# The Role of Self Efficacy in Improving Student Metacognitive Skills

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**Abstract:** This research aims to examine and explain the role of self-efficacy in improving student's metacognitive skills. The population of this study is the total number of students in class XI IPS in Bandung State High School 2017/2018 academic year. Instruments used (1) the scale of self-efficacy (2) the scale of metacognitive. This study uses an exploratory study type with a combination of surveys and literature reviews. The results showed that self-efficacy has an important role to show the confidence or confidence in the ability possessed by students in regulating the process of thinking and knowledge in using appropriate learning strategies related to metacognitive learning. Students who have a high level of self-efficacy will be followed by a high level of metacognitive skills.

**Keywords:** Skills, Metacognitive, Self Efficacy

## INTRODUCTION

The metacognitive concept emerged in the early 70s to add a new dimension to the field of cognitive psychology. This science has developed and increased in the 80s which are used in the education literature that refers to cognitions about perception, organizing and full awareness of individuals (Daghistani, 2015: 1) The development of metacognitive skills by students is very important for learning because it can foster independence, self-regulation, skills, and understanding of science (Van Opstal & Daubenmire, 2015)

Although there is general agreement about the importance of metacognitive aspects, certain aspects that influence metacognitive assessment continue to be the object of debate. Current educational and cognitive research show that most students have difficulty in managing their learning and doing their metacognitive activities directly. Metacognitive directs students how to increase awareness of thinking in the learning process so that they can plan, monitor, and evaluate what is learned.

One of the problems in the learning process is that there are still many students who have difficulty in planning, monitoring and evaluating learning strategies and awareness of their thinking independently related to their metacognitive skills due to a lack of confidence in their ability to succeed in their learning activities in achieving learning goals. This belief is called self-efficacy. The basic premise of the theory of self-efficacy is a person's belief in his ability to achieve the desired results of actions taken, it is a determinant of behavior for someone when choosing whether someone will be involved and persistent in facing obstacles and challenges or vice versa (Maddux, 2000).

Self-efficacy and metacognition involve the cognitive dimensions of self-evaluation because the two self-constructs are formulated based on the ability of a child to do certain tasks for the success of his learning activities. Self-assessment can influence self-efficacy and metacognition of a child, meaning that a child's affective response to self-values will contribute to his metacognition (Bandura, 1991). Metacognitive skills play a role in regulating and controlling cognitive processes carried out by students through learning strategies chosen to work on tasks and challenges in learning and thinking, so that they have confidence or self-confidence (self-efficacy) to achieve maximum learning outcomes so that they can improve the meaningfulness of student learning in the classroom (Jane et al., 2002).

In fact, there are still many students who have low level of self-efficacy. In accordance with the research conducted by Collins in (Bandura, 1997) stating that students who have poor performance are probably caused by students having low self-efficacy so they lack confidence or confidence in themselves to optimize this ability. Learning problems have also shown that there is still a lot of learning that uses a memorization system and does not have the meaning of learning so that the learning process is felt to not empower students through metacognitive abilities and self-efficacy (Shen & Liu, 2011).

Some studies on self-efficacy indicated an important role in metacognitive formation Magno (2009); Coutinho & Neuman (2008; Gutiérrez-Braojos (2013); Johnson, Gueutal, & Falbe (2009); Kahraman & Sungur, (2012); Kiran & Sungur (2012); Magno (2009); Peng et al. (2014); Sen (2016); Senol-Şen (2016); Stewart, Seifert, & Rolheiser (2015); Yerdelen-Damar & Peşman (2013). Flavell & Wellman (1977) is a psychology pioneer who talks about the concept of metacognition based on individual principles of ideas of self-thought and dividing metacognition into three variables, namely individuals or people’s factors, tasks, and strategies. The term metacognitive created by John Flavell refers to the awareness of someone thinking and learning: what we think, how we think in terms of learning tasks or situations and why we think in certain ways. Metacognition also includes the ability to regulate thought processes in a knowledge of processes, products or anything related to cognitive itself (Flavell, 1979; Goh, 2016; Tok, 2013).

Some variables related directly or indirectly to the metacognitive processes that are examined and studied include thinking, cognitive learning, knowledge management (Daghistani, 2015). The indicators for measuring metacognitive in students (Schraw & Moshman, 1995). Declarative knowledge is knowledge acquired by students who still have to be processed using critical thinking related to the topic being studied. This knowledge consists of students know the events, what, how, and so forth; knowledge of one's skills, intellectual resources, and students' abilities as a learner; students can gain knowledge through presentations, discussions, and demonstrations;

Procedural knowledge is the application of knowledge for the purpose of completing procedures or processes in learning carried out by students

which consisting of knowledge of how to apply learning procedures (e.g. strategies); students know the learning process and when to apply the process in various situations; students can gain knowledge through discovery, cooperative learning, and problem-solving.

