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The Influence of Self-Efficacy on Metacognition Skills of High Grade Students

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ABSTRAK

Self-efficacy dan keterampilan metakognisi merupakan dua variabel penting dalam mencapai tujuan pembelajaran. Namun belum diketahui secara pasti korelasi antarkedua variabel tersebut. Tujuan penelitian ini adalah menganalisis dan mendeskripsikan pengaruh signifikan self-efficacy terhadap keterampilan metakognisi siswa kelas tinggi. Metode penelitian kuantitatif dengan pendekatan ex-post facto atau kausal komparatif digunakan dalam penelitian ini. Populasi penelitian adalah 88 siswa dan sampelnya 72 siswa. Teknik analisis data menggunakan statistik deskriptif dan regresi linier sederhana. Berdasarkan hasil analisis diperoleh bahwa uji hipotesis menyatakan terdapat korelasi positif dan signifikan self-efficacy terhadap keterampilan metakognisi pada siswa SD kelas tinggi melalui uji korelasi pearson diperoleh nilai signifikansi sebesar 0,00 yang berarti lebih kecil dari 0,05 yaitu 0,00 < 0,05, dengan perolehan korelasi positif sebesar 0,784, sehingga jika dilihat dari pedoman derajat yang ada, maka pearson correlationnya adalah berkorelasi kuat. Dengan diperoleh nilai sebesar 10,573 yang berarti lebih besar dari nilai t tabel sebesar 1,66629 yaitu 10,573 > 1,66629, dengan perolehan persamaan regresi Y= 12,822 + 0,713 yang artinya self-efficacy berkorelasi positif terhadap keterampilan metakognisi siswa. Maka dapat disimpulkan bahwa self-efficacy berpengaruh terhadap keterampilan metakognisi.

ABSTRACT

Self-efficacy and metacognition skills are two essential variables in achieving learning goals. However, the correlation between the two variables has yet to be discovered. This study aims to analyze and describe the significant effect of self-efficacy on the metacognition skills of high-class elementary school students. A quantitative research method with an ex-post facto or causal-comparative approach was used in this study. The study population was 88 students, and the sample was 72 students. Data were collected using questionnaires and documentation studies. Data analysis techniques used descriptive statistics and simple linear regression. Based on the results of the analysis, it is obtained that the hypothesis test states that there is a positive and significant correlation between self-efficacy and metacognition skills in high-class elementary school students through the Pearson correlation test, a significance value of 0.00 is obtained, which means it is smaller than 0.05, namely 0.00 <0.05, with a positive correlation of 0.784. So that when viewed from the existing degree guidelines, the Pearson correlation is strongly correlated. The obtained value of 10.573 means more significant than the t table value of 1.66629, namely 10.573 > 1.66629, with the acquisition of the regression equation Y = 12.822 + 0.713, which implies that self-efficacy is positively correlated with students' metacognition skills. So self-efficacy affects metacognition skills.

1. INTRODUCTION

Metacognitive awareness can be defined as students' awareness of their own learning strategies and also of how, when and why to successfully apply them (Sudirtha et al., 2022; Tuononen et al., 2022). It has been said to comprise two dimensions: knowledge about cognition and regulation of cognition (Adijaya et al., 2023; Tuononen et al., 2022). Metacognition has two main components: metacognitive knowledge and metacognitive experience or organization. Metacognitive knowledge relates to our understanding of ourselves, our thinking processes, and the strategies used. In contrast, metacognitive experience is an experience and attitude of thinking that occurs before, after, and during thinking activities (Sudirtha et al., 2022). These experiences involve metacognitive strategies used to control thinking activities. These experiences involve a metacognitive approach to prevent cognitive activities and ensure that mental goals are achieved (Hidayat et al., 2020). The metacognitive learning strategies include three aspects, namely: 1) planning includes determining learning objectives, learning resources, and reflection on learning outcomes; 2) monitoring, namely focusing attention on the learning activities done; 3) regulation is the process of learners monitoring their learning activities based on predetermined

