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Student's motivation level during online learning in junior high school

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ABSTRACT

The learning process of all students around the world has undergone drastic changes due to the COVID-19 pandemic. School R handles it like most other schools, by distance learning through online learning. This change may cause students to feel unmotivated in studying compared to face-to-face learning. The purpose of this study was to measure the level of motivation of grade VI students in school R in Mathematics. The research method uses the Motivation Questionnaire (MQ) questionnaire. MQ adopts indicators from the Motivated Strategies for Learning Questionnaire (MSLQ). After the MSLQ was analyzed and edited, the MQ instrument was designed to suit the sixth-grade students of R school. The results of the study showed that more than 50% of students scored lower than the average score in the value and expectancy components, and more than 50% of students scored higher than the average score in the affective component. Test-retest was conducted to analyze the reliability by analyzing the Pearson Correlation Coefficient and the result was 0.771. This indicates that the correlation between test-retest results is strong. The results of the Cronbach alpha analysis for the MQ of each sample from the test-retest were 0.888 and 0.911, indicating strong internal consistency. The validity of the questionnaire study uses peer review and expert judgment. In conclusion, the level of motivation of the research subjects tends to be low. One suggestion to overcome this problem is a greater involvement of the role of educators. Educators must strive to be creative in teaching, increase interaction with students and respond quickly. In addition to educators, parents and educational organizations can also provide more support to increase students' motivation in learning.

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Introduction

The word "motivation" originated from the term a Latin word "*movere*" which means "to move". Motivation is the force that causes people to behave in a particular way. According to Schunk (2014), motivation can also be described as an energized internal state that results in goal-directed behavior. The role of motivation in learning plays a big role in the outcome of learning. Given the fact that academic success is strongly influenced by differences in individual motivations, educators should continue to define and exchange ideas for specific strategies used in teaching (Komaraju, 2009).

Since the onset of the COVID-19 pandemic worsened in March 2020, Indonesian students were forced to undergo distance learning. With the drastic changes in learning conditions, the motivation of students to learn may inevitably change. In academic year 2020-2021, there are 49 R school students who are taking sixth grade elementary school. Distance learning is carried out online in the midst of this pandemic condition, while they will undertake elementary school graduation exams and Cambridge Checkpoint. Because this academic year is a crucial period for grade VI students, it is important to measure motivation to determine student motivation by improving the quality of distance learning via online learning during the pandemic season.

The downside of distance learning is students have no direct interaction with educators and peers. When undergoing online classes, student motivations are varied, situational and complex. This is because student motivation consists of various combinations of motivation: extrinsic motivation and intrinsic motivation, which depend on the nature of the activities in which they are involved and certain environmental factors support student motivation in some cases and undermine it in others (Hartnett, 2016).

Research results from Zaccoletti (2020) have shown that a decrease in student participation in extracurricular activities is associated with changes in academic motivation. Students with a lower decrease in participation in extracurricular activities also experience a lower decrease in motivation (Zaccoletti, 2020). This worries parents as well as educators. Distance learning disrupts the lives of elementary school students and their parents and results in a 10.8% increase in parental anxiety (Tirajoh, 2021).

To overcome the existing problems, this study was conducted to find out how the motivation of class VI students in school R, especially in the subject of Mathematics, where the researcher taught the subject. In addition, this study acts as an investigation to find out what factors are significant in the level of motivation of the sixth-grade students.

The purpose of this study was to measure the level of student motivation in Mathematics lessons at school R during online learning. From the results of this motivation measurement research, it can be seen which motivation indicators are the highest and lowest compared to other indicators. This research will be useful for educators and schools as educational organizations so that they can find out the condition of students' motivation in online learning classes. If the results of this study indicate that the level of student motivation is low, then these results will encourage educators to motivate students to design creative and innovative learning. Educators and schools will have to place more efforts to increase student motivation in online learning.

Duncan (2015) attempted to summarize a way of measuring motivation based on three general aspects of motivation: expectancy, value, and affective. In the value aspect, there are 3 sub-indicators, namely: intrinsic value, extrinsic value, and task value. Under the aspect of expectancy, there are 2 parts: control of beliefs of learning and self-efficacy. This is similar to the theory from Eccles (2005) and also summarized in Dale's book (2014). In addition to the value and expectancy components, there is one motivational component, namely, affect. This third common motivational construct, affect, has been operationalized in terms of responses to a test anxiety scale, which harnesses students' concerns and concerns during exam taking (Duncan, 2005). This affective component has been shown to influence motivation (Erez, 2002). Erez (2002) states that the effect of positive affect on motivation occurs not through a general effect, but through its influence on the cognitive processes involved in motivation. This affective component is often associated with the self-efficacy component, because it is considered to be related to self-worth or self-esteem. However, Chen (2004) stated that a person's self-esteem is more related to affective variables than self-efficacy.

