

SELF-EFFICACY OF JUNIOR HIGH SCHOOL STUDENTS IN ONLINE LEARNING

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Abstract

The purpose of this study was to see how students' self-efficacy towards the online learning process of mathematics subjects during the covid-19 outbreak. This study is a descriptive study that describes students' self-efficacy in mathematics subjects based on the dimensions that exist in self-efficacy and is summarized and used as a measurement tool or instrument, namely level (magnitude) related to task difficulty, strength related to the effort made by students and generality relates to the scope of students' beliefs. The instrument used is a non-test in the form of a self-efficacy questionnaire consisting of 30 statement items with 4 choices and 616 respondents from SMP/MTs students who carry out online learning. The result is that the level dimensions of Indonesian SMP/MTs students are in the medium category with a percentage of 55.04% which means that when students are faced with difficult tasks during online learning, students can overcome them. For the strength dimension, it is in the medium category with a percentage of 56.82%, this shows that the effort and resilience of Indonesian SMP/MTs students in doing assignments in online learning is quite persistent and does not give up easily. For the generality dimension, it is in the medium category with a percentage of 45.94%, which means that the confidence of Indonesian SMP/MTs students in completing different tasks is quite good. In general, the self-efficacy of Indonesian SMP/MTs students in online learning is quite good.

Keywords: Online learning; self-efficacy.

Abstrak

Tujuan penelitian ini untuk melihat bagaimana self-efficacy siswa terhadap proses pembelajaran online mata pelajaran matematika ditengah wabah covid-19. Penelitian ini merupakan penelitian deskriptif yang mendeskripsikan self-efficacy siswa pada mata pelajaran matematika berdasarkan dimensi yang ada dalam self-efficacy dan dirangkum serta digunakan sebagai alat pengukuran atau instrumen yaitu level (magnitude) berkaitan dengan kesulitan tugas, strength berkaitan dengan usaha yang dilakukan siswa dan generality berkaitan dengan ruang lingkup keyakinan siswa. Instrumen yang digunakan adalah non tes berupa angket self-efficacy yang terdiri dari 30 butir pernyataan dengan 4 alternatif pilihan serta 616 responden dari siswa SMP/MTs yang melaksanakan pembelajaran online. Hasilnya dimensi level siswa SMP/MTs Indonesia berada pada kategori sedang dengan persentase 55,04% yang berarti ketika siswa dihadapkan dengan tugas yang sulit pada saat pembelajaran online, siswa mampu mengatasinya. Untuk dimensi strength masuk dalam kategori sedang dengan persentase 56,82%, hal tersebut menunjukkan bahwa usaha serta ketahanan siswa SMP/MTs Indonesia dalam mengerjakan tugas pada pembelajaran online cukup gigih dan tidak mudah menyerah. Untuk dimensi generality masuk dalam kategori sedang dengan persentase 45,94% yang berarti keyakinan siswa SMP/MTs Indonesia dalam menyelesaikan tugas yang berbeda-beda cukup baik. Secara umum self-efficacy siswa SMP/MTs Indonesia pada pembelajaran online cukup baik.

Kata kunci: Pembelajaran online; self-efficacy.



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INTRODUCTION

In early 2020 the world was shocked by an outbreak of a disease in the form of a coronavirus or commonly known as covid-19. Indonesia is one of the countries affected by Covid-19, even now there is an increase in cases every day. The existence of Covid-19, it has had a bad impact in various sectors such as health, economy, and education, even education is the sector most affected (Purwanto et al., 2020). The direct impact is felt on the education sector with the implementation of online schools (in the network), teaching, and learning activities carried out in their respective homes by utilizing technology. The use of technology allows teaching and learning activities to occur even though they are in different places (Milman, 2015). The technology device used must be able to access information anytime and anywhere, such as cellphones, tablets, laptops, and other devices (Gikas & Grant, 2013). Learning from home is not only practiced in Indonesia, other countries exposed to Covid-19 are also doing it. Based on UNESCO data there are 290.5 million students worldwide who have to learn from home.

