ISSN 2986-8041
Noumerico Journal of Technology in Mathematics Education
Volume 2 Issue 1, 2024
https://ejournal.uit-lirboyo.ac.id/index.php/noumerico
https://doi.org/10.33367/jtme.v2i1.4207

Analysis of Self-Efficacy Learning Outcomes on Class VII MTSN 01 Pasuruan Viewed Based On Students' Mathematical Ability

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Article Information:
Received August 24, 2023
Revised March 22, 2024
Accepted March 26, 2024

Keyword:
Self-efficacy, Mathematics Learning Outcomes, Mathematical Abilities

Abstract

This study aims to analyze self-efficacy's effect on students' learning outcomes in class VII MTsn 01 Pasuruan. This research is a type of descriptive research with a qualitative approach. The main instruments in this study were researchers, and their supporting instruments were diagnostic tests, self-efficacy questionnaires, assignments, and interview guidelines. The subjects in the study were all students of class VII-A MTs Negeri 1 Pasuruan, with three students being selected: one having a high level of self-efficacy, one having a moderate level of self-efficacy, and one having a low level of self-efficacy. The results of this study indicate that the self-confidence variable and mathematics learning outcomes have a significant positive relationship. This means that the higher students' self-efficacy when doing assignments related to mathematics, the better the results of students' learning mathematics. Conversely, if the students' self-efficacy when doing tasks related to mathematics is lower, the students' mathematics learning outcomes will also be lower.

INTRODUCTION

Education has a vital role in one's life. Education lasts forever; in other words, education will last a lifetime as long as someone discovers new things happening around him. With education, it is hoped that it will become a place for the nation's children to improve and develop their potential by being better. The purpose of education itself is to educate the life of the nation. One thing that needs to be learned in the world of education is mathematics.

According to Hudojo (in Bayu Hari Prasojo & Amir, 2017), mathematics is the science of deductive reasoning and abstract ideas or ideas, both of which are interrelated; according to James and James (in Rahmah, 2018), mathematics studies logic, form, composition, quantity, and relationships between concepts. Mathematics is deductive because it is structured using undefined elements, definitions, axioms, and postulates, with postulates generally valid after being proven true (Russefendi in Rahmah, 2018). From some of the opinions above, mathematics in this study is the science of logic,form, composition, amount, and the relationship between the concepts of numbers and the operational processes used.

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Many advances in science, both in mathematics itself and in other disciplines, are supported by the concept of sets because the concept of sets itself underlies the progress of a field of science—new facts about students' penchant for mathematics. Students are less fond of and less enthusiastic about learning mathematics. Not even a few students complained when learning took place. The primary reason that makes students dislike math is because math is complicated. Several factors make students not try first to work on problems, namely *self-efficacy* in doing things they can do.

According to Ormrod (in Janatin, 2015), self-efficacy assesses a person's ability to engage in certain activities or complete specific tasks. *Self-efficacy* is a belief in the ability to build and show practical actions to overcome specific difficulties well (Ahriana et al., 2016).

Based on the several definitions above, the researcher concludes that *self-efficacy* is the belief or belief that each individual has about their ability to carry out and complete the tasks at hand, under certain conditions, to overcome the challenges or problems faced and achieve specific goals.

Bandura (in Nugrahani, 2013) divides *self-efficacy* into three dimensions: level, *generality,* and *strength*.

a) *Levels* dimension
   This dimension refers to the level of difficulty that individuals believe they will be able to handle. People with high self-efficacy will be confident in their capacity to complete tasks and expend the effort necessary to make their endeavors successful. People with poor self-efficacy, on the other hand, will have low beliefs about every effort they make.
b) *Strength* Dimension
   Situations in which individuals feel confident about ability. Someone can rate their self-efficacy high in many specific tasks or activities. Add more. The greater a person's *self-efficacy,* the more *self-efficacy* they apply to different situations.
c) *Generality* Dimension
   This dimension is related to the strength of one's *self-efficacy* when dealing with the demands of a task or a problem. Despite some challenges, people are persistent and strongly believe in their ability to succeed. The probability that activities are selected and carried out successfully increases with the level of self-efficacy and persistence.

