findings based on categories will be known. The category-based assessment scale used in this research was adapted by Huda & Warmi (2022) and presented in Table 2.

Table 2. Scoring scale

No.	Interval	Category
1.	$0 \leq \text{mean} \leq 1$	Very less
2.	$1 < \text{mean} \leq 2$	Not enough
3.	$2 < \text{mean} \leq 3$	Enough
4.	$3 < \text{mean} \leq 4$	Good
5.	$4 < \text{mean} \leq 5$	Very good

## RESULTS AND DISCUSSION

### Result

Questionnaire data that has been collected via Google Forms is analyzed by calculating frequencies, averages, and percentages.

Table 3: Intrinsic and Extrinsic orientation goals

No	Item	Score					Mean
		1	2	3	4	5	
1.	In math class, I like to have some material that is challenging and makes me learn more	0 0%	2 1,8%	18 16,4%	72 65,5%	18 16,4%	3,96
2.	I want to have a curiosity about math material	1 0,9%	1 0,9%	7 6,4%	51 46,4%	50 45,5%	4,35
7.	I want the most to get the best grades in math	1 0,9%	0 0%	1 0,9%	34 30,9%	74 67,3%	4,64
8.	For me, studying math can improve my overall academic score	0 0%	4 3,6%	29 26,4%	57 51,8%	20 18,2%	3,85
13.	The skills I learned from math can be applied in other classes	3 2,7%	2 1,8%	23 20,9%	70 63,6%	12 10,9%	3,78
14.	I am interested in mathematics learning material	2 1,8%	0 0%	29 26,4%	51 46,4%	28 25,5%	3,94
18.	Mathematics contributes a lot to humans	1 0,9%	4 3,6%	7 6,4%	73 66,4%	25 22,7%	4,06
19.	If I have the correct study pattern for learning math, I will do better in class	1 0,9%	0 0%	6 5,5%	64 58,2%	39 35,5%	4,27
24.	If I have enough time to do exercises in math, I will have better performance.	1 0,9%	0 0%	12 10,9%	66 60%	31 28,2%	4,15
25.	I believe that I will have very good grades in math class	3 2,7%	1 0,9%	22 20%	53 48,2%	31 28,2%	3,98
30.	In taking math exams, I would have the negative thought that I was inferior to other classmates	15 13,6%	7 6,4%	30 27,3%	39 35,5%	19 17,3%	3,36
31.	In taking math exams, I would constantly think about questions that I could not answer most before.	2 1,8%	4 3,6%	16 14,5%	61 55,5%	27 24,5%	3,97
Total		2,5 2,27%	2,08 1,89%	16,67 15,15%	57,58 52,35%	31,17 28,34%	4,03

In Table 3, the indicators of intrinsic and extrinsic orientation goals have an average of 4.03 in the very good category. The results of this analysis can be interpreted as intrinsic and extrinsic orientation goals, indicators of learning motivation that influence student learning activities. These indicators come from elements within students and the environment

that encourage students to be motivated in learning activities (Fitriyani et al., 2020). The highest average of 4.64 was in item number 7, where students desire to get the best score in mathematics. However, the lowest standard of 3.36 was in item number 30, where students continued to think about questions that could not be answered during the mathematics exam.

The most significant frequency, namely 66.4%, shows that 73 students agree on item number 18 regarding mathematics providing many benefits for humans. The minor frequency is 0%,

desire to understand the material in mathematics learning to get high grades (Murtiyasa & Amini, 2021). Meanwhile, the lowest average of 3.70 was in item 26, meaning students need

Table 4. Assignment Grades

No	Item	Score					Mean
		1	2	3	4	5	
3.	My biggest desire is to understand the content of mathematics learning material	1 0,9%	0 0%	11 10%	43 39,1%	55 50%	4,37
9.	I hope I can get higher marks in math than other classmates	1 0,9%	0 0%	9 8,2%	47 42,7%	53 48,2%	4,37
15.	I feel the material for math lessons is very useful	1 0,9%	0 0%	10 9,1%	67 60,9%	32 29,1%	4,17
20.	If I don't do better in math class, I believe it is my fault	1 0,9%	5 4,5%	4 3,6%	64 58,2%	36 32,7%	4,17
26.	I believe that I can understand the most difficult parts of math material on my own	2 1,8%	4 3,6%	36 32,7%	51 64,4%	17 15,5%	3,70
32.	In taking math exams, I would think about the consequences of failing the exam	3 2,7%	8 7,3%	23 20,9%	53 48,2%	23 20,9%	3,77
Total		1,5 1,36%	2,83 2,57%	15,50 14,09%	54,17 49,25%	36 32,72%	4,09

which means no students disagree with statement items 7, 14, 19, and 24. Based on the results of this analysis, intrinsic and extrinsic orientation goals are indicators of learning motivation that influence student learning activities because these indicators come from elements within the student and the environment that encourage students to be motivated in learning activities.