Learning from home which is implemented by every school in Indonesia results in students getting used to learning online, learning methods are online an alternative that can be used in the current situation (Wang et al., 2020). Learning Online refers to an instructional environment supported by the Internet (Bakia et al., 2012). Online learning consists of a variety of programs that use the Internet that can facilitate interaction between teachers and students. Learning Online is a method that can be used in distance learning. This is also said by Nguyen (2015) that online learning is a form of

distance learning or distance education delivered via the internet, by utilizing the internet network, learning online can bring about various types of learning interactions and flexibility (Moore et al., 2011). Learning Online is not new, this method has been used since the 1990s (Jeong in Handayani, 2020). In its implementation, learning online involves various kinds of media such as using the WhatsApp application (So, 2016), social media in the form of Instagram and Facebook (Kumar & Nanda, 2019) as well as virtual classes using the service Zoom, Google Meet, Google Classroom, Schoology, and Edmodo.

Learning Online involves the roles of various parties such as teachers, students, and student guardians. However, both teachers and students have difficulty adapting to learning online (Handayani, 2020) and even teachers in various regions are not yet proficient in using internet technology or social media (Purwanto et al., 2020). Another obstacle that must be faced in learning online is the availability of internet services, both teachers and students have to spend money to buy learning support data packages (Firman & Rahayu, 2020). Firman and Rahayu also said that learning online allows abuse and use of gadgets excessive, which raises concerns for students who do not pay attention to learning and are exposed to wrong information (Siddiqui & Singh, 2016). In learning the online teacher cannot directly monitor what students are doing, so the teacher will find it difficult to see students who focus and pay attention when learning. Thus it is recommended that learning online is no more than one hour because students will find it difficult to maintain their concentration if it is more than that (Greenhalgh-Spencer, 2014).

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Of the various kinds of obstacles to learning online described above, how are students' attitudes towards their ability to understand and solve math problems? Students' confidence in their abilities is one of the components in the affective domain of mathematics learning called self-efficacy. Bandura (2009) says that self-efficacy as a person's belief about their abilities results in a defined level of performance that influences activities and influences their 'life'. In line with Bandura, Bilgin et al., also said that self-efficacy is an individual's judgment about what to do and how much they can do to solve a problem that might occur (Bilgin et al., 2015). Self-efficacy has its influence on a person's life activities. Measurement of self-efficacy students can be summarized into three dimensions, namely: 1) Level (magnitude); 2) Strength; and 3) Generality (Zimmerman, 2000).

The level dimension is a dimension related to task difficulty. The difficulty of the given mathematics task affects the level of self-efficacy student, whether the student's self-confidence is limited to easy tasks, medium tasks, or even the most difficult tasks. The dimension strength relates to the effort made by students. The amount of effort made by students affects the level of resilience and resilience in completing assignments so that in the end it affects the level of self-efficacy of a student, whether students have low, medium, or high resilience when students try to complete math assignments. The dimension generality relates to the scope of students' beliefs in completing math tasks. A student can have high confidence in completing assignments in certain fields, but do not have sufficient confidence in completing tasks in other fields.

The purpose of this study was to see how self-efficacy of students towards the learning process online amid the Covid-19 outbreak. By applying learning online to mathematics material can cause student anxiety (Maloney & Beilock, 2012) this is because students tend to consume limited cognitive resources and there are various kinds of disorders. Alqurashi (2016) also states that the role of self-efficacy in learning environment online still requires further investigation, especially on several aspects. The aspects referred to in this study are the dimensions of level, strength, and generality.

METHOD

This research is a descriptive study that aims to determine the self-efficacy of students in learning mathematics online. In self-efficacy, 3 dimensions can be summarized and used as a measurement tool or instrument, namely the level (magnitude) related to task difficulty, strength related to the effort made by students, and gender-related to the scope of student beliefs. The instrument used was a non-test in the form of a questionnaire self-efficacy consisting of 30 statements with 4 choices. There are 15 items of positive statements and 15 items of negative statements with the choice score being the opposite of the score on the positive statement. Grains such statement is based on indicator self-efficacy with 3 dimensions, for dimension level, there are 10 items, dimensions strength contained 12 grains and dimension generality are 8 points.

