

Self-regulated learning and problem-solving skills in sixth grade students at Ekayana Ehipassiko School South Tangerang

Ika Purnama Sari¹, Susanto², Vike Aprilianin Marwintaria Saputri³

^{1,2}Buddhist Education Department, Jinarakkhita Buddhist College of Lampung, Indonesia

³Buddhist Communication Science Department, Jinarakkhita Buddhist College of Lampung, Indonesia

Email: ika.purnama.sari@sekha.kemenag.go.id

Abstract: Higher education plays an important role in shaping students' skills, character, and morals. Thus, there is a relationship between students' level of self-regulated learning and their problem-solving abilities. Students with a high level of self-regulated learning tend to have better problem-solving abilities than students with moderate or low levels of self-regulated learning. With self-regulated learning, students can be more independent in the learning process and able to overcome obstacles that may arise when solving problems. This study focuses on sixth-grade students at Ekayana Ehipassiko School BSD City, South Tangerang. This study uses a survey method with a quantitative approach. The data collection technique uses a questionnaire with a Likert scale. The research population included 44 respondents who were sampled from a population using a questionnaire as a data collection tool, which was carefully designed and in accordance with a quantitative approach to measure the level of influence between the two variables. In this study, there was one independent variable, namely self-regulated learning, and one dependent variable, namely problem solving in students. The results of this study show a positive and significant influence of 77.3% between the variable of self-regulated learning and the variable of problem solving in students. The magnitude of this influence can be seen from the results of a simple linear test which found a deterministic R square value of 0.773, which means that self-regulated learning influences problem solving and the remaining 22.7% is influenced by other factors.

Keywords: Self-Regulated Learning, Problem Solving

1. Introduction

Education is very important in creating an intelligent and high-quality generation [1]. In education, the teaching and learning process plays a crucial role. However, one of the biggest obstacles in learning is finding the right method to deliver the material. This challenge is further complicated by the fact that the concepts taught are often difficult for students to understand and abstract. Problem-solving skills are one of the basic abilities that every student should have in the learning process [2]. Lessons on problem solving have two main objectives. The first is as a process of seeking information, not just a short- or long-term goal. The short-term goal emphasizes data collection. In other words, learning is not only aimed at enabling students to solve problems and collect information,

but also as a step forward in understanding the essence of the problem. This is also related to the development of thinking that is built through the development of a framework of understanding related to content elements in problem-based learning.

The ability to solve problems is one of the key elements, and learning also requires Self-Regulated Learning skills, which is the ability of students to manage themselves during the learning process, often interpreted as independence in learning. This skill is crucial in mathematics learning because it can increase the depth and breadth of students' understanding [3]. Basically, self-regulated learning emphasizes the importance of an individual's ability to manage and control themselves while learning, especially when facing school assignments. There are several factors that influence a person in managing their learning experience effectively so that they can achieve maximum learning outcomes. Self-regulated learning is a process in which individuals actively take steps to learn, either with the help of others or independently [4]. This process includes analyzing learning needs, setting learning goals, searching for available learning resources, selecting and applying learning methods, and assessing the results achieved. Self-regulated learning plays a very important role in students' academic achievement, where one of the influencing factors is students' confidence in their abilities.

Self-regulated learning highlights the importance of an individual's ability to control and regulate their learning process, especially when facing various tasks at school. In the world of education, self-regulated learning plays an important role because it describes the attitude that individuals need to maximize their potential in learning material, without external pressure or influence [5]. To improve learning effectiveness, students need to have a high level of Self Regulated Learning. This will help them manage the learning process independently. In the context of religious learning, SRL skills can be seen in how well students understand effective learning methods, set goals to be achieved, and manage time efficiently [6]. These SRL skills are valuable resources that can support students' understanding and success in the future.

Self-regulated learning is a learning process that is largely determined by the thoughts, emotions, strategies, and actions developed by the individual learner themselves, with the aim of achieving specific targets. This process requires not only cognitive knowledge as a foundation, as well as metacognitive knowledge and learning strategy monitoring, but also requires encouragement from students to apply these metacognitive strategies in order to build understanding of the material being studied [7]. Self-regulated learning is crucial for students in their learning process, as it gives them the ability to regulate and guide themselves, as well as adjust and control themselves, especially when faced with difficult tasks. "Students can also relate their previous experiences to the challenges they face now and in the future, and can plan well for the future" [8]. This organized learning serves as a means for students to achieve their learning goals, namely to obtain satisfactory achievements.

