



THE INFLUENCE OF SELF-EFFICACY AND POLYA STRATEGY LEARNING ASSISTED BY MATHCITYMAP MEDIA ON PROBLEM-SOLVING ABILITY

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Abstract: The purpose of this study was to determine how the application of Polya strategy learning assisted by MathCityMap media and self-efficacy impacts the mathematical problem-solving abilities of students in class VIII of SMPN 2 Pontianak on the material of Two-Variable Linear Equation Systems (SPLDV). This study is quantitative and uses a quasi-experimental design, with a post-test only control design. The research design uses a 2x2 factorial design. The population in this study were students of class VIII of SMPN 2 Pontianak. Samples were taken using random sampling techniques. Statistical tests used two-way ANOVA and independent T-test. The results of the study concluded that: (1) There are differences in students' problem-solving abilities in learning using Polya strategy learning and expository learning; (2) There is an influence on the problem-solving abilities of students who have high and low self-efficacy; (3) There is no interaction between Polya strategy learning assisted by MathCityMap and self-efficacy on students' problem-solving abilities; (4) There is no difference in problem-solving ability between students who have high self-efficacy who are involved in Polya strategy learning assisted by MathCityMap media and expository learning; (5) There is a difference in problem-solving ability between students who have low self-efficacy who are involved in Polya strategy learning assisted by MathCityMap media and those involved in expository learning.

Keywords: *Self-efficacy; Polya Strategy; MathCityMap; problem solving; SPLDV*

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Introduction

In accordance with the Graduate Competency Standards outlined in Regulation of the Minister of Education and Culture (Permendikbud) No. 21 of 2016, students are expected to apply their understanding and skills to solve problems encountered in real-life situations (Badrudin et al. 2024). Students often fail to solve problems due to a lack of practice and the inability to apply effective problem-solving strategies (Darma et al., 2019). In an increasingly competitive era, problem-solving skills in learning are becoming increasingly important (Fithriyana 2018). However, various obstacles such as a lack of varied learning methods, limited school facilities and infrastructure, and high teacher workloads often hinder effective learning. Therefore, improving problem-solving skills, particularly in the mathematics learning process, is crucial.

According to Polya (1973), The learning steps in problem-solving skills involve the ability to understand and interpret existing problems, design appropriate steps or strategies, implement the plan

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systematically, and conduct reviews to evaluate the effectiveness of the solution and correct deficiencies if necessary. Based on this indicator, teachers can change their learning approach to make it more flexible and effective, with the aim of encouraging students to actively participate in solving problems. Efforts that can be made to make the learning process interesting and interactive are to involve learning media (Manurung 2021). One of the uses of technology in learning media is the use of MathCityMap media. Paramitha & Agoestanto (2023), emphasizes that the use of MathCityMap media as a learning medium offers an innovative approach that combines technology and real contexts to strengthen students' skills in solving mathematical and everyday life problems.

MathCityMap is a mobile technology-powered application that helps students improve their math problem-solving skills by providing realistic visualizations of math concept (Cahyono and Miftahudin 2018). Through this application, students are directly involved in finding solutions to problems in their environment (Cahyono and Ludwig 2016). Research by (Barlovits and Ludwig 2023), found that students' logic, desire to learn and ability to solve mathematical problems can be improved by using mathematical trails such as MathCityMap.

However, the success of using MathCityMap media in improving problem-solving skills, its effectiveness is caused by internal factors, one of which is self-efficacy (Barlovits and Ludwig 2023). Increasing self-efficacy stimulates students to be actively involved in solving existing problems, and encourages them to dare to take risks and be open to new things (Fitranty Adirestuty 2017). However, in reality, students are sometimes not very confident in the potential they have (Shaleha, Djudin, and Hamdani 2022). One aspect of the mathematics material for Class VIII high school is the Two Variable Linear Equation System (SPLDV) which has contextual-based problem solving (Lestari and Afrilianto 2021). In line with this Monisa et al., (2023), explained that this material relates to the basic skills students need to possess, namely understanding linear equation systems and applying effective strategies to solve problems. Some students have difficulty solving problems in the SPLDV material, which is reflected in their low performance on math exams and assignments.

