

Study of Mathematics Self Efficacy Ability Students in Critical Thinking Ability

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Abstract. Self-efficacy will help students encourage themselves to feel able to complete tasks from simple to complex problems and maximize their creativity until the problem is resolved. This article aims to examine students' mathematical self-efficacy abilities in critical thinking. The method used is qualitative by collecting library data. Self-efficacy plays an important role in everything, especially for students who find it difficult to solve mathematical problems through critical thinking activities. With high self-efficacy, students are expected to be able to successfully solve mathematical problems and be able to think critically. Students with high self-efficacy believe that they can do well on math tests, understand the most difficult material, perform tasks with the best effort in math, and are able to master competencies in math class, and tend to have superior math achievements. On the other hand, students with low mathematical self-efficacy tend to be vulnerable and give up easily in solving math problems and students' failure to solve math problems is assumed to be due to their lack of mathematical abilities.

Keywords: Self Efficacy, Mathematics, Critical Thinking

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INTRODUCTION

Mathematics is one of the subjects in the National Education Standards that students must learn. The objectives of learning mathematics include: Understanding mathematical concepts, explaining the connectedness of concepts and applying concepts or algorithms, being flexible, valid, efficient, and precise in solving problems; Make use of pattern and characteristic reasoning, manipulate mathematics and generalize, construct evidence, or present mathematical ideas and statements; Perform problem solving by understanding the problem, constructing a mathematical model, interpreting the solution; Communicating ideas with notations, tables, graphs, or the like in explaining problems; Appreciating the functions of mathematics, such as curiosity, attention, and desire to learn mathematics, as well as being tenacious and showing confidence in solving problems (Kemendikbud, 2006;

Learning mathematics for the basic education level emphasizes the formation of attitudes, reasoning or logic and skills (Wahyudi et al., 2012: 2). The formation of reason or logic and skills can be grown with learning that directs students to think critically. Critical thinking skills can be formed by teachers by providing learning that encourages students to think critically and requires effective learning strategies (Umuroh & Agoestanto, 2017: 532).

Thinking ability is one of the competencies that students should have in the 21st century. In the 21st century, there are four types of competencies that must be possessed by students. The four competencies are creativity, the ability to think critically and also solve problems (critical thinking and problem solving), the ability to work collaboratively, and the ability to communicate (communication skills). These four competencies are important for students to have as a provision in face a world that is constantly changing. An ability that is considered important for students to have, to face a world that is constantly changing is an ability that can be used to assist students in making decisions for themselves, as well as for their environment. The abilities that can help students to make decisions are critical thinking skills or critical thinking skills.

In the 21st century, the ability to think is a very essential quality in life to compete in various fields of life. In the 21st century, there are three important skills that humans need in life, namely critical thinking, creative thinking, and problem solving. These three skills are known as higher order thinking skills or High Order Thinking Skills (HOTS). One of the 21st century skills

and higher order thinking skills is critical thinking. Critical thinking can improve the ability to identify and solve a student problem.

The results of TIMSS reports 1999, 2003, 2007, 2011, 2015 and the PISA mathematics survey 2003, 2006, 2009, 2012, 2015 show that Indonesian students cannot solve questions that require higher level thinking skills. including thinking skills, such as problem solving skills that require critical thinking in the solving process. In addition, the ability and understanding of students' concepts shows that they are still very weak but are more trying to solve problems related to facts and procedures. The low ability of students' mathematical critical thinking also reflects the results of research (Junaidi, 2017) that students' mathematical critical thinking abilities in upper secondary education generally have not achieved satisfactory results and are still at a low level.

PISA results show that students' learning abilities at the primary and secondary education levels are still lacking. In 2018, in terms of math and science skills, a minimum of 71% of students are below math ability and 60% of students are below minimum science ability. Indonesia's PISA score has not changed for the last 1015 years. Therefore, Indonesia is consistently one of the countries with the lowest PISA scores.