It should be noted that the affective component is the opposite of the first and second components, namely value and expectancy. When we want to measure the motivational component of value and expectancy, the higher the score of both components means the high level of motivation. Conversely, when we want to measure the affective motivation component, the higher the score of this third component, the lower the level of motivation.

Method

The population of School R is 231 students in elementary school class I to class VI. The sample used is grade VI students. At the beginning of the school year (June 2020), R School had 55 students in grade VI. However, due to the COVID-19 pandemic, 6 students left in the middle of the school year to return to their home countries. The remaining class VI students become 50 students at the end of the semester this school year. The research subject involved 49 sixth grade students at School R. Of the 49 sixth grade students in School R, 24 students (49%) were boys and 25 students (51%) were girls. Then, 32 students (65%) are Indonesian citizens (WNI), while 17 students (35%) are foreign citizens (WNA). Class VI students with foreigner status come from Japan, Korea, Singapore, and Malaysia. The age of class VI students ranged from 11 years to 13 years.

The main objective of this study was to measure the level of motivation of grade VI students in school R in the Mathematics subject taught by the researcher. The instrument used uses motivation indicators that are in accordance with the theoretical basis of motivation and adapted from the MSLQ. According to Rotgans (2010), MSLQ is an instrument that is widely used to measure student motivation and learning strategies at a specific level. In his research, the MSLQ was slightly modified and given to high school students who had just graduated as many as 1,666 students in Singapore. The construct and predictive validity of the instrument were determined using confirmatory factor analysis and by relating the individual subscales of the instrument to the overall semester score. The results showed that the modified MSLQ was a reliable and valid instrument for determining students' motivational beliefs and learning strategies at the general curriculum level.

This study used a questionnaire adapted from the Motivated Strategies for Learning Questionnaire (MSLQ) designed by Paul R. Pintrich and reviewed by Teresa Duncan (2015). Duncan (2015) states that the MSLQ addresses the nature of motivation and the use of learning strategies across different types of content areas and target populations. In addition, MSLQ helps refine our theoretical understanding of motivational constructs, how they differ from one another, and what individual differences exist in self-directed learning, and evaluates the motivational and cognitive effects of various aspects of teaching. However, this study focused only on the motivation of grade VI students, so the components of the MSLQ were not fully used. This study measures motivation, so the statements used are only those that match the motivation indicators and do not include statements and indicators of learning strategies (strategies for learning).

According to Motivated Strategies for Learning Questionnaire (MSLQ) (Duncan, 2015), the value component focuses on the reasons students are involved in academic assignments, and the score scale included in the MQ is based on the theory of attainment goals and the theory of value expectations. Three subscales within values for measuring value beliefs: intrinsic goal orientation (focus on learning and mastery); extrinsic goal orientation (focus on values and approval of others); and confidence in the value of the assignment (an assessment of how interesting, useful, and important the course content is to students. The third component of the motivation indicator is affective or influence and this indicator finds out the scale of test anxiety experienced by students by measuring students' concerns and attention during taking the exam and this indicator is measured in reverse. If the value of this indicator is high, it will be more worrying. The motivational indicators of the three motivational components in the study are also summarized in Table 1. In accordance with the theoretical basis, to measure motivation in a study, these indicators will be tested on research subjects (Table 1).

Table 1 <Components and Indicators of Motivation>

No.	Motivation Components	Motivation Indicators	No. of questions	Question numbers
1	Value	Intrinsic Value	9	No. 1-9
2		Extrinsic Value	4	No. 10-13
3		Task Value	6	No. 14-19
4	Expectancy	Control of Learning Beliefs	4	No. 20-23
5		Self-Efficacy	9	No. 24-32
6	Affective	Task Anxiety	5	No. 33-37

The adapted questionnaire is now called the Motivation Questionnaire (MQ). The questions in the MQ research instrument are 37 items with 6 motivation indicators. Then this questionnaire was converted to Google Form to make it easier for grade VI students to answer it and for researchers to collect the data with Google Sheets. This MQ instrument can be seen and accessed via this link: https://forms.gle/M99QFsWfBFTgDPos9

This MQ instrument uses a 5-point Likert scale, not the 7-point Likert scale used by Pintrich (1990); Duncan (2005). The reason is that considering the age of grade VI students who are still young and their young age will not be able to distinguish the difference between the wider choices on a Likert scale of 1 to 7. Thus, the Likert Scale of 1 to 5 scale used in this study comprises of 1 - Strongly Disagree, 2 – Disagree, 3 – Neither Disagree nor Agree (Neutral), 4 – Agree and 5 – Strongly Agree.