The overall average from Table 4 is 4.09 in the very good category. The highest standard was for items number 3 and 9 at 4.37. This means that students

help understanding complex mathematics material.

The statement with the most significant frequency, namely 60.9%, is in item 15, where 67 students agree that the material in mathematics lessons is beneficial. Apart from that, as many as 64 students agreed with item number 20, which shows that it is the fault of students who do not learn mathematics well. The lowest frequency of 0% means that no students disagree with items 3, 9, and 15.

Table 5. Confidence Control For Learning

No	Item	Score					Mean
		1	2	3	4	5	
4.	In math class, I would like to have more homework that will help me learn more, even if it won't improve my grades	5 4,5%	11 10%	46 41,8%	41 37,3%	7 6,4%	3,31
10.	I want to get a higher score because I want to show my skills to my classmates	4 3,6%	3 2,7%	28 25,5%	49 44,5%	26 23,6%	3,82
16.	I like every topic and content of math lessons	1 0,9%	1 0,9%	34 30,9%	58 52,7%	16 14,5%	3,79
21.	If I study hard enough, I can understand the contents of the learning materials used in mathematics	1 0,9%	0 0%	10 9,1%	58 52,75	41 37,4%	4,25
27.	I believe that I can master every topic in mathematics	2 1,8%	2 1,8%	38 34,5%	50 45,5%	18 16,4%	3,73
33.	In taking the exam, I felt nervous and worried	4 3,6%	8 7,3%	19 17,3%	45 40,9%	34 30,9%	3,88
Total		2,83 2,57%	4,17 3,79%	29,17 26,52%	50,17 45,61%	23,67 21,52%	3,80

Based on the six statement items in Table 5, students' control of beliefs for learning is in a good category because it averages 3.80. The average number of students who tend to disagree (scores 1 and 2) is 6.36%, and those who tend to agree (scores 4 and 5) are 67.13%. Apart from that, 52.7% of students agreed with statement items 16 and 21. This shows that students like the material in mathematics learning if they study harder to understand the material in mathematics learning.

In Table 6, the results show that motivation to learn mathematics based on self-confidence has an average of 3.83 in the excellent category. When

students have good self-confidence, they can control their self-confidence well, which will influence their motivation to carry out learning activities (Mulyaningsih et al., 2021). Learning mathematics can improve students' logical thinking, item number 5, which has the highest average, 4.15. Meanwhile, students who can help their friends learn mathematics in item number 28 have the lowest standard, 3.23.

The five statement items in Table 6 show that 71 students, with a percentage of 64.5%, agreed with item number 22 that they could not



understand the material in mathematics learning if they did not study harder.

This is different from item number 34, which shows that 5 students, with a

Table 6. Confidence

No	Item	Score					Mean
		1	2	3	4	5	
5.	Learning math can improve the logic of my thinking	1 0,9%	1 0,9%	8 7,3%	70 63,6%	30 27,3%	4,15
11.	My best wish is to attend a good university to learn mathematics	1 0,9%	1 0,9%	27 24,5%	47 42,7%	34 30,9%	4,02
22.	If I can't understand every math class topic, I need to work harder.	1 0,9%	3 2,7%	14 12,7%	71 64,5%	21 19,1%	3,98
28.	I can teach math to classmates.	6 5,5%	14 12,7%	49 44,5%	31 28,2%	10 9,1%	3,23
34.	While taking a math test, I heard my heart beating faster.	5 4,5%	9 8,2%	21 19,1%	45 40,9%	30 27,3%	3,78
Total		2,8 2,55%	5,6 5,09%	23,8 21,64	52,8 48%	25 22,73%	3,83

Table 7. Test Anxiety

No	Item	Score					Mean
		1	2	3	4	5	
6.	In order to get better grades in math, I will study harder	1 0,9%	1 0,9%	8 7,3%	60 54,5%	40 36,4%	4,25
12.	I want to be recognized by others, so I want higher scores in math class	4 3,6%	7 6,4%	35 31,8%	44 40%	20 18,2%	3,63
17.	What I learn in mathematics can be applied in my daily life	1 0,9%	2 1,8%	27 24,5%	65 59,1%	15 13,6%	3,83
23.	If I pay full attention to math, I can get better grades	2 1,8%	1 0,9%	15 13,6%	60 54,5%	32 29,1%	4,08
29.	Math is not difficult for me	5 4,5%	5 4,5%	57 51,8%	34 30,9%	9 8,2%	3,34
35.	In taking math exams, I was completely blank and couldn't remember what I had previously studied	12 10,9%	21 19,1%	25 22,7%	31 28,2%	21 19,1%	3,25
36.	Before taking a math exam, be too alert to take a good sleep	9 8,2%	10 9,1%	35 31,8%	38 34,5%	18 16,4%	3,42
Total		4,86 4,42%	6,71 6,1%	28,86 26,24%	47,43 43,12%	22,14 20,13%	3,69

percentage of 4.5%, disagree that the math test makes their heart beat faster.