Critical thinking is used to solve problems encountered and is a tool for survival in everyday life (Chukwuyenum, 2013). Solving math problems also requires critical thinking skills. Because it is important for teachers to improve students' critical thinking skills by designing learning that requires the use of cognitive abilities. The results of the research that has been done show that students who have critical thinking skills give better posttest results on math material than other students (Su, Ricci, & Mnatsakanian, 2015; Lorentzen, 2013; Palinussa, 2013).

In addition to cognitive aspects, there are affective aspects that are considered to influence students' capacity to solve mathematical problems. One of the affective aspects contained in the objectives of learning mathematics is having confidence in their ability to solve mathematical problems or also known as mathematical self-efficacy (SEM). SEM itself functions to manage life goals, influencing psychological well-being, achievement, and the direction of their lives (Bandura, 1977, 1995, 1997). This is because SEM affects individuals in determining actions to achieve goals including estimates of various situations (Ghufroon & Su Minta, 2012).

Predictively, SEM is a positive predictor of mathematics achievement, so students who have confidence in their achievements in mathematics tend to show higher mathematics achievement. In particular, students who believe that they can do very well on math tests, they can understand the most difficult material presented in mathematics texts and those presented by mathematics teachers, students can perform assignments with the best effort in mathematics, and are able to master competencies in mathematics class, as well tend to have superior mathematical achievement (Liu & Koirala, 2009). SEM makes it easy to solve problems, especially when it comes to fifth grade elementary school students with low initial abilities through CPA learning based on their achievements (Yuliyanto & Turmudi, 2020).

Based on research conducted by (Nurazizah, S., & Nurjaman, A., 2018) shows the results that self-efficacy has an influence on students' mathematical critical thinking abilities. This is evidenced by students who have high self-efficacy also have high results when solving problems that require critical thinking skills. Conversely, students who have low self-efficacy also show low results when solving problems that require critical thinking skills. In line with research conducted by (Nuareni, S., Feronika, T., & Yunita, L., 2019) that students who have high self-efficacy are also able to think critically well, while students who have low self-efficacy have the ability to think critically. low too.

Previous research conducted by (Sunaryo, 2017) entitled Measurement of Student Self-Efficacy in Learning Mathematics at MTs N 2 Ciamis with the results Students were given a self-efficacy questionnaire which contained three dimensions, namely Magnitude, Generality, Strength. The results of the questionnaire were then analyzed in depth. The results of the questionnaire analysis show that in order to increase students' self-efficacy abilities, teachers are required to have the ability to foster students' confidence in completing mathematical tasks well. Activities that can be carried out by the teacher to foster student confidence by getting students used to solving challenging and difficult questions that require tenacity and student perseverance.

Teachers are also required to have the ability to encourage and motivate students to always try to complete the tasks given seriously and not easily give up. When students' self-efficacy abilities increase, it will have an impact on increasing students' ability to solve math problems.

Previous research conducted by (Nurazizah, S, & Nurjaman, A., 2018) entitled ANALYSIS OF THE RELATIONSHIP OF SELF EFFICACY ON STUDENTS' MATHEMATICAL CRITICAL THINKING ABILITY IN CIRCLE MATERIALS with the results of the research concluded: (1) the level of students' mathematical critical thinking ability in the problem solution is still low; (2) students' difficulties, in general, have not understood the problem and the preconception is still low; (3) students have not embedded the sense of learning independently; (4) there is a connection which is significant between self-efficacy toward mathematics critical thinking.

The novelty of this article is to find out the study of self-efficacy and its relation to critical thinking, especially in elementary schools. Based on this background, the purpose of this study is to examine students' mathematical self-efficacy abilities in critical thinking.

METHODS

This study used the SLR (systematic literature review) method. This article aims to examine students' mathematical self-efficacy abilities in critical thinking. SLR is a research method for collecting and evaluating research results related to research topics. SLR research aims to identify, examine, and make conclusions from all research results related to the research topic.

The research method used includes data sources, data collection, and data analysis. The data collected and reviewed is secondary data in the form of research results which include books, journal articles, and conference proceedings that are relevant to the topic. The criteria are as follows:

1. Literature in the form of journal articles or conference proceedings.
2. Scopus, Sinta, or Google Scholar indexed literature.
3. The year of publication of literature is a maximum of the last 5 years (2017-2022).
4. The literature discusses students' self-efficacy and critical thinking in mathematics.
5. The subjects of research on literature are students in Indonesia.