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preferences or criteria (Susantini et al., 2021; Widyantari et al., 2019). Metacognition can help the things needed and use them to achieve learning results so that to achieve learning outcomes so that metacognition can determine the achievement of learning outcomes (Sudirtha et al., 2022; Widyantari et al., 2019). According to Bandura's social cognitive theory, self-efficacy beliefs influence people's choices in making and carrying out the actions they pursue. Individuals tend to concentrate on tasks they feel capable of and believe they can complete and avoid charges that they feel capable of and think they can achieve, and avoid tasks they cannot do (Huang & Mayer, 2019; Tarsidi, 2010). Self-efficacy also helps determine the extent of effort people will exert in an activity, how long they will persevere when faced with obstacles, and how resilient they will be when faced with problematic situations. Bandura, as cited by Panjares, explicitly links self-efficacy to motivation and action, regardless of whether the belief is objectively true. Thus, behavior can be predicted through perceived self-efficacy (one's beliefs about one's ability). However, that behavior can sometimes differ from actual capacity due to the importance of perceived self-efficacy. One's knowledge and ideas can help determine expected outcomes, as individuals have confidence in anticipating successful results (Lestari & Arianto, 2021).

Self-efficacy refers to the strength of a person's self-confidence to perform a task or activity and affects his motivation and achievement. When someone has confidence in their abilities, their beliefs can foster their learning motivation and improve their achievement. Confidence in their abilities is a positive attitude that can trigger the achievement of optimal learning outcomes; with an optimistic attitude, students will be successful in their learning (Hidayat et al., 2020). So self-efficacy is an essential thing for students to have. High students' self-efficacy in the learning process will have confidence in their high abilities so that they can solve all problems in their learning activities and get maximum learning results. But in reality, the importance of the role of self-efficacy is not felt by some students (Hasmatang, 2019). Self-efficacy and metacognition are related. Someone who assesses himself to be able to solve exam questions, consciously or unconsciously, will look for strategies so that when the implementation can run as expected. Likewise, when he has difficulties in doing a task, he will think about how to deal with it so that it can be resolved. Several studies support the relationship between the two variables. In their research stated that in the learning process, self-efficacy influences the choice of ways to solve a problem in a problem, persistence in solving a problem, and persistence in solving a problem (Hidayati et al., 2021). The problem, perseverance in facing learning difficulties, and the level of effort in the learning process. Metacognition, a person's awareness of their thinking process, is needed in everyday life. Someone who has intense metacognition will be better able to solve a problem. Likewise, in the school environment, students must have metacognition that will be useful during the learning process. have metacognition that will be useful during the learning process. When doing a task, he fails to achieve the initial goal, and then this metacognitive ability is needed. This metacognitive ability is essential. He will go back to the beginning, knowing his weaknesses to take the proper steps in the future. Also researched the effect of self-efficacy on metacognitive ability through self-regulated learning. The results showed a significant influence between self-efficacy and metacognitive knowledge. This means the higher the self-efficacy, the higher the students' metacognitive skills (Widyantari et al., 2019). Researched the effect of efficacy on metacognition awareness and showed that multiple regression analyses showed that only one dimension of the teacher efficacy construct, namely teaching strategies, contributed significant predictive value to teacher metacognition awareness (Entoh et al., 2019).

Based on the results of interviews conducted by researchers with high-class teachers, it can be seen that sometimes high-class students think that if they are smart, they can always deal with tasks and situations, and vice versa. Even so, clever students only sometimes have good metacognition, and vice versa. In class IV students, two people are lazy to do assignments and come to school. Environmental factors and family problems influence this. In grade V, five students needed to be more serious about learning. They seemed to have no intention of coming to school. These students also wanted to do something other than the assignments given by the teacher. Students complain about being given assignments because they think they cannot do them. Likewise, during daily or semester tests, students are not ready to take tests because they believe they are challenging to do. The difficulty, in this case, is that they need help to work on it even though the questions tested have been studied before. In addition, five students were less enthusiastic about learning because they felt they needed help to complete the learning well. This was evidenced by the five students not doing the assignment while others were doing it. In class VI, two students rarely came to school; if they arrived, they were often late. The novelty of this study is to find the influence of self-efficacy on metacognition skills. Research on the topic is very rarely researched by others. It is important for us to know whether or not there is an influence of self-effiacy. This study aims to analyze and describe self-efficacy's significant influence on high school students' metacognition skills.