Results and Discussions

The responses and results of 49 grade VI students for each MQ item are presented in Figure 1 below. Figure 1 shows each result from the score of 49 grade VI students for the three components of the indicator value, efficacy, and affective through a bar-graph.

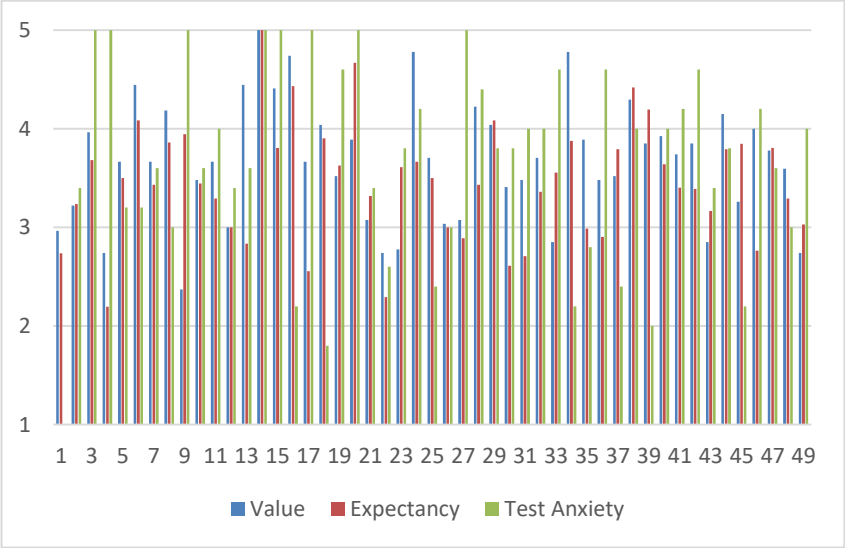

Figure 1 <MQ results of 49 grade VI students>

The results of the average score of students in the bottom 25% have below average motivation. Then, the results of the average score of students in the middle 50% have the moderate motivation and the results of the average score of students in the top 25% have above-average motivation. So, with the lowest student score of 49.7% and the highest 89.2% with a range of 39.5%, the interpretation of the frequency distribution of the students' average score is divided into 3 parts, the lowest 25% (40.0% - 52, 5%), the middle 50% (52.5% - 77.5%) and the highest 25% (77.5% - 90%). The interpretation of the frequency distribution is illustrated in Figure 2.

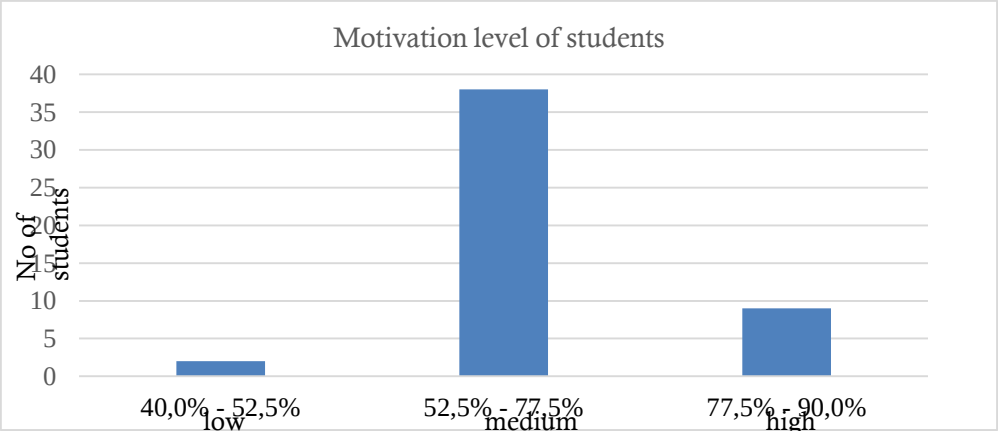

Figure 2 <Frequency Distribution of Students' Average Score Results>

Figure 2 shows that 2 students have a low level of motivation, 38 students have a moderate level of motivation and 9 students have a high level of motivation. However, these results do not describe the motivational level results that are too detailed for 49 students. Of the 38 students who have a moderate level of motivation, it must be studied more deeply by comparing the results of each student's score with the student's average score.