According to the self-determination theory proposed by [9], individuals need support to fulfill their basic psychological needs. One of the key elements of this need is autonomy, which is related to a sense of initiative and ownership of individual actions. Many students feel unhappy and dissatisfied with their learning outcomes. They

experience feelings of incompetence, difficulty in achieving learning independence, low self-confidence, and unsatisfactory performance. One alternative that can be offered through guidance and counseling services is the application of structured learning techniques. This technique has been proven effective in helping students overcome deficiencies in their learning independence. In other words, learning is not just a process of gathering information, but a development of thinking that shapes new understanding, as stated by [10]. The learning process itself can be used to improve a person's knowledge and understanding, based on the information obtained, which is then used to solve various problems. Problem solving has been established as one of the main goals in education, namely how to overcome challenges, which is the "main reason" behind the learning process itself.

Regular and independent learning plays a very important role in the student education process. This concept encourages students to increase their independence in learning, such as organizing study schedules, studying individually, and planning the learning process [11]. Research conducted by [12] shows a significant positive relationship between student achievement in mathematics and their ability in self-regulated learning. Palmér & Van Bommel (2020) further revealed that self-regulated learning is also closely related to problem-solving skills. Students who can manage their learning process well tend to be more aware of their potential, including their strengths and weaknesses. They also have high motivation to learn and use various strategies to achieve their goals. On the other hand, students with low self-regulated learning skills often encounter difficulties when starting to solve problems and find it difficult to express their opinions.

Students who have problem-solving skills can apply their knowledge in the context of the problems they face [14]. The problem-solving approach is very relevant when applied in the learning process because it encourages students to do more than just listen, take notes, and memorize lesson material. Through problem solving, students are encouraged to think actively, receive information, communicate, and search for and process data, which ultimately leads them to [15]. Learning is designed so that students can formulate problems, seek solutions, find supporting facts, and finally draw conclusions. In this process, thinking skills that can generate new ideas as solutions are very important [16]. Therefore, it is important to measure the results of problem-solving skills in order to understand the impact of the innovative learning methods applied. In addition, the measurement of these skills also aims to determine the extent to which students are prepared to face the challenges of the 21st century.

This statement is in line with what was expressed by [17], that so far, the main focus in education has been on problem solving. Although addressing issues is often the center of attention in the curriculum, problem-solving skills are vital for learners. This is so that they are prepared to face various challenges, both during the learning process, in other fields of study, and in increasingly complex daily life [18]. Therefore, problem solving is very important in discovering and applying knowledge, and is closely related to the overall curriculum that provides context for learning and applying ideas [18]. Given the importance of problem solving for practitioners, especially teachers, they need to master effective learning strategies to overcome these challenges. The learning process

inevitably involves a variety of activities that support interaction between teachers and students. In a learning approach that places students at the center, students have a more dominant role during the learning process, while teachers act as facilitators, mentors, and leaders [19].

2. Research Method

This study applied a quantitative descriptive method through a survey conducted by taking samples from a specific population using a questionnaire as a data collection instrument, which was carefully designed and in accordance with a quantitative approach to measure the extent of the influence between two variables. In this study, there was one independent variable, namely Self-Regulated Learning, and one dependent variable related to problem solving in students.

The sample is a part of the characteristics possessed by the population and must be well reflected in the sampling. This study used a saturated sampling technique, in which all members of the population were included in the sample. This technique was chosen because the population size was relatively small, namely 44 sixth-grade students, making it possible to include all students as respondents in order to obtain more comprehensive and accurate data. Sample size refers to the number of individuals to be taken from a particular population. In the sampling process, researchers usually use saturated sampling.

In this study, the sampling technique used was Proportionate Stratified Random Sampling. This method was chosen because the population being studied showed significant diversity, originating from various different universities. By applying Proportionate Stratified Random Sampling, researchers can divide the population into more homogeneous strata based on certain characteristics. Next, samples are taken proportionally from each stratum, so that all subgroups in the population can be well represented.

This method also avoids bias that may arise if samples are taken randomly without considering strata, so that universities with fewer members are still represented. Samples are taken randomly and proportionally from each stratum, reflecting the variability in the population and increasing the validity of the research results.

Based on the theoretical framework developed by the researcher, a conceptual framework was designed for the study entitled "The Effect of Self-Regulated Learning on the Problem-Solving Abilities of Sixth Grade Students at Ekayana Ehipassiko School BSD City, South Tangerang." In the Self-Regulated Learning approach, there are several main indicators described, namely student interest, self-efficacy, self-judgment, and self-reaction. Meanwhile, problem-solving skills in students include three stages, namely the process of recognizing problems, designing solution strategies, and implementing and evaluating the solutions that have been applied.