2. METHOD

The research method uses a quantitative approach to test specific theories by examining the influence between variables (Creswell, 2014; Sugiyono, 2014). This research uses ex post facto or causal-comparative research methods. The population in this study amounted to 88 students, while the sample of 72 students was taken using the Simple Random Sampling technique. The data collection technique was done by distributing questionnaires that students would fill in. The measuring instrument for self-efficacy variables is Bandura's self-efficacy scale using three components: level, strength, and generality. While the measuring instrument for the metacognition skills variable is measured by the Metacognitive Awareness Inventory developed by Schraw and Dennison using the regulation of cognition components (planning, comprehension monitoring, and evaluation). Based on the measuring instrument, this research instrument consists of the contents of the lattice in this study presented in Table 1.

Table 1. Instrument Latticework

Self-Efficacy	
Aspect	**Indicator**
Level	Students have an optimistic outlook
Strength	Students feel confident that they can complete their tasks as Increase their best efforts. Committed to carrying out assignments.
Generality	Responds to diverse situations and conditions in a good Relying on previous life experiences as a step to
Cognition	
Aspect	**Indicator**
Planning	The planning process includes how much time to spend on the problem and preparing
Monitoring	The monitoring process includes time spent, monitoring knowledge, and constructing the problem-solving process
Evaluation	The evaluation process includes goal achievement, timeliness, and the effectiveness of the knowledge used

Before conducting the research, the validity test and reliability test were performed first. The validity test and reliability test were tested on 30 non-sample students. Based on reliability test analysis results, it can be said that the self-efficacy statement is reliable, with a value of 0.749 in the high-reliability category. This shows that these 19 statement items are reliable and can be used as research measuring instruments. The metacognition skills statement is reliable, with a value of 0.898 in the same high-reliability category. These 20 statement items are reliable and can be used as research measuring instruments. After the validity and reliability tests, the next step is to give a valid statement to the sample to be tested and analyzed for data. The data analysis technique uses descriptive statistics and simple linear regression. Descriptive statistical analysis techniques consist of collecting data, organizing data, presenting data, and interpreting data. At the same time, the data analysis technique is a simple linear regression test. The simple regression test is used to decide whether the increase and decrease in the dependent variable can be done through an increase in the variable. Simple regression is based on a functional or causal relationship between one independent variable and one dependent variable. The regression test consists of the Pearson correlation test. The Pearson correlation test aims to determine the level of closeness of the linear relationship between two variables with normal data distribution.

3. RESULT AND DISCUSSION

Result

The results of the descriptive statistics will be categorized to determine the overall self-efficacy category. Values can be divided into five categories: very not good, not good enough, good enough, good, and very good (Mahendrawan et al., 2022). Before knowing the category, determine the ideal average (MI) and standard deviation (SDI). The calculation shows that SDI is 7 and MI is 74. Based on this calculation, it is obtained that self-efficacy is in the very not good category. The result categories are made into a table as Table 2.

The results of the descriptive statistics will be categorized to determine the overall metacognition skills category. Values can be divided into five categories: very not good, not good enough, good enough, good, and very good (Mahendrawan et al., 2022). Before knowing the category, determine the ideal average (MI) and standard deviation (SDI). The calculation shows that SDI is 6.16 and MI is 63.5. Based on

this calculation, it is obtained that the category of metacognition skills is in the not-good category. The resulting category is made into a table as Table 3.

Table 2. Self-Efficacy Result Category Criteria

Category	Value	Description
MI - 3SDI ≤ X ≤ MI - 1,5SDI	53 ≤ X ≤ 63,5	Very not good
MI - 1,5SDI ≤ X ≤ MI - 0,5SDI	63,5 ≤ X ≤ 70,5	Not good enough
MI - 0,5SDI ≤ X ≤ MI + 0,5SDI	70,5 ≤ X ≤ 77,5	Good enough
MI + 0,5SDI ≤ X ≤ MI + 1,5SDI	77,5 ≤ X ≤ 84,5	Good
MI + 1,5SDI ≤ X ≤ MI + 3SDI	84,5 ≤ X ≤ 95	Very good