The population in this study were Indonesian SMP/MTs students who are currently doing online schooling due to the covid-19 pandemic, the research sample was SMP/MTs students who

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were doing online learning on mathematics subjects and were selected using a simple random sampling technique, which is a sampling technique that provides equal opportunity for all members of the population to be assigned as members of the sample. Determination of the number of samples using the Slovin formula with an error tolerance limit of 0.05, based on this formula a minimum of 400 students must be used. Data was collected by distributing questionnaires on google form and then analyzed by categorizing each dimension according to the following formula:

$$M_i = \frac{\text{Maksimum score} + \text{Minimum score}}{2} \quad (1)$$

$$S_{di} = \frac{\text{Maksimum score} - \text{Minimum score}}{6} \quad (2)$$

Description:

Mi: Ideal Average

Sdi: Standard Deviation

To see the self-efficacy category, consider Table 1.

Table 1. The category of self-efficacy

Interval	Criteria
$M_i + 1,5 \text{ sdi} < M$	Very High
$M_i + 0,5 \text{ sdi} < M \leq M_i + 1,5 \text{ sdi}$	Hight
$M_i - 0,5 \text{ sdi} < M \leq M_i + 0,5 \text{ sdi}$	Medium
$M_i - 1,5 \text{ sdi} < M \leq M_i - 0,5 \text{ sdi}$	Low
$M \leq M_i - 1,5 \text{ sdi}$	Very Low

(Azwar, 2017)

Each dimension is calculated based on the formulas and criteria in table 1, then these dimensions are explained and described so that the results obtained of self-efficacy are a student during online learning.

RESULTS AND DISCUSSION

Questionnaires are distributed throughout SMP / MTs in Indonesia,

especially in schools that carry out online learning, 616 students are filling out questionnaires where the number exceeds the minimum limit that has been determined. Based on the questionnaire that has been distributed, there is a choice of platforms used in the online learning process, namely learning management system, video conference, video service, and chat application. The most widely used platforms are learning management system in the form of Google Classroom, Schoology, Moodle, Edmodo, e-learning schools, and others. The use of a learning management system in the online learning process is considered easier because the features in it can support the assignment, material, or evaluation questions also all of these things can be loaded in one platform so that both teachers and students can access easily. Bogdanović et al., (2014) also said that a learning management system is one of the most frequently used platforms as a solution in online learning.

The questionnaires that have been filled by students are processed to see the self-efficacy of learning online in math subjects. The data were analyzed to see how students' self-efficacy in each dimension, ranging from level dimensions, strength to generality. For level dimension results with 4 positive statements and 6 negative statements can be seen in Table 2.

Table 2. categories self-efficacy level dimensions

Criteria	Interval	Freq.	Percentage
Very high	$35,5 < \bar{M}$	2	0,32%
Hight	$27,5 < \bar{M} \leq 35,5$	176	28,57%
Medium	$22,5 < \bar{M} \leq 27,5$	339	55,04%
Low	$17,5 < \bar{M} \leq 22,5$	96	15,58%
Very low	$\bar{M} \leq 17,5$	3	0,49%
Total		616	100%

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Based on Table 2, in general, the self-efficacy of students who carry out learning online at the level dimension falls into the medium category with a percentage of 55.04%. This means that when students are faced with difficult assignments during learning online, students can overcome them. In principle, when students are in the medium category in the level dimension, it means that students do not easily give up and give up on tasks that are done even though it is difficult, but students will give up if they have done it and do not succeed in completing it (Sunaryo, 2017).

For the results of the dimension strength with 5 positive statements and 3 negative statements, it can be seen in Table 3.