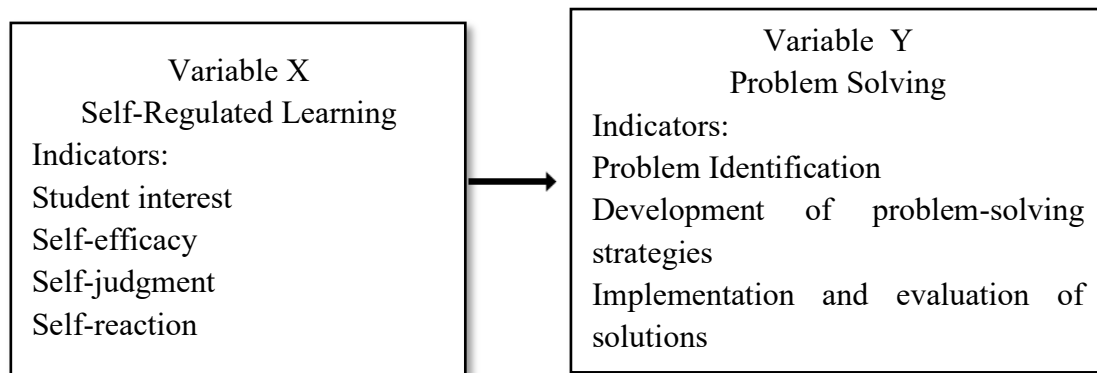


Figure 2.1 Conceptual Framework

3. RESULTS

Based on the validity test of the instrument conducted at SD Negri 3 Bentek, North Lombok, with 30 student respondents and 50 statement items consisting of 25 items on the Self-Regulated Learning variable and 25 items on the Problem Solving variable. The results for the Self-Regulated Learning variable showed that 24 items were valid and 1 item was invalid. The invalid item was number 10 with an $r_{\text{(calculated)}}$ value of -0.389

In the problem solving variable, there were 23 valid items and 2 invalid items. The invalid items were found in number 42 with an $r_{\text{calculated}}$ value of 0.212 and number 50 with an $r_{\text{calculated}}$ value of -0.005. Several of these items were declared invalid by comparing the r -count for 30 respondents at a significance level of 0.05, which is 0.320. If $r_{\text{(count)}}$ is less than or equal to $r_{\text{(count)}}$, then the item is considered invalid. Therefore, the researcher removed the invalid statement items because the other items could adequately represent each statement indicator. As a result, out of the 50 original statement items, 47 items were retained for the study.

Table 3. 1 Reliability Test

Reliability Statistics	
Cronbach's Alpha	Number of Items
.955	47

Source: Results of data processing using SPSS 26.0

Based on the instrument test in this study, reliability was assessed, resulting in a reliability coefficient based on 47 valid items. The statistical reliability analysis conducted using SPSS 26.0 produced a Cronbach's alpha value of 0.955. Since the significance value exceeds 0.05, this indicates that the measuring instrument is considered reliable. Therefore, it can be concluded that the research instrument used in this study meets the criteria for good reliability.

Table 3. 2 Normality Test

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		44
Normal Parameters ^{a,b}	Mean	.000000
	Std. Deviation	6.94651222
Most Extreme Differences	Absolute	.092
	Positive	.053
	Negative	-.092
Test Statistic		.092
Asymp. Sig. (2-tailed)		.200 ^{c,d}
a. Test distribution is Normal.		
b. Calculated from data.		
c. Lilliefors Significance Correction.		
d. This is a lower bound of the true significance.		

Source: Data analysis results for 2025 using SPSS version 26

The normality test was conducted to examine whether the student data was normally distributed. For this purpose, the one-sample Kolmogorov-Smirnov test was used, which assesses whether the data sample comes from a normally distributed population. In this analysis, the normality assumption is accepted if the significance value is > 0.05 , which means that the residual data is normally distributed. Conversely, if the significance value is > 0.05 , then the residual data is not normally distributed.

Based on the output results in the one-sample Kolmogorov-Smirnov test column above, it can be seen that the significance value (2-tailed) is 0.200. This value is greater than 0.05, so it can be concluded that the data population from the measurement tool distribution, namely the questionnaire, is normally distributed. To determine the positive effect between Self-Regulated Learning and Problem Solving, a p-plot graph is used, as shown in the following figure.