The Likert scale of the MQ is based on a five-point scale. In general, higher scores such as 3, 4, 5 are better than lower scores such as 1 or 2. The class average score is taken as the benchmark. If a student's score is more than the average, then that student is considered more motivated than other students. Conversely, if the score is lower than the average, then the student is considered less motivated when compared to other students.

The score results from this raw data will be processed and analyzed to get the average per indicator. In this study, the results of 49 respondents were analyzed by means of an analysis of the mean. The results are summarized for each of the 6 indicators in Table 2. For each indicator, the results of the average score and standard deviation

will be used as a reference for each student and will perform a frequency analysis to calculate how many students score above and below the average.

Table 2 <Analysis of the Average Results for Each Indicator of MQ>

No.	Motivation Indicators	Average	Standard Deviation
1	Intrinsic Value	3,7	0,9
2	Extrinsic Value	3,9	1,1
3	Task Value	3,7	1,0
4	Control of Learning Beliefs	3,9	0,9
5	Self-Efficacy	3,0	1,0
6	Task Anxiety	3,7	1,2

Table 2 shows that the 37 MQ motivation items have a mean score between 3.0 and 3.9 with a standard deviation between 0.9 and 1.1. When considering the six categories of MQ Motivation, the results of extrinsic value and control of learning beliefs were proven to be the highest by 49 grade VI students in school R with an average score of 3.9 for both indicators. Meanwhile, the results of self-efficacy were proven to be the lowest by 49 grade VI students in school R with an average score of 3.0 for this indicator.

Duncan (2005) states that the expectancy component refers to students' beliefs that they can complete the task, and two subscales of expectancy are directed at assessing perceived self-efficacy and control beliefs for learning. Our definition and measurement of self-efficacy are slightly broader than other measures because expectations for success (which are specific to task performance) and assessments of one's ability to complete a task and confidence in one's skills to perform the task are included. general term self-efficacy.

In addition, students' perceptions of control over their achievement outcomes were a measure; Control beliefs for learning refer to students' beliefs that results depend on one's own efforts, not external factors such as teachers or luck. Self-efficacy and intrinsic value are positively related to cognitive engagement and performance. Regression analysis revealed that, depending on the outcome measure, self-regulation, self-efficacy, and test anxiety emerged as the best predictors of performance. Intrinsic value (intrinsic value does not have a direct influence on performance but is strongly related to self-regulation and use of cognitive strategies, regardless of the previous level of achievement (Duncan, 2015)

The results of the average score of indicators for each motivation component are 3.74 for the value component (the average score of the indicators 1, 2, and 3), 3.46 for the expectancy component (the average score of the indicators 4 and 5), and 3.67 for the affective component (mean score of indicator 6). Then the results of the data from the responses of 49 sixth grade students for each MQ item were analyzed by calculating the number and percentage of students who had scores above and below the average. The results of this data analysis are shown in Table 3.

Table 3 <Analysis of MQ Results for the Three Motivational Components (Value, Expectancy and Affect)>

Value Components		
	No. of students	%
Above average	21	42.86
Below average	28	57.14
Above 3	41	83.67
Below 3	8	16.33
Expectancy Components		
	No. of students	%
Above average	24	48.98
Below average	25	51.02
Above 3	38	77.55
Below 3	11	22.45

Affective Components		
	No. of students	%
Above average	27	55.10
Below average	22	44.90
Above 3	39	79.59
Below 3	10	20.41

From Table 3, the results of data analysis show that 42.86% of the sixth-grade students are above the average score and 57.14% are below the average score in the value component. Then, the results of data analysis showed that 48.98% of the sixth-grade students were above the average score and 51.02% were below the average score in the expectancy component. For the third component, namely the affective component, 55.10% of the sixth-grade students were above the average score and 44.90% were below the average score.