The author examines ideas, opinions, or findings contained in the literature so as to provide theoretical information related to mathematical self-efficacy in critical thinking mathematics. The data analysis phase begins with collecting references related to mathematical self-efficacy abilities which are then studied to obtain further information. The results of the studies that have been obtained are linked and adapted to the ability to think critically in mathematics.

RESULTS

In learning mathematics, teacher support and student self-efficacy mediate the relationship between students' scores at different mathematical abilities. A common belief among educators is that students' self-perceived abilities play an important role in students' academic motivation. A central construct related to self-perceived ability is self-efficacy (Skaalvik, Federici, & Klassen, 2015). Teachers can apply learning strategies that provide examples of how good reciprocal relationships generalize new ideas based on one's previous knowledge in increasing self-efficacy. Students' self-confidence in the success of solving mathematical problems is called mathematical self-efficacy.

Self-efficacy defined as a person's belief in having the ability to organize and carry out an action necessary to produce a given achievement. Self-efficacy refers to personal or individual belief in one's own ability to effectively perform certain tasks. Self-efficacy is a person's belief in being able to master situations in order to get positive results (Bandura., 1997; Nicola J. B, David AG, Jeffrey KS, 2018; Yusuf., 2011).

Self-efficacy is a person's belief about his chances of succeeding in carrying out a particular task. Meanwhile, according to Bandura (2009) self-efficacy is a person's belief about the ability to organize and complete the actions needed in managing future situations. This ability influences how a person thinks, feels, motivates himself and acts.

According to Robbins (2003), self-efficacy is a factor that influences a person's performance in achieving a certain goal. Self-efficacy ability is confidence in one's ability to carry out tasks (Engko, 2018). Based on these opinions, it can be concluded that the ability of self-efficacy is confidence in completing certain tasks or actions to achieve a goal.

This self-confidence in mathematics can be formed because of a positive attitude towards mathematics, where with this positive attitude students can solve mathematical problems according to their actual abilities. This is supported by the opinion of Bandura (2009) that self-efficacy abilities can influence a person's choice of activity, effort, and persistence when solving problems. Students who have high initial mathematical abilities have a lot of experience in solving mathematical problems so that they are able to convey mathematical ideas or ideas to friends in their groups (Moma, 2014), and in these activities the right state of mind is needed so that they can be maximally productive in creative endeavors (Mann, Chamberlin, & Graefe, 2016).

The influence of mathematical self-efficacy affects students' mathematics achievement. High self-efficacy creates serenity in front of tasks and confidence in facing difficult activities. On the other hand, a person who doubts his abilities, thinks about things in a way that is more difficult than the actual truth. Trusting one's academic ability is an important component of school success. When someone is routine with the demands of a task or activity, they tend to bring up self-efficacy that has been developed as a result of previous experience with a similar task. There is a relationship between self-efficacy and academic achievement, namely the higher the self-efficacy, the higher the academic ability. Self-efficacy is also a determinant that influences a person's choice of persistence in dealing with difficulties and the mindset and emotional reactions they experience (Sahendra, Budiarto, Fuad, 2018). Thus, self-efficacy is a very important part of the learning process.

Students who have high self-efficacy show behavior: 1) Perceiving difficult tasks as a challenge not as a threat, 2) Having a high interest in an activity, 3) Being able to maintain a strong commitment, 4) Being able to get up again after experiencing failure, 5) Being able to overcome difficult situations with positive activities, 6) Survive when you get a difficult task and 7) Set goals well (Bandura, 1994; Sewell, A. & George, A., 2000; Saricobana, 2015; Yi Jiang, Juyeon Song, Minhye Lee & Mimi Bong, 2014; Ziegler, N., 2018).