Table 3. 3 Homogeneity Test

Test of Homogeneity of Variances					
		Levene			
		Statistic	df1	df2	Sig.
VAR00001	Based on Mean	.000	1	86	.990
	Based on Median	.024	1	86	.877
	Based on Median and with adjusted df	.024	1	85.995	.877
	Based on trimmed mean	.000	1	86	.986

Source: Data processed in 2025 using SPSS 26.0

The homogeneity test is to ensure that the variance of several populations is the same. This test is carried out as a prerequisite before performing a One Way ANOVA analysis. In ANOVA analysis, it is assumed that the variance in all groups is the same. If the test result is more than 0.05, it can be concluded that the variance of the two data sets is the same. The results of the homogeneity test are presented, showing a significance value of

0.120 for Self-Regulated Learning. Since this value is greater than 0.05, it indicates that the data sets are homogeneous.

Table 3.4 Regression Equation Output

		Coefficients ^a			
		Unstandardized Coefficients		Standardized Coefficients	
		B	Std. Error	Beta	t
Model					Sig.
1	(Constant)	3.160	6.948		,455
	Self-Regulated Learning	,917	,077	,879	11,958

a. Dependent Variable: Problem Solving

Source: Data analysis results for 2025 using SPSS version 26

Based on the output in the coefficient table, a constant value of 3.160 was obtained, which means that if the Self-Regulated Learning (X) variable has a value of 0, the consistent value of the Problem Solving variable will be 3.160. The regression coefficient for the Self-Regulated Learning (X) variable is 0.917, indicating that every one-unit increase in in Self-Regulated Learning will increase the Y variable or Problem Solving variable by 0.917. The resulting regression equation is as follows:

Explanation:

Y: Problem Solving X: Self-Regulated Learning

Furthermore, the statistical hypothesis in this study is:

H_a : There is a significant effect of Self-Regulated Learning on problem-solving skills in sixth-grade students at SD Ekayana Ehipasiko School BSD City, South Tangerang.

H_0 : There is no effect of Self-Regulated Learning on problem-solving abilities in sixth-grade students at SD Ekayana Ehipasiko School BSD City, South Tangerang.

The hypothesis testing criteria are to reject H_0 if $t_{count} > t_{table}$ or if the significance is < 0.05 . Based on the data analysis, a t_{count} value of 11.958 was obtained, with a degree of freedom (df) = $n - 2$ or $df = 173$. The $t_{(table)}$ value at a significance level of $\alpha = 0.05$ is 1.653. Thus, because $t_{(count)} 11.958 > t_{(table)} 1.653$ and the significance level is $0.000 < 0.05$, H_0 is rejected and H_a is accepted. A positive regression coefficient indicates that Self-Regulated Learning has a positive effect on problem solving in students.

Based on the hypothesis testing results, it can be concluded that Self-Regulated Learning has a positive effect on problem solving in students. Ekayana Ehipassiko School BSD City South Tangerang Elementary School. The hypothesis testing criteria use alpha 5% (0.05), which is to reject H_0 if the significance is ≤ 0.05 by reading the following ANOVA table.

Table 3.5 ANOVA Analysis Output

ANOVA ^a					
Model		Sum of Squares	df	Mean Square	F
1	Regression	7063.804	1	7063.804	142,983
	Residual	2,074,923	42	49,403	
	Total	9,138,727	43		

a. Dependent Variable: Y Problem Solving

b. Predictors: (Constant), X Self-Regulated Learning

Source: Data processed in 2025 using SPSS version 26

From the ANOVA test results, an f value of 142.983 with a significance of 0.000 was obtained. Since the SPSS program automatically provides significance interpretations, we do not need to match it with the F table. These results show that the significance value is less than 0.05, so the null hypothesis (H_0) is rejected and the alternative hypothesis (H_a) is accepted. This means that there is a significant effect between Self-Regulated Learning and Problem Solving ability. Next, let's look at the following residual statistics.

Table 3.6 Coefficient of Determination R Square

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Standard Error of the Estimate
1	.879 ^a	.773	.768	7.029

a. Predictors: (Constant), X Self-Regulated Learning

b. Dependent Variable: Y Problem Solving

Source: Results of data processing in 2025 using SPSS version 26

The coefficient of determination in Table 4.18 shows an R Square value of 0.773. This means that 77.3% of the Problem Solving variable in sixth grade students at Ekayana Ehipasiko School BSD City South Tangerang is influenced by Self-Regulated Learning. Meanwhile, the remaining 22.7% is influenced by other variables not included in this study. The quantitative analysis results also show that the value in the normality test obtained from the residual significance value is 0.200, which is greater than 0.05. Therefore, it can be concluded that the data is normally distributed.

