

## Effectiveness of Self-Efficiency on Mathematic Learning annivers

Risma Uly Manalu<sup>1</sup>, Melda Rumia Rosmery Simorangkir<sup>2</sup>

<sup>1,2</sup>Universitas Kristen Indonesia, Jakarta – Indonesia

**Abstract:** This study aims to measure the effectiveness of self-efficacy material on learning anxiety of junior high school students, on mathematics subjects during the COVID 19 pandemic. A total of 19 students were involved in the questionnaire, 2 mathematics teachers and 2 guidance and counseling teachers. The research method used is qualitative with a descriptive approach by conducting questionnaires, interviews and documentation. The results showed that the self-efficacy provided by guidance and counseling teachers was able to make students control the level of anxiety about mathematics subjects during home learning conducted online during the COVID 19 pandemic. Furthermore, anxiety towards mathematics in students can be controlled and has an impact on test scores. middle semester II students. The value obtained has increased after receiving material and personal guidance about self-efficacy. This will certainly help students to be able to stay focused on achievement even in a pandemic situation due to COVID 19. The findings of this study confirm that mathematics teachers must work together with guidance and counseling teachers to foster self-efficacy in students, especially junior high school students who are currently facing a pandemic. COVID 19.

**Keywords:** Self-efficacy; Student anxiety; Mathematics

### I. Introduction

PISA results through [www.pisaindonesia.wordpress.com](http://www.pisaindonesia.wordpress.com) rank Indonesia for Science 62, Mathematics 63, and Reading 64 from 70 countries. These results have generally improved particularly for Science and Mathematics. In the 2012 PISA, the Science and Mathematics ranking was 64 out of 65 while Reading was 61 out of 65 countries. The mean scores for the 2015 (and 2012) PISA were Science 403 (382), Math 386 (375) and Reading 397 (396). This is not much different from the TIMSS study in Ahmad (2016: 32) which reveals that the achievement of students in Indonesia in mathematics from 1999-2011 "consecutively is 34 from 38 countries, 34 from 45 countries, 36 from 49 countries, and 38 out of 42 countries. Furthermore, the results of the 2007 and 2011 TIMSS analysis show that more than 95% of Indonesian students are only able to reach the intermediate level, while nearly 50% of Taiwanese students are able to reach a high or advanced level. "

As a formal educational institution, schools have a big role in developing students' abilities, one of which is math skills. Mathematics in general is a subject that is less attractive to students from elementary to high school, mathematics is considered a bad and frightening specter for most students. When asked directly to students from elementary to high school their answers to classics, mathematics is difficult according to them. For students especially at the high school level and those who do not like this subject. They think mathematics is boring, tense, requires concentration and this thinking certainly makes them lazy to learn mathematics.

Mathematics itself is closely related to problem solving even in our environment. Zevenbergen (2004) in Himatula (2015: 2) explains that when individuals solve problems, they need the ability to have sufficient understanding and knowledge and have various strategies when facing various problems. The problem-solving abilities of students must be formed in order to be able to build solutions to various everyday problems both in mathematics and in increasingly complex life.

In dealing with mathematics subjects, students are certainly faced with fear and anxiety about failure and are unable to solve the problems given by the teacher. Student self-confidence can be lower with increasingly difficult mathematics and teacher notes so that students are able to complete the assigned task. Guidance and counseling teachers have a big role in building student confidence, the inability of students to mathematics subjects will certainly affect students' confidence in teachers and classmates. This certainly provides a journal for students on mathematics subjects. The anxiety is scared with fear, sweats, and feels uncomfortable when maths comes to class. If the changes are continuous, it will certainly have an impact on students' psychology, even though mathematics itself is not something to be afraid of, but it must be accepted openly as a process in education. Ridwan (2016: 122) explains the factors that cause damage to students do not immediately support if it will affect students psychologically both when learning mathematics itself or adjusting to other subjects. Based on Ridwan's explanation, it is clear that problem solving from subjects must start from simple so that in other subjects students get used to dealing with it well. Even so, mathematics itself is one of the knowledge that cannot be responded to, although there are many that mathematics itself is quite a difficult subject. Hurlock in Maharani (2018: 103) maybe this is because mathematics itself is abstract, mathematics requires the ability to understand concepts so that students are not bored and just bored with mathematics subjects also still occur in students.