Based on the findings in several previous literature reviews it was found that mathematics self-efficacy is influenced by 4 main sources. The first strategy that is most effective in developing attitudes of mathematical efficacy is through success experiences secondly, namely through the experiences of others by seeing people succeed with sustained efforts to increase their confidence in having the ability to master comparable activities to succeed. Verbal persuasion is the third way to strengthen mathematical efficacy, namely people who are praised verbally will be able to master the challenges given and try hard when facing problems. Fourth by reducing stress and changing negative emotions and misunderstandings on their physical state.

In line with the previous opinion with a different editorial, namely the self-efficacy of mathematics can also be observed through Mastery experience which is shown by overcoming obstacles through persistent effort and learning to manage failures, then representative experience is obtained when seeing people increase their self-confidence and improve themselves (Yuliyanto, Turmudi, Agustin, Putri, & Muqodas, 2019). Even the efficacy of mathematics can also be increased through experimental and social learning by involving students in 3 learning opportunities, namely Erikson's representative and social mastery experiences (Pihie & Bagheri, 2013).

Self-efficacy Mathematics is an attitude of self-confidence or one's belief in designing, compiling and finding solutions to mathematical problems. Mathematical self-efficacy has a positive influence on the process of learning mathematics, especially in facing new challenges in online learning. Bandura (Alifia & Rakhmawati, 2018) states that there are three dimensions of self-efficacy that are used in measuring a person's self-efficacy abilities, namely:

1. *Magnitude/Level*

Magnitude/Level related to the degree of difficulty of the task that is believed capable of being done by an individual. If the individual is faced with tasks that are arranged based on the level of difficulty, then the ability of the individual's self-efficacy is limited to tasks

that are easy, medium and difficult. This dimension has an influence on the actions that individuals choose in completing tasks, namely actions that will be tried or avoided.

2. *Strength*

Strength relates to the level of strength of individual self-efficacy abilities towards confidence in their abilities. When faced with a difficult task, individuals who have strong self-efficacy will not give up easily, are tenacious and always try to increase their efforts to complete the task properly. Conversely, individuals with weak self-efficacy abilities will be easily influenced by obstacles in completing their tasks, causing them to tend to give up easily.

3. *generality*

generality relates to an individual's ability to generalize the tasks he has done, such as whether he perceives a task as an obstacle or a challenge. This dimension is considered good if the individual has confidence in his abilities limited to certain tasks or all tasks. Based on the dimensions above, if it is related to mathematics, individuals who have mastered self-efficacy will have confidence in their own abilities and an interest in learning material, solving math problems and assignments. The higher the student's self-efficacy ability, the higher the confidence and enthusiasm for himself in solving mathematical problems. Students who have low self-efficacy abilities tend to give up easily when faced with math problems that they consider difficult.

Self-efficacy Mathematics allows students to be aware of the importance of mathematics in everyday life, be confident and feel happy when faced with challenging mathematical problems. Students who have high mathematical self-efficacy will carry out their tasks calmly, can persist in thinking and trying to find solutions so as to create a sense of seriousness, resilience and emotional control. Conversely, students who have low self-efficacy tend to be unsure of their abilities which causes them to depend on their friends' answers. Self-efficacy needs to be developed by students so that they can apply mathematics learning in everyday life, so that the learning process can be optimal (Lusiana & Setyaningsih, 2020). Therefore, Mathematical self-efficacy ability is an important factor in achieving maximum success in learning mathematics. This success can also be achieved with cognitive aspects which are needed in problem solving skills. The cognitive aspect includes student relations in understanding the problem gradually (Anugrahana, 2021).

Indicators of mathematical self-efficacy on the size dimension include interest in doing difficult tasks, task perspective, ability to complete tasks, and commitment to complete tasks. The indicators for the dimensions of strength include the ability to survive when students face math assignments, fighting spirit in facing obstacles, persistence in doing assignments, being able to overcome learning difficulties, confidence in their abilities and learning from previous experiences. Indicators on the generality dimension consist of students' ability to plan the completion of assignments and the breadth of students' knowledge about various materials (Bandura, 1994; Mukhibin & Himmah, 2020).

Measuring self-efficacy in mathematics can be done through self-confidence in completing different and challenging difficult tasks (Lestrari & Yudhanegara, 2017). thus Aspects in Mathematics self-efficacy are the experience of success in dealing with math problems, experience with others in solving math problems, verbal praise when solving math problems, and psychological conditions when facing math problems. Each of these four aspects has three indicators, namely confidence in being able to complete tasks that are difficult, diverse and full of challenges.