Based on the ANOVA table in the linearity test, a significance value of 0.871 was obtained for the deviation from linearity. Because this significance value is greater than 0.05 ($0.871 > 0.05$), it can be concluded that there is a linear relationship between the variables of self-regulated learning and problem solving.

In addition, based on the results of the analysis of $t_{\text{calculated}}$ obtained at 11.958 with a significance level of 0.000 and compared with t_{table} at a significance level of 0.05 for $n = 44$. Because the significance value is < 0.05 , $H_{(a)}$ is accepted, which means that there is a significant effect of self-regulated learning on problem solving in students at Ekayana Ehipasiko School BSD City, South Tangerang.

The R square score of 0.786 shows that self-regulated learning has a positive influence of 78.6% on problem solving in students, while the remaining 60.5% is influenced by

other factors. The resulting regression model can be written as $Y = 55.885 + 0.563X$, which means that every one-unit increase in self-regulated learning will reduce problem solving in students by 0.563 units. This illustrates how self-regulated learning affects problem solving in students at Ekayana Ehipassiko School BSD.

4. Discussion

4.1. *The Effect of Self-Regulated Learning on Problem Solving in Students*

From data processing and hypothesis testing, it appears that self-regulated learning has a positive and significant impact on students' problem-solving skills. This shows that independent learning is one of the elements that can improve students' problem-solving abilities at school. It can be concluded that the more effectively students apply the principles of Self-Regulated Learning, the higher their ability to solve problems, as seen in the students of Ekayana Ehipassiko School BSD City Elementary School.

The results of this study confirm previous findings related to the application of Self-Regulated Learning. Research by [6], [12] shows that students who are taught using this learning model achieve satisfactory results. Therefore, this self-regulated learning model is more influential in improving students' problem-solving abilities. From the literature collected, it is known that Self-Regulated Learning is very important for every learner. Findings from several studies above explain that Self-Regulated Learning has a significant impact on learners' problem-solving abilities at all levels of education.

However, in a study conducted by [20], it was found that self-regulation or independence, meaning self-regulated learning, is relevant at all levels of education, whether elementary, middle, or high school, and can influence students' abilities. This is because children will begin to experience puberty and start looking for new information that can impact their development process, including in terms of learning.

In this way, there is a correlation between students' level of self-regulated learning and their problem-solving abilities. Students who demonstrate high levels of SRL are usually better at solving problems than those with medium or low levels of SRL. With self-regulated learning skills, students can be more independent in the learning process and able to face obstacles that may arise when discussing problems [21]. They also usually have a strong motivation to learn and are able to handle complex problems.

According to [22] the process of implementing self-regulated learning techniques can be explained through several stages of self-regulated learning, of which there are four stages described, namely: The first stage, the self-regulation process begins with planning, which includes important activities such as a series of goals to be achieved or specific targets required after completing the task. The cognitive aspect in this stage is the activation of existing knowledge about the material and metacognitive knowledge. The motivational/affective aspect relates to strengthening motivational beliefs and the emotions involved. Meanwhile, the behavioral aspect includes planning the time and effort needed to perform tasks.

According to [1], self-regulated learning is described as a situation in which a learning individual becomes the controller of their independent learning activities, monitors their

motivation and academic goals, manages human and material resources, and plays an active role in decision-making and the implementation of the learning process. From a literature review, several models of self-regulated learning can be identified, which explain self-regulation in learning by recognizing three main stages: planning, implementation, and self-reflection.

In short, there are various levels of problem-solving skills among students based on their respective independent learning capacities [2]. In addition, it is important to underline the importance of self-regulated learning in improving students' problem-solving abilities and academic performance. Therefore, the development of self-regulated learning can help improve students' problem-solving abilities at various levels.

In the Sallatha Sutta (S.6.36), which explains about arrows Just as they shoot a person with an arrow and, immediately after that, they shoot him with another arrow, so that he will feel the pain of two arrows; in the same way, when touched by pain, an ordinary untrained person will grieve, mourn, and lament, beating their chest, becoming desperate. Thus, they feel two pains, physical and mental (Bhikkhu Thanissaro, 2020).