In addition to cooperative learning in class in mathematics, it turns out that self-efficacy is also very influential in stabilizing students towards mathematics. As a self-efficacy figure, Bandura (1997) in Gufron, et al (2013: 21) explains that self-efficacy is knowledge about oneself, and this attracting cost to oneself greatly influences individuals to determine an action in an expected effort. In previous research conducted by Gufron et al, (2013) entitled Self-efficacy and mathematics learning outcomes: Meta-analysis. In his research, Gufron explained that students who have efficacy are generally more persistent and effective in facing difficulties and failures, including those related to problems in mathematics. Another study conducted by Yoni (2017) regarding

the measurement of student self-efficacy in mathematics learning found that self-efficacy was the result of students' beliefs, it was found in his research that there was an average total score of the Self-efficacy scale in junior high school 2 Ciamis of 3.07 so it is included in the positive category and will certainly affect the way they answer questions in mathematics.

### **1. Anxiety**

Students' view of mathematics is not always good, many think that mathematics subjects are so complicated, scary and difficult to conquer. Arief and M. Saufi (2013: 89) reveal that the conclusion that can be an important part of understanding mathematics, it cannot be denied that this value can increase because it is very subjective and exists in the individual itself so that it greatly affects understanding of mathematics. The constant anxiety in students will certainly greatly affect their psyche, Jarnawi (2010) in Mutia (2012: 44) that the measurement of students towards mathematics is not necessarily because mathematics is related to calculations, the interaction of educators and students also has a role. large enough towards students. This is because the teacher is a student facilitator. psychoanalysis, representing feelings of fear caused by feelings, memories, memories, and experiences that appear in one's consciousness (Corey, 2012)

In his psychoanalysis, Corey (2012) in Pardodi (2017: 102) reveals that anxiety itself is a manifestation of a great fear caused by memories and experiences that come from the conscious mind. Aminah (2015: 42) also reveals that in fact mathematics itself will be very fun if students are able to relate mathematics to various other knowledge, of course this will help students to apply it without having to feel anxious about mathematics subjects. In the mathematics subject itself, if it is included without feeling anxious, it will certainly be easier to invite students to learn by doing.

Gunarsa (2004) in Linda and Devi (2017: 105) describes several physical symptoms of anxiety, including: 1) restless behavior and difficulty sleeping; 2) muscles become tense in the shoulders, neck and abdomen; 3) changes in breathing rhythm; 4) chin, eyes and jaw contractions. In addition, psychologically, it can also be felt, among others: 1) difficulty in focusing and concentrating; 2) emotions undergo changes; 3) self-confidence has decreased; 4) very obsessed; 5) low self-motivation. In teaching in the classroom, both teachers in the field of study and guidance and counseling teachers should be aware that there are students who experience anxiety about certain subjects, especially mathematics, which require energy and train their thinking and numeracy skills. When physical and psychological symptoms arise in students, the teacher must be ready to immediately help students to be immediately handled gradually by the guidance and counseling teacher to receive individual counseling.

### **2. Manage anxiety**

Anxiety must be managed wisely, some of the symptoms that can be observed in students who are experiencing anxiety Suppri, et al (2013: 284) students look nervous and uneasy when participating in class learning activities, excessive sweating when asked to answer or do something and seen so tense even when their names were called. Such fear can happen to anyone, but that doesn't mean it can't be helped and handled. As stated by Jack and Joseph (2001: 1055) "In practice, then, the approach suggested from the laboratory studies requires that patients develop strategies that enable them to" do something "whenever they are entertaining dysphoric thoughts or are

avoiding necessary or meaningful activities. . This may not be the time to encourage difficult tasks, such as reading a challenging novel. Instead, the goal should simply be to successfully carry out activities, especially ones that lead to pleasure or that prevent displeasure. " In their research, Jack and Joseph revealed that one way to overcome anxiety is to divert attention to interesting things in order to attract the anxiety.

Meanwhile, Cruikshank and Sheffield (1992) in Rossnan (2006: 2) "argued that if teachers fail to implement seven important measures they then cause their students to learn math anxious behaviors. These measures include teachers who: 1) Show that they like mathematics, 2) Make mathematics enjoyable, 3) Show the use of mathematics in careers and everyday life, 4) Adapt instruction to students' interests, 5) Establish short-term and attainable goals, 6) Provide successful activities, 7) Use meaningful methods of teaching so that math makes sense. " Rossnan explained that there are seven steps that teachers can take in overcoming mathematics anxiety in students. Rossnan in his research realized that not all students immediately liked mathematics and these steps really helped students in building confidence in mathematics. Even Lyn and Katherin (1986: 5) revealed that there are six steps that can be taken to successfully deal with anxiety in mathematics, in the sixth step Lyn and Katherin mentioned "begin to think about how valuable math is in your life. It is important for career options, consumer issues, and feelings of comfort around financial matters. " Learning to accept and understand that mathematics is important for the future in building a career will help individuals learn to deal with mathematical difficulties well. In addition, to overcome math anxiety, individuals should recognize what causes their panic so that it can be resolved as best as possible, as expressed by Sheila (1990: 48) "To reduce and eventually overcome math anxiety, we recommend that students learn first to recognize when panic starts, then to identify the static as here as possible, and finally, to clear it up without ceasing to work on the mathematical problem."