According to Bandura (1997), there are four main sources that influence a person's Self-Efficacy, namely:

1. The experience of one's success in dealing with certain tasks in the past. If a person has experienced success in the past, the higher the Self-Efficacy, conversely, if a person has experienced failure in the past, the lower the Self-Efficacy of that person.
2. Other people's experiences. Individuals who see other people succeed in doing the same activity and have comparable abilities can increase their Self Efficacy, conversely if the person they see fails then the individual's Self Efficacy decreases.

3. Verbal persuasion, namely information about one's abilities that is conveyed verbally by influential people so as to increase confidence that the abilities possessed can help to achieve what is desired.
4. Physiological conditions, namely physical conditions (pain, fatigue, etc.) and emotional conditions (mood, stress, etc.). This stressful situation can affect confidence in his ability to face the task. There are negative things, such as fatigue, unhealthy, anxiety or pressure will reduce one's level of Self Efficacy. Conversely, if someone is in prime condition, this will contribute positively to the development of Self Efficacy.

To deal with the development of the 4.0 revolution, education currently needs to apply 21st century learning. The skills that need to be mastered are 4C skills. These abilities consist of collaboration skills, critical thinking and creative thinking. One very important skill is the ability to think critically. This ability is important because it builds a wise attitude in dealing with problems in their lives (Prasojo & Ariyanti, 2017). Critical thinking is a person's ability to argue, evaluate personal and other people's opinions, basic abilities, and the desire to explore understanding to draw conclusions (Handayani, 2020).

Someone who has the ability to think critically tends to be able to consider every decision that will be taken so that he can draw the right conclusions. Specifically in learning mathematics, critical thinking is needed in order to be able to solve non-routine math problems. For this reason, strong self-efficacy is needed so that every decision is as expected. As Bandura (2009) states that self-efficacy (self-confidence) determines how everyone thinks, behaves, and motivates himself. In line with that, Rohaeti, Hindun, & Fitriani (2019), stated that self-efficacy greatly influences a person's decision making and mindset. Furthermore, in learning mathematics, students with high self-efficacy are able to solve complex mathematical problems and are able to complete mathematical assignments that require thinking skills. In fact, Hoffman (2009) one of the factors that influence critical thinking skills is personality factors, including self-efficacy. This is also supported by the research of Sundari, Parno, & Kusairi (2016), and Azizah & Nurjanam (2018) which states that there is a positive relationship between self-efficacy and critical thinking skills. Likewise, Slavin (2014) states that self-efficacy is an important variable that must be owned by students, because those who have self-efficacy tend to use cognitive learning strategies, thereby supporting the improvement of critical thinking skills. In line with this,

Critical thinking is an important ability for students, so that critical thinking should be an activity that must be developed and taught in every subject, because critical thinking skills are not innate and do not develop naturally. Critical thinking ability is an intellectual potential that can be developed through the learning process.

According to Maulana (2017: 5) Critical thinking is needed by everyone to address problems in the unavoidable reality of life. By thinking critically one can organize, adjust, change or improve his thoughts so that he can make decisions to act more appropriately. Meanwhile, according to Neolaka (2019: 75) critical thinking involves inductive thinking skills such as recognizing relationships, analyzing open-ended problems, determining cause and effect, loading conclusions and taking into account relevant data.

According to Desmita (Alexandra & Ratu, 2018; 104) the ability to think critically is the ability to reflect on problems in depth, maintain an open mind for different approaches and perspectives, not simply trust information that comes from various sources (oral or written), and think reflectively rather than just accepting ideas from outside without significant understanding and evaluation, meanwhile according to Hassoubah (Mahardiningrum and Ratu, 2018:76) critical thinking is reasoned and reflective thinking by emphasizing decision making about what to believe or conducted.