In the Kalama Sutta (D.III.192), the Buddha conveyed the concept of the "six directions of respect," which includes parents, teachers, spouses, friends, workers, and the wise (Bhikkhu Bodhi, 2021). Each of these directions has interrelated responsibilities, where solutions to various problems arise through maintaining balance and applying values such as honesty, compassion, and wisdom in daily interactions. By following these teachings, one can face various problems by considering ethical principles and moral values in every decision made. This is in line with the Buddha's teachings as stated in the Dhammapada, which reads, "He who is enthusiastic, who is always mindful, who is pure in his behavior, who has self-control, who lives in accordance with the Dharma, and is always alert, his happiness will increase." (Dh. 24). Overall, this poem emphasizes the importance of enthusiasm, awareness, pure behavior, self-control, adherence to ethical values, and vigilance as the basis for problem solving in students. This teaching also provides a strong foundation for students to develop critical thinking skills and resolve conflicts in a harmonious manner.

Self-regulated behavior is characterized by the ability to overcome obstacles and problems, have self-confidence, and be able to do things independently without the help of others. Meanwhile, self-regulated learning is the ability to have knowledge about effective learning strategies and know how and when to use that knowledge so that students are able to regulate themselves in learning.

In principle, self-regulated learning emphasizes the importance of an individual's ability to regulate and control themselves, especially when facing tasks. This is in line with the statement that independent learning is a process of careful self-planning and monitoring of cognitive and affective processes in completing an academic task. Students with high self-regulated learning tend to learn better. This is supported by studies that find that individuals with high self-regulated learning tend to learn better, are able to monitor, evaluate, and manage their learning effectively, save time in completing tasks, manage their learning and time efficiently, and obtain high scores.

Problem-solving skills are very important for everyone to have. Not only because most of human life will be faced with problems that need to be solved, but problem-solving can also improve analytical skills and can help to solve problems in various other situations. This is in line with the idea that teaching students to solve problems will enable them to become more analytical in making decisions in life.

Problem solving plays a central role in the Mathematics Curriculum and is at the core of mathematical activities, making it important for learning to pay special attention to this skill. A person who has the ability to solve problems can be called a problem solver when they can understand the problem at hand, plan a solution, implement the plan, and reflect on the problem-solving process. Problem-solving skills are an important foundation in the learning process that is vital for students, because by successfully solving problems, students gain experience and can use their knowledge and skills to apply in everyday life.

Problem solving is a learning method that supports the development of students' abilities in solving mathematical problems. This is considered important in mathematics learning, where students need to learn strategies to understand, choose approaches, design solution strategies, and complete models to overcome problems. This approach encourages optimal active engagement of students, allowing them to explore, observe, experiment, and investigate. In the context of mathematics, problem solving plays a major role in improving students' higher-order thinking skills and helping them explore knowledge and skills in solving problems that may be new to them.

Problem solving is seen as the key to understanding mathematical concepts, where students are expected to apply these concepts to solve problems. This ability includes the process of understanding problems, designing mathematical models, solving models, and finding solutions. In addition, problem solving is also a learning method that allows students to actively engage in exploration, observation, experimentation, and investigation, which can ultimately improve students' higher-order thinking skills in exploring their knowledge and skills to solve non-routine problems.

4.2. The Significant Influence of Self-Regulated Learning on Problem Solving in Students

Based on the above analysis, it is known that the influence of self-regulated learning on problem-solving skills in sixth-grade students at Ekayana Ehipassiko School BSD City, South Tangerang, is in the moderate category with a percentage of 36%. The Student Interest indicator shows that students at Ekayana Ehipassiko Elementary School in South Tangerang answered in the moderate category with a percentage of 36%, meaning that Ekayana Ehipassiko Elementary School students sometimes have an interest in self-regulated learning. On the self-efficacy indicator, students at Ekayana Ehipassiko Elementary School in South Tangerang answered in the moderate category with a percentage of 51%, meaning that some Ekayana Ehipassiko students have not yet found their self-confidence.

This can be interpreted as meaning that Ekayanna Ehipassiko Elementary School students in BSD City, South Tangerang. On the indicators of self-judgment and self-reaction, students at Ekayana Ehipassiko Elementary School in BSD City, South

Tangerang, responded in the high category with a percentage of 35% and 20%. This can be interpreted to mean that students at Ekayana Ehipassiko Elementary School in BSD City, South Tangerang, still lack understanding of themselves.

Based on the above assessment, it can be concluded that the impact of regular learning on the ability of sixth-grade students to solve problems at Ekayana Ehipassiko School BSD City Tangerang Selatan is in the moderate category with a percentage of 36%. For the student interest indicator, the results show that students at Ekayana Ehipassiko Elementary School in South Tangerang are in the moderate category with a percentage of 36%, which means that they sometimes show interest in regular learning. As for the self-confidence indicator, students at Ekayana Ehipassiko Elementary School in South Tangerang show a moderate category with a percentage of 51%, which indicates that some of them have not yet fully found their self-confidence.