Table 3. Category Criteria for Metacognition Skills Results

Category	Value	Description
MI - 3SDI ≤ X ≤ MI - 1,5SDI	45 ≤ X ≤ 54,26	Very not good
MI - 1,5SDI ≤ X ≤ MI - 0,5SDI	54,26 ≤ X ≤ 60,42	Not good enough
MI - 0,5SDI ≤ X ≤ MI + 0,5SDI	60,42 ≤ X ≤ 66,58	Good enough
MI + 0,5SDI ≤ X ≤ MI + 1,5SDI	66,58 ≤ X ≤ 72,74	Good
MI + 1,5SDI ≤ X ≤ MI + 3SDI	72,74 ≤ X ≤ 82	Very good

The simple linear regression technique requires a normality test and a linearity test. The data normality test is necessary because, with normally distributed data, the data represents the population. In comparison, the linearity test is used to determine the data's linearity, namely whether the two variables have a linear relationship. This test is a prerequisite in Pearson correlation analysis or linear regression. The normality test used is the Kolmogorov-Smirnov test with a significance level of 0.05. Obtained a significance value of 0.059, this value> 0.05, then Ho is accepted, meaning that self-efficacy data and metacognition skills are normally distributed. Next, linearity will be tested with the help of SPSS 25, with testing criteria: If the value of deviation from linearity sig. > 0.05, then there is a linear relationship between self-efficacy and metacognition skills. Obtained Sig. Value for deviation from linearity of 0.634 (> 0.05), it can be concluded that a significant linear relationship exists between self-efficacy and metacognition skills of high-grade elementary school students.

Furthermore, it will be tested using a regression test, with testing criteria: If the Sig value> 0.05, then self-efficacy has no effect on metacognition skills. Obtained Sig value = 0.000 (<0.05), it can be concluded that self-efficacy significantly influences metacognition skills. It also got a constant deal of 12, 822 while the regression value Y = 0.713 = 12.822, the positive coefficient value can be interpreted that self-efficacy positively affects metacognition skills. Furthermore, the Pearson correlation coefficient value will be determined to determine how close the relationship between self-efficacy and metacognition skills. Pearson correlation coefficient between self-efficacy and metacognition skills is 0.784. This shows the robust classification of the relationship between self-efficacy and metacognition skills. The positive correlation coefficient indicates that self-efficacy and metacognition skills have a positive relationship, meaning that the higher the self-efficacy, the higher the metacognition skills. It can also be seen that the determination value of the correlation coefficient is 0.615. This can be interpreted that self-efficacy affects metacognition skills by 6.15%, while other variables influence the remaining 38.5%.

Discussion

Based on the results of the data analysis, self-efficacy has a significant influence on metacognition skills. Self-efficacy has a strong relationship with metacognition, where people who have confidence in their skills and abilities also have metacognition skills. The results of this study are in line with previous study showing that self-efficacy has a direct effect on metacognitive skills (Entoh et al., 2019). In the learning environment, self-efficacy can provide a wave of positive expectations for students so that they can perform their best and encourage them to take the right actions to get good learning results (Hidayati et al., 2021). Metacognition is an intentional, planned, and goal-oriented mental process using higher-order thinking skills applied to one's thoughts and experiences (Dori & Mevarech, 2018). Stated that metacognitive skills are divided into three categories, namely, the category of students who have good, moderate, and low metacognition. Students who have good metacognition skills, then these students will be able to understand the types of tasks given by the teacher by using their understanding without help from parents (Lestari & Arianto, 2021). Students will be able to answer the charges provided by the teacher using their thoughts, and it is easy to analyze their answers. Students with moderate metacognition skills are confident and correct in answering questions on the task. Students can complete

the job using the steps explained by the teacher. Students with low skills understand the problem correctly, but students need to write what is known and what is asked in the problem, even though students can read the meaning of the problem well. Students still need to finish answering and have yet to get the results as expected. Revealed several factors, including self-efficacy, that affect metacognition. Self-efficacy talks about his abilities and the results he will get from his hard work, influencing how individuals behave. Thus, students who think about their cognition, organize and can control their learning, and plan the steps to be taken in education will increase their confidence in their knowledge and provide assurance that they can complete the task (Oktariani, 2018).