Critical thinking is analyzed using the criteria presented by Ennis (1996), namely people who think critically ideally have several basic criteria or elements, abbreviated as FRISCO (Focus, Reason, Inference, Situation, Clarity, and Overview). Where is the Focus criterion, namely understanding the problem in the given problem, Reason criteria, namely providing reasons based on relevant facts/evidence at each step in making decisions or conclusions, Inference criteria, namely making conclusions correctly and being able to give or choose the right reasons

to support conclusions. made, Situation criteria, namely using all information based on data, reports, principles, evidence, judgments, beliefs, opinions, concepts, descriptions, questions, or other forms of representation that are relevant or in accordance with the problem, the Clarity criterion is being able to state the results of reasoning, justify or clarify that reasoning based on considerations of evidence, concepts, methodologies, criteria and context; and presenting reasoning in the form of valid and convincing arguments, and the Overview criteria, namely re-checking each step that has been implemented.

Table 1.Critical Thinking Criteria and Indicators

Critical Thinking Criteria	Indicator
F (Focus)	Identify the main focus or concern or students understand the problems in the questions given.
R (Reason)	Identify and assess the acceptability of reasons or Students provide reasons based on relevant facts/evidence at each step in making decisions or conclusions.
I (Inference)	Assessing the quality of the conclusions, assuming the reasons for being able to accepted or Students make conclusions correctly and Students choose the right reason (R) to support that conclusion made.
S (Situation)	Watch the situation carefully or Student uses all information relevant to the problem.
C (Clarity)	Clarity Check to make sure the language is clear or Student give more explanation about what that is intended in the conclusions made, students can explain the terms in the problem if any and students can provide examples of cases similar to the problem.
O (Overview)	Check back or Step back and see everything in real time as a whole or Students examine/check again in detail thorough from start to finish (produced in FRISC).

Based on this opinion can concluded that critical thinking important for everyone individuals that can be trained through learning in schools, in particular through learning mathematics. Thus someone said think critically when deep able to solve a problem analyze the problem, then compare with that problem ever obtained before and evaluate each step troubleshooting described logically and according to the concept which is owned. To make a appropriate learning plan in developing and teaches critical thinking, things that one teacher can do it is to look at the profile of critical thinking owned by students. It is intended that any math learning do always pay attention students' critical thinking skills. For see the profile of students' critical thinking, researchers can see from student activity in solving problems.

In developing a good mastery of learning concepts, critical thinking skills students' mathematics is needed, when students work on the questions given they tend to requires analytical power and logical thinking, this is in line with Novianty (2017), Mathematical critical thinking is the basic thinking process for analyzing arguments and bring up ideas for each meaning to develop a logical mindset. Therefore, it is very important to provide opportunities for students to Use good thinking skills in making predictions based on their own experience or knowledge, so it's easier to understand draft. Critical thinking is not equivalent to deep higher-order thinking skills Critical thinking contains all the components of higher order thinking, but also includes dispositions critical thinking that is not included in higher order thinking. Ennis (1996) defines critical thinking as thinking reflective and reasoned and focused on determining what to believe or what is conducted. It is intended that the potential of students can continue to increase and develop optimally.

In addition, confidence in their abilities, systematic and open to the development of science. To achieve mathematical critical thinking skills in learning, especially in learning Students' mathematics requires adequate behavior, one of which is self-ability *efficacy*).

DISCUSSION

Based on the study of the results found previously, that students' self-efficacy can have an influence on students' mathematical critical thinking abilities. Students who have high self-efficacy tend to have good mathematical critical thinking skills. Meanwhile, students who have low self-efficacy tend to have low mathematical critical thinking skills as well. This is an indicator that self-efficacy has an influence on students' mathematical critical thinking processes.

This is supported by research conducted by (Nurazizah, S., & Nurjaman, A., 2018) showing the results that self-efficacy has an influence on students' mathematical critical thinking abilities. This is evidenced by students who have high self-efficacy also have high results when solving problems that require critical thinking skills. Conversely, students who have low self-efficacy also show low results when solving problems that require critical thinking skills. In line with research conducted by (Nuareni, S., Feronika, T., & Yunita, L., 2019) that students who have high self-efficacy are also able to think critically well, while students who have low self-efficacy have the ability to think critically. low too. It means,

Wilson & Narayan (2016) stated that the application of what individuals know and the skills possessed are influenced by self-efficacy. Therefore, it is important to know the role of self-efficacy itself. Many opinions state that self-efficacy has a role as a predictor and mediator of an achievement. Wilson & Narayan (2016) added, for each task, students with higher self-efficacy have better task performance.