Conditional knowledge is a determination in special circumstances in facing a process or skill in facing learning. This knowledge consists of: knowledge of when and why students use the procedures in learnin; application of declarative and procedural knowledge with certain conditions presented; students can obtain knowledge through simulation; planning is setting goals, and allocating resources before learning; information management strategies are skills and sequences of strategies used to process information more efficiently (for example, organizing, deciphering, summarizing, focusing); monitoring is an assessment of someone in learning or implementing and implementing a strategy; debt strategies are strategies that are used to improve understanding and misconception when understanding learning; evaluation is done to analyze the performance and strategies that have been applied when learning activities have been completed.

The approach used to overcome metacognitive problems using Albert Bandura's theory explains that self-efficacy is influenced by metacognitive and motivational (Paul, 2003). Etymologically, self-efficacy consists of two words namely "self" which means elements of personality structure and efficacy which means self-assessment, whether someone can do good or bad actions, right or wrong, bias or not doing something that is in accordance with what is required Self-efficacy as a person's assessment of his or her own ability to carry out certain behaviors or achieve certain goals (Omrod, 2009).

Self-efficacy has an important role in metacognitive formation (Bandura, 1997; Kurbanoglu, 2003). According to Bandura's cognitive cognitive theory, where a person's feelings for self-efficacy affect some aspects of their behavior, including the choice of their activities, their efforts, and perseverance, and finally their learning and achievement (Chularut & Debacker, 2004). The basis of the theory of self-efficacy is in the problem of the belief that each individual has the ability to control thoughts, feelings, and behavior. subjective perception problems, meaning self-efficacy does not always describe actual abilities but is related to beliefs held by individuals (Bandura, 1986).

The measurement of self-efficacy that someone has referred to three dimensions (Bandura, 2006; Bandura, 1997) namely: magnitude or Level, the dimension of magnitude or level is related to the level of difficulty that the individual believes to be resolved based on variations in the level of difficulty of the problem; strength, the strength dimension relates to the level of individual beliefs about the competencies they have; generality, the generality dimension shows whether a person's beliefs will take place in a particular domain or apply in a variety of activities and situations.

## METHOD

This research uses an exploratory study type with a combination of surveys and literature reviews. This study explains the role of metacognitive in improving self-efficacy. The population in this study was the total number of students of class XI IPS Senior High School in Bandung in the 2017/2018 school year with a school sample using cluster sampling (sampling area) so that the school sample taken was 30 percent of 27 schools (all city schools Bandung), namely 9 schools and student samples were taken using proportional random sampling techniques.

In order to measure the level of metacognition and the level of self-efficacy data collection was carried out in the form of a questionnaire. The size used in the form of a Likert scale. Alternative answers on a Likert scale consist of Always (SL), Frequent (SR), Sometimes (KD), Rarely (JR), Never (TP).

## RESULTS & DISCUSSION

### Result

Metacognitive has eight indicators including declarative knowledge procedural knowledge, conditional knowledge, planning, information management strategies, monitoring, improvement strategies (debugging strategies), and evaluation. The following is the average score of metacognitive variables based on data obtained from the research questionnaire:

**Table 1.** Metacognitive Average Score Tendency

| Indicator | Mean | Category | Variable Interpretation |
|---|---|---|---|
| Declarative knowledge | 3.42 | Highest | Highest |
| Procedural knowledge | 3.17 | High | High |
| Conditional knowledge | 3.22 | High | High |
| Planning | 3.19 | High | High |
| Information management strategies | 3.06 | High | High |
| Monitoring | 3.13 | High | High |
| Debugging strategies | 3.15 | High | High |
| Evaluation | 3.29 | High | High |
| Overall Average Amount | 3.20 | High | High |

Source: Authors (2018)

Based on the results of data processing, overall the average score for cognitive variables is 3.20. This shows the metacognitive level of students in class XI IPS in Bandung senior high school in the high category.

These results indicate that metacognitive indicators of declarative knowledge are more dominant than other indicators, meaning that the level of knowledge of students about certain events, knowledge of skills, intellectual resources, and abilities as a learner through presentations,

demonstrations, and discussions obtained by students who are processed using critical thinking related to the topic being studied is very high.

Whereas information management strategies are smaller than other indicators, meaning that the skill level and sequence of strategies students use to process information efficiently (e.g. organizing, elaboration, summarizing, focusing) which includes learning planning, goals and allocations resources before learning are the lowest indicators compared to other indicators that are used as a measure of metacognitive variables in this study. These results indicate that students experience several obstacles and difficulties in processing and understanding the various information available. This is because students are not able to understand the purpose of the learning problems that exist well.

Self-efficacy is divided into three indicators, namely magnitude/level, strength, and generality. The Table 2 is the average score of self-efficacies based on data obtained from the research questionnaire.