This shows that students from Ekayana Ehipassiko Elementary School BSD City South Tangerang have areas that need improvement in terms of their self-understanding. On the self-assessment and self-reaction indicators, students at Ekayana Ehipassiko Elementary School BSD City South Tangerang are in the high category with percentages of 35% and 20%, respectively. This means that they still lack understanding of themselves.

5. Conclusion

Based on the results of the study on self-regulated learning in problem solving among students, it can be concluded that there is a significant positive influence of self-regulated learning on the problem-solving abilities of sixth-grade students at SD Ekayana Ehipassiko School BSD City Tangerang Selatan. The extent of the influence of self-regulated learning on problem solving in students can be seen from the value of 77.3% of self-regulated learning influencing problem solving in students, while 22.7% is influenced by other factors that were not studied.

The results of this study have important implications for students at Ekayana Ehipassiko School BSD City Tangerang Selatan, because this approach focuses on character development and student understanding through Buddhist teachings, such as discipline, self-control, compassion, and wisdom, as well as understanding the values of Buddhayana in fostering creativity. The results of this study have a significant impact on the world of education. The results of this study can be utilized by students at Ekayana Ehipassiko School BSD City Tangerang Selatan so that they can apply it in every lesson and in their daily lives in the community. The results of this study have an impact on students. The results of this study show that the application of self-regulated learning can encourage students to be active in independent learning when there is no teacher. The positive influence of self-regulated learning on problem solving can be utilized by students to improve their learning. In addition, the results of this study are also important for the integration of a good human resource management system to support their effectiveness. Based on the above implications, there are also weaknesses in conducting this study. These weaknesses are related to the data collection process through questionnaires using Google Forms, where respondents' responses do not always reflect

their true opinions and because the researcher cannot control the speed at which respondents provide answers.

Based on the findings on how self-regulated learning affects problem solving in students at Ekayana Ehipassiko School BSD City South Tangerang, the researcher provides the following suggestions: Students at Ekayana Ehipassiko School BSD City South Tangerang should be able to apply self-regulated learning. The results of this study are expected to increase readers' understanding and perspective on self-regulated learning in relation to problem solving in students. Future researchers are expected to explore and examine each variable in greater depth, refining the research that has been conducted with the latest data, in accordance with existing conditions, so that the benefits and results of the research can be directly felt by the researchers.

6. Recommendations

Based on the results of the study on the impact of structured independent learning on the problem-solving abilities of students at Ekayana Ehipassiko School BSD City South Tangerang, the research team proposes the following recommendations: For students of Ekayana Ehipassiko School BSD City South Tangerang, self-regulated learning should be implemented. The findings of this study are expected to enrich the readers' insight and perspective regarding the application of structured independent learning in improving students' problem-solving skills. Future researchers are expected to further explore and examine each variable, refine the research using the latest data, and adapt it to the situation in the field so that the contributions and findings of this study can be directly applied by researchers.

References

- [1] Andriyani, "Pengaruh Model Self-Regulated Learning Terhadap Kemampuan Pemecahan Masalah dan Motivasi Belajar Siswa Pada Mata Pelajaran Matematika di SMA," *Program Studi Teknologi Pembelajaran Universitas Pendidikan Ganesha*, vol. 12, pp. 1–12, 2022.
- [2] N. M. Al-Rawahi and S. M. Al-Balushi, "The Effect of Reflective Science Journal Writing on Students' Self-Regulated Learning Strategies," vol. 10, no. 3, pp. 367–379, 2015, doi: 10.12973/ijese.2015.250a.
- [3] E. L. Adhar, "Pembelajaran Matematika dengan Metode Penemuan Terbimbing untuk Meningkatkan Kemampuan Representasi dan Pemecahan Masalah Matematis Siswa SMP," *Jurnal Penelitian Pendidikan*, vol. 13, no. 2, pp. 1–10, 2012, [Online]. Available: http://jurnal.upi.edu/file/Leo_Adhar.pdf
- [4] H. Darman, "Self-Regulated Learning Siswa Dalam Pembelajaran Matematika," *Transformasi: Jurnal Pendidikan Matematika dan Matematika*, vol. 7, no. 2, pp. 255–263, 2024, doi: 10.36526/tr.v7i2.3274.
- [5] Dinata, "Kajian Teori: Kemampuan Pemecahan Masalah Siswa SMP Ditinjau dari Self-Regulated Learning pada Pembelajaran Preprospec Berbantuan TIK," in *PRISMA, Prosiding Seminar Nasional*, 2022, pp. 290–296. [Online]. Available: <https://journal.unnes.ac.id/sju/index.php/prisma/article/view/54188>
- [6] Fauzi, "Teknik Self-Regulated Learning untuk Meningkatkan Kemampuan Self-