Table 3. Categories self-efficacy strength dimensions

Criteria	Interval	Freq.	Percentage
Very high	$26 < \bar{M}$	25	4,06%
Hight	$22 < \bar{M} \leq 26$	126	20,45%
Medium	$18 < \bar{M} \leq 22$	350	56,82%
Low	$14 < \bar{M} \leq 18$	108	17,53%
Very low	$\bar{M} \leq 14$	7	1,14%
Total		616	616

Basen on the data in Table 3, in general, the self-efficacy of students who carry out learning online on the dimension stress falls into the medium category with a percentage of 56.82%. The dimension of strength that falls into the medium category means that it shows the effort and resilience of students in doing assignments. Thus students in the moderate category are quite persistent in completing assignments even though they do not have the supporting experience, in this case, students are quite optimistic about doing assignments (Sunaryo, 2017).

For the results of the dimension generality with 6 positive statements

and 6 negative statements, it can be seen Table 4.

Table 4. Categories self-efficacy generality dimensions

Criteria	Interval	Freq.	Percentage
Very high	$39 < \bar{M}$	25	4,06%
Hight	$33 < \bar{M} \leq 39$	126	20,45%
Medium	$27 < \bar{M} \leq 33$	350	56,82%
Low	$21 < \bar{M} \leq 27$	108	17,53%
Very low	$\bar{M} \leq 21$	7	1,14%
Total		616	616

From the data in Table 4, in general, the self-efficacy of students who carry out learning online on the dimension generality falls into the medium category with a percentage of 45.94%. This means that students' confidence in completing different tasks is quite good. Students in the moderate category in the dimension generality try to complete different tasks but have not been able to complete them properly (Sunaryo, 2017).

In the next step, the data is analyzed to see how self-efficacy of students who take learning online in its entirety without dividing it into each dimension. Following are the results of the questionnaire analysis with 15 positive statements and 15 negative statements. It can be seen in Table 5.

Table 5. Categories self-efficacy

Criteria	Interval	Freq.	Percentage
Very high	$97,5 < \bar{M}$	25	4,06%
Hight	$82,5 < \bar{M} \leq 97,5$	126	20,45%
Medium	$67,5 < \bar{M} \leq 82,5$	350	56,82%
Low	$52,5 < \bar{M} \leq 67,5$	108	17,53%
Very low	$\bar{M} \leq 52,2$	7	1,14%
Total		616	616

From the data in Table 5, in general, the self-efficacy of Indonesian SMP / MTs students who carry out learning online in mathematics is in the

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moderate category indicated by the largest percentage, namely 53.73%. This means that students have self-efficacy good enough even though learning is implemented online.

Self-efficacy Sufficient student indicates that learning online is not too bad to implement. By implementing learning online provides several benefits such as facilitating each student's learning style (Wardani et al., 2018). Students with audio, visual, and kinesthetic learning styles can get knowledge according to their learning styles by involving the internet and the use of learning management system and video applications. Learning online that implements the use of video applications also has a good influence on the learning process, involving and utilizing video can serve as a powerful teaching tool (Hansch et al., 2015) be it videos from YouTube or videos made by teachers themselves. By applying to learn online that can be accessed anytime and anywhere, it makes it easier for students to learn by adapting to conditions and situations or being more flexible (Moore et al., 2011).

CONCLUSION AND SUGGESTION

Self-efficacy is a belief in a person's ability to complete a task which can be seen in 3 dimensions, namely the dimensions of level, strength, and generality. In the results of this study, the dimensions of the level of Indonesian SMP / MTs students are in the medium category with a percentage of 55.04% which means that when students are faced with difficult tasks during learning online, students can overcome them. The dimension strength is in the medium category with a percentage of 56.82%, this shows that the efforts and resilience of Indonesian SMP / MTs students in doing

assignments in learning are online quite persistent and do not give up easily. The dimension generality is in the medium category with a percentage of 45.94%, which means that Indonesian SMP / MTs students' confidence in completing different tasks is quite good. In general, the self-efficacy of Indonesian SMP / MTs students in learning online is quite good, this indicates that learning online is not too bad to be implemented with the help of more supportive learning facilities and facilities.

In taking more time data prepared to get the maximum data, the questionnaire items used can be summarized so that respondents do not mind filling out the questionnaire. In the future, student self-efficacy research can also be carried out during face-to-face learning in mathematics

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