Self-efficacy also has an impact on student learning outcomes. Because in the learning process, several things can hamper and become a factor in student success in obtaining good learning outcomes. According to Sudjana, learning outcomes are abilities students possess following their learning experiences. As Sudjana (in Lestari, 2015) stated, "Learning outcomes are skills possessed by students after learning experiences. Meanwhile, according to Tatan and Teti (in Lestari, 2015), "Learning always involves changes in individual self such as maturity of thinking, behaving and maturity in making decisions and choices.

From several definitions of learning outcomes above. It can be explained that the results of the study are the conclusions from activity learning that result in continuous

and dynamic changes in knowledge (cognitive), attitudes (affective), and behavior (psychomotor) after the learning experience. Mathematics in this study is the science of logic,form, composition, amount, and relationships between concepts about numbers and operational processes.

Based on the description above, it can be concluded that the results of learning. Mathematics results from learning activities in the form of changes in cognitive, emotional, and psychomotor skills related to abilities about numbers, shapes, and conceptual relationships, as well as continuous and measurable motor skills. In achieving maximum and good mathematics learning outcomes, students can be categorized by several self-efficacy indicators. Subaidi (in Ananda & Wandini, 2022) suggests, "There are three indicators of student self-efficacy, namely Level, Strength, and Generality.

Table 1. Student *Self-Efficacy Indicators*

Dimensions	Description	Indicator
Levels	The dependence of individual beliefs on the level of task difficulty	1. Students look for ways to solve complex tasks 2. Students want to avoid tasks that they feel are beyond their ability
Strength	T level of individual strength of confidence in carrying out tasks	1. Students keep trying even though they face difficulties and obstacles 2. Students do not lose faith after having experiences that are not to expectations and desires
Generality	Confidence in the individual in a task and other tasks	1. Students are confident in their ability to do the tasks given with a variety of activities 2. Students are confident in their ability to complete assignments in a variety of situations and conditions

METHOD

The approach used by researchers in this study is qualitative. The qualitative approach itself explains its stance in the real world. According to Rahardjo (in Manab, 2015), a qualitative approach is a scientific endeavor that involves systematic data collection, categorization, description, and interpretation of information obtained from interviews or casual discussion, observation, and documentation. With a qualitative approach, the researcher begins the research process by assessing the main objectives and focusing on and understanding the phenomena that occur regarding the truth of the phenomenon. Researchers in this study used descriptive qualitative research because they wanted to know the truth of phenomena that occur in the world of education that are not realized by the public.

The technique of taking subjects in this study used a purposive sampling method. The subjects in this study were class VII students of MTs Negeri 01 Pasuruan in the odd semester of the 2022/2023 academic year. The research subjects were taken as many as three students who had high, medium, and low math abilities based on math ability tests. The supporting instruments in this study were a diagnostic test, a self-efficacy questionnaire containing 30 statements, an assignment containing two essay questions, and an interview guide. Meanwhile, further studies and search for meaning are needed to deepen the understanding of the research. There are three paths of qualitative data analysis, namely data reduction, data presentation, and conclusion (Miles and Huberman in Agusta, 2003)

RESULTS

In carrying out the study, researchers naturally have instrument supporters to see the ability of students to complete test questions based on problem-solving. As for the instruments, supporters from this study include a diagnostic test to determine research subjects by providing five essay questions taken from several HOTS questions.

After the diagnostic test was carried out, data was obtained, and three students were found to be subjects who would take part in the study.

Table 2. List of Research Subjects

No	Initials	Information
1.	AQA	subject Diagnostic Test Capable Tall
2.	FAA	subject Diagnostic Test Moderate Capability
3.	SNS	subject Diagnostic Test Low Proficiency

After being determined and found research subjects. Next, a questionnaire was distributed to determine whether the subject was included in the dimensions of high, medium, or low *self-efficacy*—scoring of responses to *self-efficacy* instrument statements against the following table.