The higher the self-efficacy, the higher the student's metacognition. When a person is confident in his ability, he will regulate his cognition to complete these tasks. High self-efficacy will also have high metacognition, including problem-solving strategies, time management, and persistence in complex tasks (Novita et al., 2023). The relationship is also positive, meaning that the higher the self-efficacy, the higher the metacognition (Hidayati et al., 2021). Self-efficacy contributes to students' problem-solving abilities. Students with good self-efficacy will have high confidence to solve problems in their learning process (Fauziana, 2019). Someone who has self-efficacy believes that in order for them to achieve their goals successfully, they must put in the intensive effort and persevere when they face difficulties. In each high and low self-efficacy stage, students have a similar thinking process because they can understand the problem, plan and perform problem-solving and recheck the results (Yanjuarisma & Rahaju, 2021). Metacognition, which is the awareness of individuals in their thinking process, is needed in everyday life. Individuals with solid metacognition will be better able to solve problems and achieve goals. Likewise, in the school environment, students must have metacognition which will be helpful during the learning process. When working on a task, he fails to achieve the initial goal, and then this metacognition ability is essential. He will go back to the beginning, knowing his weaknesses, to take the proper steps in the future. This is in line with previous study, who said that confident students generally have an awareness of the potential and deficiencies that must be improved during learning (Arifin et al., 2022). Developing metacognition effectively takes encouragement from the individual to support its success. Students with high self-efficacy usually have strong confidence in their abilities, can solve problems and do tasks well, even though they face difficult situations. Such students will see difficulty as a challenge that must be overcome and not a threat or obstacle that must be feared (Oktariani, 2018). The difficulty the student faces will motivate him to be aware of the various types of ways that can be done.

Students who can identify the difficulties they are experiencing will motivate to make plans and strategies for solving problems and will improve their behavior appropriately. The strength is how individuals believe in their abilities in various task situations. Strength is significant for Students' academic self-efficacy (Mawaddah, 2021). Strength is an aspect that makes students who have high stability of belief they will have high expectations of what they have done. Meanwhile, students with low stability of belief do not have high expectations of what they have done (Kurniawan & Affandi, 2023). The generality aspect refers to the performance a person gives when he does a task under certain conditions. Individuals with high self-efficacy in the ability to perform tasks in situations and conditions will have different behaviours and motivations compared to those with low self-efficacy in their abilities. In other types of cases, students are required to be able to adjust in performing their tasks. Not all jobs can be completed in the same way and method when changing. Stated that students must have several methods that can be used to solve problems in each situation faced. In addition, students can succeed when solving a problem, but failure can occur when concepts change. Thus, the desired goal of this aspect allows students to use their metacognition skills (Mustofa & Hidayah, 2020).

Based on the Pearson correlation value, other variables that affect metacognition skills have a value of 0.216 or 21.6%. In addition to self-efficacy, other variables affect metacognition skills. Learning motivation and anxiety affect metacognition skills (Arifin et al., 2022). The factors that affect metacognition skills are learning readiness, learning motivation, not planning an excellent strategy to use in solving problems, not realizing errors in the concepts and results obtained, not evaluating or if evaluating will appear confused or unclear about the results obtained (Kamaliyah et al., 2022). This study has limitations, namely the sample The sample used in this study only came from students of SD Negeri 16 Jirak. So that the sample used needs to be expanded into a more varied sample and the data collection method only uses a questionnaire. The researcher can provide suggestions, namely it is hoped that teachers and parents as well as education actors can train students' abilities to have education can train students' abilities to have confidence in their abilities in completing the tasks given by the teacher and it is hoped that in further research, the author/researcher chooses other variables as internal factors. other variables as internal-external student factors that are thought to affect metacognition skills either directly or indirectly affect student self-efficacy.

4. CONCLUSION

Based on the results of the research and discussion, it can be concluded that there is an effect of self-efficacy on the metacognition skills of high school students. There is a significant influence between self-efficacy on metacognition skills. Self-efficacy has a positive effect on students' metacognition skills, meaning that the higher the self-effiacy, the higher the students' metacognition skills.

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