- Regulated Learning dan Kemandirian Belajar Siswa dalam Situasi Belajar Online Covid 19,” *Ideas: Jurnal Pendidikan, Sosial, dan Budaya*, vol. 8, no. 3, p. 987, 2022, doi: 10.32884/ideas.v8i3.897.
- [7] H. Hendriana, E. E. Rohaeti, and U. Sumarmo, *Hard Skills dan Soft Skills Matematik Siswa*. Bandung: Refrika Aditama, 2019.
- [8] N. Hidayati, N. K. Anisah, N. R. Syarif, and W. N. Shanti, “Pembelajaran Lidimatika untuk Meningkatkan Kemampuan Siswa SD dalam Operasi Perkalian,” vol. 5, no. 1, pp. 55–63, 2018, [Online]. Available: <http://jurnal.uns.ac.id/jpm>
- [9] Kamelia and Pujiastuti, “Systematic Literature Review: Pengaruh Self-Regulated Learning Terhadap Kemampuan Pemecahan Masalah Matematika Siswa Berdasarkan Jenjang Pendidikan,” vol. 11, no. 2, pp. 21–30, 2024.
- [10] Khoerunnisa, “Self-Regulation Learning: Upaya Membangun Kemandirian Belajar Al-Qur’an di Kalangan Remaja,” pp. 75–80, 2021.
- [11] M. A. Maulyda, *Paradigma Pembelajaran Matematika Berbasis NCTM*. CV IRDH, 2020.
- [12] Papalia, “Meningkatkan Self-Regulated Learning pada Siswa Melalui Strategi Belajar Berdasar Regulasi Diri,” *Journal on Education*, vol. 5, no. 3, pp. 7056–7068, 2023, doi: 10.31004/joe.v5i3.1494.
- [13] H. Palmér and J. Van Bommel, “Young Students Posing Problem-Solving Tasks: What Does Posing a Similar Task Imply to Students?,” *ZDM Mathematics Education*, vol. 52, no. 4, pp. 743–752, 2020, doi: 10.1007/s11858-020-01129-x.
- [14] Sumarni and Sumarmo, “Penalaran Matematik dan Kemandirian Belajar Siswa SMP Melalui Pembelajaran Generatif,” *Edusentris*, vol. 3, no. 3, pp. 290–299, 2024, doi: 10.17509/edusentris.v3i3.239.
- [15] Sahrudin, “Strategi Pembelajaran dan Self-Regulated Learning dalam Pemecahan Masalah pada Matematika,” vol. 7, no. 2, pp. 53–61, 2024.
- [16] Bodhi, *Samyutta Nikaya Jilid 3 Tentang Kelompok-kelompok Unsur Kehidupan (Khandhavagga)*, vol. 3. Jakarta Barat: DhammaCitta Press, 2010.
- [17] M. Walse, *Digha Nikāya Khotbah-khotbah Panjang Sang Buddha*. Jakarta Barat: DhammaCitta Press, 2009.
- [18] A. Zaidah, A. Hidayatulloh, and M. Rasyidi, “Jurnal Ilmiah Global Education,” vol. 2, no. 2, p. 171, 2022.
- [19] L. N. Zamnah, “Hubungan antara Kemampuan Pemecahan Masalah Matematis dengan Self-Efficacy,” 2019.
- [20] B. J. Zimmerman, “Attaining self-regulation: A social cognitive perspective,” in *Handbook of Self-Regulation*, M. Boekaerts, P. Pintrich, and M. Zeidner, Eds., San Diego: Academic Press, 2000, pp. 13–39.
- [21] Md. M. Rahman, M. K. Singh, and S. Z. Ahmad, “Self-regulation, technology use, and engagement in digital learning contexts,” *Educational Technology Research and Development*, vol. 71, no. 2, pp. 793–812, 2023, doi: 10.1007/s11423-022-10155-5.

- [22] Z. Ç. Özcan, “The Relationship between Mathematical Problem-Solving Skills and Self-Regulated Learning through Homework Behaviours, Motivation, and Metacognition,” *Int J Math Educ Sci Technol*, vol. 47, no. 3, pp. 408–420, 2016.