The development of critical thinking skills cannot be carried out without planned and systematic efforts, but must be carried out deliberately by making plans that are right on target, such as making open-ended and less structured problems to start learning, assigning students to solve problems systematically, and directing students to seek information systematically. independently regarding the problems given (Redhana, 2019). Besides being able to improve critical thinking skills, the learning system is also able to increase students' self-confidence regarding the concept (self-efficacy) that students get through systematic reasoning.

Based on the findings in several previous literature reviews it was found that mathematics self-efficacy is influenced by 4 main sources. The first strategy that is most effective in developing an attitude of application of mathematics is through the experience of success; secondly, through the experiences of others by seeing people succeed with sustained efforts to increase their confidence in having the ability to master comparable activities to succeed. Verbal persuasion is the third way to strengthen mathematical efficacy, namely people who are praised verbally will be able to master the challenges given and try hard when facing problems. Fourth by reducing stress and changing negative emotions and misunderstandings on their physical state. Ecological index indicators greatly affect health functions and other physical activities (Bandura, 1994).

In line with the previous opinion with a different editorial, namely the self-efficacy of mathematics can also be observed through Mastery experience which is shown by overcoming obstacles through persistent effort and learning to manage failures, then representative experience is obtained when seeing people increase their self-confidence and improve themselves (Yuliyanto, Turmudi, Agustin, Putri, & Muqodas, 2019). Even the efficacy of mathematics can also be increased through experimental and social learning by involving students in 3 learning opportunities, namely Erikson's representative and social mastery experiences (Pihie & Bagheri, 2013).

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completion of assignments and the breadth of students' knowledge about various materials (Bandura, 1994; Mukhibin & Himmah, 2020).

Measuring self-efficacy in mathematics can be done through self-confidence in completing different and challenging difficult tasks (Lestari & Yudhanegara, 2017). That aspects in Mathematics self-efficacy are the experience of success in dealing with math problems, experience with others in solving math problems, verbal praise when solving math problems, and psychological conditions when facing math problems. Each of these four aspects has three indicators, namely confidence in being able to complete tasks that are difficult, diverse and full of challenges.

The implication of this research is to provide an overview or study of self-efficacy and critical thinking in learning mathematics in elementary schools. Then, the results of this study can be used as a reference to increase understanding and knowledge regarding the study of self-efficacy and critical thinking.

CONCLUSION

Self-efficacy important in online mathematics learning because self-efficacy can build motivation and independent learning, affective aspects and student psychology. Critical thinking is important for students to have in online mathematics learning because it helps students understand material, solve math problems well when they lack material information that the teacher conveys and improves cognitive aspects.

Self-efficacy plays an important role in all things, especially for students who are solving math problems and demanding critical thinking skills. With the ability of self-efficacy that students are expected to be successful in solving problems mathematics and critical thinking. So, to instill high student self-efficacy, the teacher need to create a fun, active, and developing learning atmosphere self-confidence of students and always provide good motivation.

There are three dimensions of self-efficacy that are used in measuring a person's self-efficacy abilities, namely: Magnitude/Level, Strength, and Generality. There are four main sources that influence a person's self-efficacy, namely the experience of a person's success in dealing with certain tasks in the past, the experience of other people, verbal persuasion, namely information about a person's abilities conveyed verbally by influential people so as to increase confidence that the abilities possessed can be help to achieve what you want and the last factor is the physiological condition, namely the physical state and emotional condition.

Suggestions that can be given to foster students' self-efficacy in critical thinking in mathematics include respecting the opinions of others when there are questions or suggestions submitted by students from other groups. This is one of the characteristics of students who have self-confidence, work hard, dare to appear in explaining their ideas, are creative and critical in solving various mathematical problems they face, and not easily give up.

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