### **3. Self-efficacy in Mathematics**

In its implementation, students need self-efficacy in completing mathematics, as expressed by Hackett (1985) in David and Frank (1994: 195) "investigated the effects of math self-efficacy on math anxiety using path analyzes with relationships hypothesized from social cognitive. theory and found that self-efficacy had a strong direct effect. Self-efficacy also had a stronger direct effect on choice of math-related careers than did anxiety and an even stronger total effect. Math self-efficacy was also a stronger predictor of math anxiety than either prior high school math experience or gender. " Hackett in his research revealed that self-efficacy has such a big role in dealing with mathematics anxiety, this effect is so strong and plays a total role in students. Self-efficacy that is well formed will help students stay motivated to continue to focus on achievement.

## **II. Research methods**

The research design is a qualitative method with a descriptive approach. Sugiyono (2008: 9) explains that qualitative research itself is a research based on the philosophy of post positivism, research is intended to examine natural objects, in this study the experiment is the opposite and the researcher himself is the key instrument. Data collection techniques in qualitative, data analysis itself is inductive / qualitative. The results of qualitative research themselves place more emphasis on meaning than generalization. The subjects in this study

were mathematics teachers and class IX students of Mutiara Baru Junior High School Bekasi. The object of this research is the counseling guidance teacher in building student self-efficacy in which it discusses that students are able to have motivation and build good self-confidence in all subjects in class, especially mathematics. In this study, data collection techniques were used using primary data sources, including through questionnaires, observation, interviews, documentation. The informants of this study were mathematics teachers and school counseling teachers.

### III. Results and Discussion

Grade IX students of Mutiara Baru Junior High School Bekasi study mathematics for 12 hours of lessons in one week with a duration of 40 minutes in one hour consisting of 1 parallel class. Eka a math teacher in grade IX explained, not all students like mathematics, but it cannot be denied that today's students are growing rapidly. Mathematical difficulties can be covered by other achievements. However, because they have to deal with math 12 in 1 week, of course they have to learn to face math well. Making mathematics a good friend so that there is no internal conflict between students and their mathematics subject. Based on observations made by researchers at Mutiara Baru Junior High School, it was found that there were 9 students who experienced high anxiety based on the questionnaire questions given, so the results of the questionnaire were as follows:

Table. 1 Questionnaire Assessment Score

No. Item Questions	Score Total			
	4	3	2	1
1.	1	13	9	1
2.	9	12	1	2
3.	0	7	13	4
4.	3	16	4	1
5.	7	10	7	0
6.	7	11	5	1
7.	2	15	6	1
8.	4	11	7	2
9.	7	12	3	1
10.	8	16	0	0
11.	0	11	10	3
12.	3	11	8	2
13.	7	12	3	2

14.	5	15	3	1
15.	8	14	2	0
16.	4	16	4	0
17.	4	15	4	1
18.	7	12	3	2
19.	9	8	6	1
20.	5	14	5	0
21.	2	14	6	2
22.	2	15	4	2
23.	10	12	2	0
24.	7	11	5	1
25.	7	11	6	0
26.	6	6	10	2
27.	0	12	12	0
28.	5	15	4	0
29.	6	11	5	2
30.	5	12	5	2
31.	10	14	0	0
32.	6	12	5	0
33.	9	11	2	2
34.	6	11	7	0
35.	3	12	9	0
36.	6	11	8	0
37.	7	14	3	0
38.	8	11	5	0
39.	4	17	3	0
40.	12	12	0	0
41.	11	9	4	0
42.	12	8	4	0
43.	5	7	8	3
44.	6	8	4	5
45.	5	12	5	2

All questionnaire questions given to students are positive questions. The lower the value given by students, the

lower the self-confidence and efficacy that students have. Through the dimensions of belief and generality, it is found that the results of student self-confidence in the school are low on average, and the ability of students to cope with disappointment is also low. This data is supported by a list of values, so there were 9 students who needed to be called to conduct interviews related to self-efficacy and their anxiety about mathematics.

#### **IV. Conclusion**

The conclusions that can be drawn in the study of managing student anxiety through self-efficacy in mathematics subjects. Based on the research results,

- a. Self-efficacy materials can be recommended to be implemented in junior high schools to reduce student anxiety about mathematics subjects
- b. Self-efficacy materials can be integrated with other programs in schools such as group guidance and classical guidance to get optimal results in an effort to prevent and overcome anxiety in mathematics by collaborating with school guidance and counseling.

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