Based on information from mathematics teachers at SMPN 2 Pontianak, students' mastery in solving problems is still low when given problems related to SPLDV. The contributing factors are students' difficulties in identifying variables, constructing equations (mathematical models), and selecting appropriate problem-solving techniques. Furthermore, students face challenges when given story-based problems, as they must apply their mathematical knowledge to real-world situations. According to teachers' experiences, when students encounter problems that differ from the examples, they become confused when working on relevant problem-solving problems. Teachers also reported that the teaching and learning process involves only regular textbooks without the aid of learning media, with only occasional use of PowerPoint. Teachers typically use expository learning methods in mathematics instruction.

Based on this data, effective learning strategies must be implemented to improve students' problem-solving skills in SPLDV material. In this context, Polya's learning approach, which prioritizes improving problem-solving skills, is considered relevant and appropriate for implementation. According to Darma et al., (2019), Polya's problem-solving skills not only facilitate a deeper understanding of concepts, but also help students become creative and critical when facing problems. By utilizing Polya's methodology, students can more easily understand the steps in solving SPLDV, thereby increasing their confidence in mathematics. (Fauziah and Kurniasih 2022).

Based on research on several titles, it is believed that there are not many studies that examine the influence of the superiority of MathCityMap media and self-efficacy in solving problems related to SPLDV material. This research integrates both and tests their interactive effects on students with different levels of self-efficacy. Furthermore, the use of MathCityMap media in the context of SPLDV is still relatively limited in the literature. MathCityMap not only provides various challenges for students to solve, but also allows them to see the relationship between theory and real-world applications, thereby

improving their understanding of SPLDV material. Research by Nisa et al., (2020), revealed that when students are involved in the problem-solving process and see positive results from their efforts, they are more likely to feel capable and confident in their math skills. Thus, the combination of problem-solving-based learning strategies and innovative media such as MathCityMap is believed to contribute to improving student learning outcomes and self-efficacy and is considered feasible.

Method

This research is quantitative with a quasi-experimental design. It employed a post-test only control design. It involved two independent variables: Polya's learning strategy and expository learning, as well as self-efficacy levels classified as high and low. The factorial design paradigm used was a 2 x 2 design, as illustrated in the following table.

Table 1. Factorial Design 2x2

Class	Self-efficacy	
	High	Low
Polya strategy learning assisted by MathCityMap media	\bar{Y}_{E-T}	\bar{Y}_{E-R}
Expository learning	\bar{Y}_{K-T}	\bar{Y}_{K-R}

The population in this study were 217 eighth-grade students of SMPN 2 Pontianak. The sampling technique in this study was an in-check group. The selected classes were VIII A and VIII B, each consisting of 30 students, resulting in a total sample of 60 students. This study collected data through indirect communication. The instruments in this study were lesson plans, response questionnaires (for validators and to record student self-efficacy), and problem-solving ability tests that had been tested and validated previously.

Respondents simply provided a checklist (√). This questionnaire had two statement categories. The statements in the instrument were structured in positive and negative forms. To obtain data on self-efficacy, researchers used a questionnaire distributed to students using a Likert scale. The following are indicators for assessing self-efficacy in the table 2.

Table 2. Self-efficacy Instrument Indicator

indicator	question number
Confidence in the ability to understand mathematical material	
Positive statement	
a. Able to understand mathematical material	1
b. Be confident in understanding mathematical material at various levels of difficulty	2
Negative Statements:	
a. Not sure can understand the math material	3
Confidence in the ability to complete math tasks	
Positive Statements	
a. Be confident that you can do your math homework well	4
b. Confident of being able to do difficult math problems	5
Negative Statements:	
c. Not sure about being able to solve math problems that are different from the examples .	6
Confidence in successfully achieving goals in mathematics learning	
Positive Statements	
a. Be confident in achieving the targets set in learning mathematics.	7

b. I am sure I can improve my math grades if I study diligently	
Negative Statements:	9
c. Not confident that I can get a good score on the math test even though I have studied hard.	8
Belief in resilience and tenacity in learning mathematics	
Positive Statements	
a. Be confident that you will continue to study mathematics material even though it is difficult	10
b. Be sure to look for other strategies or methods when you cannot solve a math problem	11
Negative Statements:	12
c. If you can't do a math problem, you will copy your friend's work	
d. Feeling hopeless when getting a bad math grade	13

For each statement, a Likert scale with four response options was used: Strongly Agree, Agree, Disagree, and Strongly Disagree. Scores ranged from 4 to 1 (Sugiyono, 2021).