Table 3. List of Research Subjects

Category Student Answers	Questionnaire Item Score	
	Positive	Negative
Highly Compliant (SS)	5	1
Fit (S)	4	2
Doubt (R)	3	3
Incompatible (TS)	2	4
Highly Incompatible (STS)	1	5

In this study, students will be grouped into high, *moderate*, and low *self-efficacy classifications* according to the research objectives. Researchers make the criteria into three categories according to *self-efficacy indicators and* the research stages.

Table 4. *Self-Efficacy* Score Data

No	Respondent Name	Respondent Final Score
1.	FAA	115
2.	SNS	114
3.	AQA	113
	Amount	341

The following instrument assignments will be given to determine the effect of *self-efficacy* on students' mathematics learning outcomes. The assignment contains two essay questions in which the students' final answers will be analyzed coherently. Bandura suggested that self-efficacy significantly and enormously impacts one's ability to achieve mathematics and writing. Students with high levels of *self-efficacy can enthusiastically tackle a problem.* The results are very different for students with low or moderate levels of self-efficacy. Lack of *self-efficacy* often causes students to neglect homework and quickly give up when faced with challenges. Students with a moderate level of self-efficacy usually perform on par with their peers regarding ability ((Ananda & Wandini, 2022)). Therefore, self-efficacy is needed in ongoing learning because it can help students solve a problem confidently, even if it is difficult.

DISCUSSION

Bandura argued that self-efficacy significantly and enormously impacts one's ability to achieve mathematics and writing. Students with a high level of self-efficacy can enthusiastically solve a problem. The results are very different for students with low or moderate levels of self-efficacy. Lack of self-efficacy often causes students to neglect homework and quickly give up when faced with challenges. Students with a moderate level of self-efficacy usually perform on par with their peers regarding their ability (Ananda & Wandini, 2022). Therefore, self-efficacy is needed in ongoing learning because it can help students solve a problem confidently, even if it is difficult.

And the last supporting instrument, namely interviews, after deepening with interview guidelines, researchers found several differences between each dimension of *self-efficacy*, namely as follows:

Table 5 Differences in the Dimensions *of Self-Efficacy* in Research

No	*The Self-Efficacy* Dimension	Difference
1.	Dimensions *Levels*	a. Faster on task b. Assume that there are no problematic questions when given assignments

2.	*Strength* Dimension	a. Seemed nervous when he first saw the problem b. The longest in the work and collection of tasks c. think that there are difficult questions and keep trying to recall the lessons conveyed
3.	*Generality* Dimension	a. Tend to be more silent and think b. Not much head and focus on the task c. experience complicated and unchallenged feelings when faced with difficult questions

CONCLUSION

Based on the results of data analysis, it can be concluded that research on the relationship between *self-efficacy* and mathematics learning outcomes of students at MTs Negeri 01 Pasuruan has a significant relationship. Self-confidence variables and mathematics learning outcomes have a significant positive relationship. Self-efficacy significantly and enormously impacts a person's ability to achieve mathematics and writing. This means that the higher students' self-efficacy when doing assignments related to mathematics, the better the results of learning mathematics student. Conversely, if the students' self-efficacy when doing tasks related to mathematics is lower, the students' mathematics learning outcomes will also be lower.

These results show that students with high *self-efficacy* can enthusiastically tackle a problem. The results are very different for students with low or moderate levels of self-efficacy. Lack of *self-efficacy* often causes students to neglect homework and quickly give up when faced with challenges. Students with moderate levels of self-efficacy usually perform on par with their peers regarding ability.

ACKNOWLEDGMENT

Thanks are conveyed to Mrs. Fajriyah Rachmatika, S.Sc., M.Pd, as the supervising lecturer, the entire extended family of Mts Negeri 1 Pasuruan and Mr. and Mrs. and their families, and friends in class 19f-A Mathematics Education class of 2019 and all parties who played an essential role in supporting this research

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