**Table 2.** Variable Average Score Trends of Self Efficacy

| Indicator | Mean (average) | Category | Variable Interpretation |
|---|---|---|---|
| Magnitude/Level | 3.34 | High | High |
| Strength | 3.38 | High | High |
| Generality | 3.50 | Highest | Highest |
| Average | 3.40 | High | High |

Source: Authors (2018)

## Discussion

Based on the results of data processing, overall the average score for the variable self-efficacy is 3.40. This shows that the level of self-efficacy of students of class XI IPS Senior High School in Bandung is in the very high category.

These findings indicate that self-efficacy on the Generality indicator is more dominant than other indicators, meaning that a person's level of self-confidence in generalizing tasks and previous experiences of students are very high. While for the Magnitude/Level indicator is the smallest indicator compared to other indicators means that the level of self-confidence to achieve a goal in various difficulties that exist in students is the lowest. These results indicate that students lack confidence in facing existing difficulties and learning challenges.

The role of self-efficacy in increasing metacognitive variable average score trends. The results of the description show that the higher the self-efficacy that students have, the higher the metacognitive skills students have when learning. Thus, students who have good self-efficacy will feel confident and confident in their abilities in doing things such as doing lesson assignments and doing exam questions, so that it will affect their metacognitive skills (such as controlling their own learning process from starting to make learning plan, choose a learning strategy that is in accordance with his own abilities, monitor the development of his learning

while correcting his learning activities if there are mistakes until the learning objectives are expected to be achieved). Thus, self-efficacy has an important role to show confidence in the ability possessed by students to regulate the processes of thought and knowledge related to metacognition in the learning process.

The results of this study are in line with the research by Moores, Chang & Smith (2006) which states that self-efficacy and metacognition are different but interrelated constructs. The results of this study are in line (Renner and Renner, 2001) which state the importance of self-managed learning with an understanding of metacognition (self-monitoring and self-regulation) that illustrates eight dimensions of metacognition (including self-efficacy, self-awareness, reason, self-monitoring, determination goals, choices, self-motivation, attribution). The results of this study are also in line with research by Magno (2009) which mentioned that students who have high ability in schools are more confident (self-efficacy) in their abilities and successful in monitoring and implementing their goals (metacognition). Furtermore, self-efficacy as the strongest predictor of the total score as a whole the variables studied.

The results of this study are in line with the research by Sungur (2007) which revealed that intrinsic goal orientation, beliefs about task value, control of learning beliefs, and self-efficacy for learning and performance are predictors of the use of students' metacognitive strategies. There is an influence of motivation, self-efficacy on business regulation which is mediated through the use of metacognitive strategies. Similarly, the results of this study are also in line with the opinion of Bandura (1991) which explains that self-efficacy is an important proximal determinant of control variables such as metacognition. He further explained that self-efficacy "affects self-monitoring and cognitive processing from various aspects of a person's performance and results that flow from them". A number of studies support the notion that self-efficacy increases certain metacognitive components (Vancouver, Thompson, & Williams, 2001).

Indeed, Coutinho & Neuman (2008) remarked that self-efficacy is indicated to have an important role in the formation of metacognitive. The results of the same study were also conducted Gutiérrez-Braojos (2013) which mentioned that there is an influence between metacognitive on student self-efficacy. Some studies also show that the relationship between self-efficacy and metacognition is stronger under certain conditions. As an example of research by Ford, Smith, Weissbein, Gully, & Salas (1998) found that self-efficacy still influences metacognition even after undergoing difficult cognitive training, the same research was conducted by Joo, Bong, & Choi, (2000) who found that self-efficacy consistently predicts metacognition settings based on instruction based on the web.

These results indicate they are able to effectively translate their self-efficacy beliefs and learning approaches to successfully implement metacognition. For example, if students have good self-efficacy, their belief in their abilities will enable them to use metacognition effectively. More specifically, students who have high ability in schools are more confident

(self-efficacy) in their abilities and successful in monitoring and implementing their goals (using metacognition skills) in their learning activities (Magno, 2009). Thus, students are able to face the tasks and difficulties of learning by themselves with confidence and can realize their own abilities so that they will be more diligent in learning to achieve their intended goals.

## CONCLUSION

Based on the description of the results of the study, self-efficacy is very instrumental in improving students' metacognitive skills. Where the high level of student metacognitive will be followed by an increase in high self-efficacy. Students who have good self-confidence can help students improve their metacognitive skills by understanding problems, regulating and controlling their cognitive activities. One of the factors that drive the improvement of students' metacognitive skills through self-efficacy is to develop learning strategies and routinely practice working on challenging learning questions or tasks that require high-level thinking or thinking skills such as high order thinking questions skill (HOTS).

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