Table 3. Self-efficacy questionnaire scores

information	Positive Statement Score	Negative Statement Score
Strongly agree	4	1
Agree	3	2
Disagree	2	3
Strongly Disagree	1	4

According to Hendriana et al., (2017), A test is a series of questions answered by students to measure their understanding and mastery of material relevant to learning objectives. This study tested students' ability to solve problems using SPLDV material. The test was in descriptive form and consisted of four questions, lasting 80 minutes. The indicators for the problem-solving ability test on SPLDV material are shown in Table 4 below

Table 4. Self-efficacy Instrument Indicator

KPM indicators	Student Activities	Score
Understanding the Problem	Students do not write down things they know	0
	Students write down things that are known and asked about but are only interpreted in general terms.	1
	Students write down things that are known and asked but are incomplete.	2
	Students write down things they know and ask about completely and correctly	3
Maximum score		3
Devising a Plan	Students do not make a solution plan	0
	Students make a solution plan but the analogy is wrong.	1
	Students create a solution plan that leads to a correct but incomplete answer.	2
	Students create a complete solution plan that leads to the correct answer	3
Maximum score		3
Carrying out the Plan	Students do not write down solutions	0
	Students write solutions but the procedures are unclear.	1
	Students write a solution procedure that leads to the correct answer with steps that are not yet correct (students guess the values of x and y)	2

KPM indicators	Student Activities	Score
	Students write correct procedures and obtain correct results.	3
Maximum score		3
Looking Back	Students do not re-check the solution to the problem/question	0
	Students check back with incomplete steps	1
	Students re-check the questions/problems/questions completely and correctly.	2
Maximum score		2
Maximum total score		11

Validity refers to how precise or valid a measuring instrument is in assessing something. (Novanto 2024). Item validity testing was carried out using Pearson Product Moment correlation with the help of SPSS software. In addition, the results were also compared with the r table at a significance level of 5% and degrees of freedom (df) = N - 2 = 28, which is 0.361. The item is declared valid if the calculated r > r table and is significant (Sugiyono, 2021). Overall, both the problem-solving test instrument and the self-efficacy questionnaire can be analyzed using SPSS using the Cronbach's Alpha coefficient. The reliability of the self-efficacy questionnaire is said to be reliable if the Cronbach's Alpha value is ≥ 0.7 (Machali 2021).

After ensuring instrument reliability, the next step is to conduct a normality and homogeneity test to determine whether the data distribution meets the assumptions of normality before conducting further statistical analysis. To ensure that the data follows a normal distribution, a Kolmogorov–Smirnov test is performed. A significance value is considered normal if it is greater than 0.05. Conversely, if the significance value is less than 0.05, the data does not have a normal distribution (Djudin & Yani, 2022). In the initial stage of analysis, the homogeneity test is used to determine whether the variances of two or more groups are equal. If the variances are equal, the data is considered homogeneous. This study tested for homogeneity using the Levene's test. This test aims to determine the similarity of variances between groups (Zulkifli et al. 2025). Based on the criteria used, data is said to be homogeneous if the significance value (Sig) is greater than 0.05 (Djudin & Yani, 2022).

By understanding students' self-efficacy levels, teachers can set clear and specific learning goals and provide feedback on their learning process. According to Novanto, the formula used to find the score range by Novanto (2024), are as follows:

$$i = \frac{\text{highest score} - \text{lowest score}}{\text{many categories}}$$

So in the research using the highest score is 52 and the lowest score is 13 with 2 categories (favorable and unfavorable), obtained:

$$i = \frac{52 - 13}{2}$$

$$i = 19$$

Table 5. Classification of Students' Self-efficacy Levels

Score Range	Category
33 - 52	High

The analysis used is Two Way ANOVA (univariate) because the data obtained is normally distributed and will evaluate the influence of each variable and its interaction in the context of this study using Two Way ANOVA (univariate). Meanwhile, to understand how students' self-efficacy affects their ability to solve problems, as well as to compare the effectiveness of Polya strategy learning assisted by MathCityMap media compared to expository learning, an independent sample t-test will be analyzed.