Similar to the research of Rotgans (2010), the MQ instrument used in this study, which was adapted from the MSLQ, was also adapted and structured in such a way as to be appropriate and appropriate for the research sample. The results showed that both research hypotheses were proven, namely more than 50% of students scored lower than the average score in the value and expectancy components (57.14% and 51.02%), and more than 50% of students got higher scores. of the average score in the affective component (55.10 %). Although the results of this data analysis support both hypotheses, the data results are not significantly above the given threshold. Further research needs to be carried out to confirm this hypothesis again.

The results of this study are in line with the results of qualitative analysis research regarding student comments (Meeter, 2020). In the analysis, it was found that students missed social interaction, despite feeling much more efficient during online education. It was concluded that student motivation decreased during the transition to online education.

Shroff (2007) states that intrinsic motivation has been identified as an important characteristic of online learning. So, it is also good for parents, educators, and educational organizations to see how to increase the intrinsic value in each student. Although that has been said, many have also argued and underlined the need for further research and a greater understanding of the complexities of factors influencing motivation to learn in an online context.

In addition, the results of the MQ analysis used by grade VI students produced some interesting findings. The high scores of Extrinsic Value and Control of Learning among other components reflect that:

- Extrinsic Value: Rewards or other incentives such as praise, gifts are a form of motivation that can be used. This is in line with the view of behaviorism.
- Control of Learning: Students believe and hope that learning efforts will produce positive results.

This finding is similar to the results of research from Stoffa (2011), where the Control of Learning score of the research subject (Korean students) is the highest among other components. So, students tend to believe that they have to work hard in learning to get the desired results and goals.

The findings in this study resulted in the lowest self-efficacy scores among the other components. This suggests that students are less likely to believe in their own capacity to achieve their goals. This finding is in accordance with previous findings that students' belief is that efforts in learning will produce good results and external factors in the form of extrinsic values that motivate students more. This also indicates that they rely on the support of others such as parents and teachers to help them to be more motivated in learning.

This MQ instrument was given to 49 sixth grade students twice to test the reliability of this questionnaire through test and retest. When the researcher retested in giving MQ to 49 grade VI students, there were concerns and predictions that the average score in the value and expectancy components decreased significantly and indicated the level of motivation of these students decreased. For the affective component, it is estimated that the retest results will increase. This is because grade VI students go through a series of major exams, namely the Preliminary exam and Cambridge Checkpoint before filling out the MQ questionnaire for the second time. These exams are important and crucial for grade VI students and it is natural for them to feel test anxiety levels are higher or more unmotivated. There were some students who complained that they were stressed and not enthusiastic about participating in online learning. There were also some students who did not go to school at all after the series of exams. However, the Pearson correlation coefficient for the data from the initial test and the second retest was 0.771. These results indicate that the correlation between test results and

retest is strong. The findings also suggest that external factors such as taking exams do not affect students' motivation levels and the way students motivate themselves.

Conclusions

The conclusion of this study is that the level of motivation of grade VI students at school R in distance learning through online learning during this pandemic tends to be low. This study contributes to the existing educational research literature by supporting previous research.

The factor that can increase students' motivation is extrinsic motivation as one of the external factors and the most that can be implemented is through educators, leaders of educational organizations. Educators need to re-examine the practice and behavior of educators to increase students' motivation, especially during this pandemic. This is absolute because the role of educators is very large in motivating students. Here are some suggestions for educators and others to increase student motivation in learning.

The speed of educators in responding to students has an impact on the level of student motivation. Students who started the semester with low or moderate learning motivation were found to have increased levels of motivation at the end of the semester when faced with a very close educator (Frymier, 1993). So, educators must be active and try hard to interact more with students with a fast response rate, even though they undergo online learning during this pandemic. Especially for the unique conditions of this pandemic, educators must be more creative in carrying out learning so that students are motivated, not bored, and excited in learning through online learning.

Apart from educators, parents and educational organizations can also provide more support to students so that they are more motivated in learning. As previously discussed in the discussion, although the results of this data analysis support both hypotheses, the data results are actually not significantly above the given threshold. So, the next step that needs to be done is to multiply studies like this one to confirm this hypothesis again. The recommendation from the end of this research is that there should be more valid and reliable research results on motivation in order to get a bigger, more precise and complete picture of motivation.

In the future, this research can provide direction for educational research on motivation. Researchers can compare students' motivation during and after the pandemic to find out whether the pandemic really decrease the students' motivation. In addition, this research can be used as study material for other researchers in developing students' learning motivation in online learning.

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