The anxiety indicator during the test consisting of seven aspects has an average of 3.69 with a good category, as stated in Table 7. Based on seven items, the highest standard is 4.25, which is number 6, to get a high score in mathematics. Students have to study harder. Meanwhile, the lowest average is 3.25, corresponding to item number 35, namely that in mathematics exams, students tend not to remember the material they studied.

the good category. The highest standard was 4.09, namely in the assignment value indicator. Meanwhile, the lowest average was 3.68 for the anxiety indicator during the test.

The most significant frequency of people choosing a score of 5 was in the assignment value indicator with a total of 36 students, which means that 33% of students agreed that the five indicators that influenced learning motivation were the statements contained in the assignment value indicator. Then, the most significant

Table 8. Learning Motivation for Each Indicator

No	Indicator	Score					Mean
		1	2	3	4	5	
1.	Intrinsic and Extrinsic orientation goals	3 2%	2 2%	17 15%	58 52%	31 28%	4,03
2.	Assignment Grades	2 1%	3 3%	16 14%	54 49%	36 33%	4,09
3.	Confidence Control For Learning	3 3%	4 4%	29 27%	50 46%	24 22%	3,80
4.	Confidence	3 3%	6 5%	24 22%	53 48%	25 23%	3,83
5.	Test Anxiety	5 4%	7 6%	29 26%	47 43%	22 20%	3,68
Total		3 3%	4 4%	23 21%	52 47%	28 25%	3,89

As many as 59.1% of students agreed with statement number 17 that the mathematics learned during class could be applied in everyday life. As many as 8.2% of students disagreed with statement number 36 that students should rest by making a good sleep pattern before the mathematics exam. Therefore, students who experience high levels of test anxiety will have a negative outlook, which can affect their motivation to study. In contrast, students with low levels of stress will have good motivation to learn (Khoirunnisa & Ulfah, 2021).

Based on the five indicators in table 8, the average is 3.89, included in

frequency of people choosing a score of 1 was on the anxiety indicator during the test with a total of 5 students, which means that 4% of students did not agree with the statement on the anxiety indicator during the trial.

### Discussion

Based on the data obtained in this research, students' mathematics learning motivation was in the high category at 72%, in the medium category at 21%, and in the low category at 7%. The results of the analysis of students' post-Covid-19 mathematics learning motivation carried out in this research are different from the results of research

conducted by Nurfallah & Pradipta (2021), which showed that students had 13% motivation to learn mathematics during learning during the Covid-19 pandemic. , medium at 70%, and low at 19%. Apart from that, the results of this study are also different from the results of research conducted by Fantriadi et al. (2021), which divided student learning motivation into four categories, namely the very high category at 27%, high at 13%, moderate at 33%, and very low. by 27%.

The results of the analysis of students' mathematics learning motivation in this study had an average of 78%, which shows that in this study, students' learning motivation was higher compared to research by (Hartini & Warmi, 2020), which showed that students' mathematics learning motivation in learning mathematics had an average of 49.925%. However, the results of this study are in line when compared with research by Azizah et al., (2022); Barumun et al., (2020), which shows that the average student learning motivation is in the excellent category at 78.42% and 80.62%, respectively.

The overall average student mathematics learning motivation in this study was 3.89, including the excellent category; this statement is in line with the findings made by Cahyadi & Roesdiana, (2022); Julia & Siahaan, (2022), where students have good learning motivation with an average of the averages are 3.04 and 3.62 respectively.

The condition of students' mathematics learning motivation after COVID-19 in this study was very good based on intrinsic and extrinsic indicators, assignment value, control confidence during learning, self-confidence, and anxiety during tests. This aligns with research conducted by

Indah et al. (2022); Susilowati & Prihatini (2023), who found high student learning motivation based on the indicators. However, this research differs from the results of a study by Iqbal et al., (2021), which shows that the condition of mathematics learning motivation during the pandemic is sufficient based on learning motivation indicators.

Then, the highest indicator of motivation to learn mathematics in the excellent category is the assignment value indicator, with an average of 4.09. These results align with research by Cahyadi & Roesdiana (2022), who found that the task value indicator with an average of 3.80 is among the highest indicators in the excellent category for learning motivation. However, these results differ from research conducted by Murtiyasa & Amini (2021), which shows that the highest average in the good category is the anxiety indicator during the test, which is 3.99.

## CONCLUSION

Based on the research results, it can be concluded that the motivation to learn mathematics after the COVID-19 pandemic for class VII students at SMPN 1 Bangsal is in the high category, with a percentage of 73%. This is related to the fulfillment of 5 indicators, namely intrinsic and extrinsic orientation goals, which obtained an average of 4.03 in the very good category, task scores received an average of 4.09 in the very good category, control beliefs for learning obtained an average of 3.80 is in the good category, self-confidence gets an average of 3.83 in the good category, and test anxiety receives an average of 3.68 in the good category.

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