Results and Discussion

Through this research, the researcher wants to explore the impact of self-efficacy and Polya strategy learning assisted by MathCityMap media on students' problem-solving skills in SPLDV material in class VIII of SMPN 2 Pontianak. In this study, the data will be analyzed in three ways: (1) measuring problem-solving skills; (2) measuring students' self-efficacy; and (3) evaluating the average variation between the experimental and control classes. The results and research obtained are as follows.

Problem Solving Skills

To provide an overview of the comparison of problem-solving abilities between students in the experimental class and the control class, the following data presents the average scores and number of students in each class in Table 6.

Table 6. Recapitulation of the Average Post-test of the Experimental and Control Classes

Class	Mean (\bar{X})	Standard Deviation (SD)	N
Polya strategy learning assisted by MathCityMap media	77	6,7	30
Expository learning	68	10,5	30

The results of this study indicate that the average problem-solving ability of students in the experimental and control classes differed significantly. A two-mean difference test will be conducted to determine whether the experimental and control classes have significant differences in students' problem-solving abilities on the SPLDV material. The post-test score for the experimental group averaged 77, while the post-test score for the control group averaged 68.

Student Self-efficacy Questionnaire

Self-efficacy levels were determined based on the results of self-efficacy questionnaires completed by students in the experimental and control classes, each of which had 30 students. The data presented represent students' responses to the statements in the questionnaires. The analysis of these questionnaires was used as the basis for determining the self-efficacy categories of students in both classes, which are then presented in Table 7 below.

Table 7. Self-Efficacy Questionnaire Results

No	Kelas	Jumlah Siswa	Persentase	Kategori
1	Polya strategy learning assisted by MathCityMap media	17	56,67%	High Self-efficacy
		13	43,33%	Low Self-efficacy
2	Expository learning	11	36,67%	High Self-efficacy
		19	63,33%	Low Self-efficacy

Referring to the percentage of self-efficacy questionnaire results, it can be explained that in the experimental group there were 17 students (56.67%) who were in the high self-efficacy category, while 13 other students (43.33%) were classified as having low self-efficacy. On the other hand, the control

group showed that only 11 students (36.67%) had a high level of self-efficacy, while the majority, namely 19 students (63.33%), were in the low self-efficacy category.

Analysis of the Average Difference between the Experimental Class and the Control Class

To analyze the differences in means, the Two-Way ANOVA test method was used. Before applying this test, assumptions were first tested for data normality and homogeneity. The results of these two prerequisite tests are presented below.

Table 8. Results of Data Normality Test Calculation

N	Learning model	Sig
30	Polya strategy learning assisted by MathCityMap media	0,066
30	Expository learning	0,161

The normality test value for the class implementing the Polya strategy with the help of MathCityMap media showed a significance value of 0.066. Since $0.066 > 0.05$, the data in that class met the assumption of normality. Similarly, in the class using expository learning, a significance value of 0.161 was obtained, which also exceeded 0.05. Based on these two results, it can be concluded that the data from both classes were normally distributed. With the normality assumption met, the next step was to test the homogeneity of the data using the Levene Test through SPSS software.

Table 9. Results of Homogeneity Test Calculation

Lavene Statistic	df 1	df 2	Sig
3,411	1	58	0,070

The Levene's test results show a significance value of $0.070 > 0.05$. This indicates that the variance between the experimental and control groups is homogeneous. After the data is declared to meet the assumptions of normality and homogeneity, the next step is to conduct a Two-Way ANOVA test to test the hypothesis in this study.

Hypothesis Testing

This hypothesis test uses Two-Way ANOVA Variance Analysis and an independent T-test. For decision making in the analysis, if the significance value is less than 0.05 ($p < 0.05$), then H_0 is rejected and H_a is accepted (Novanto 2024). The following results of data analysis through the SPSS output of the Two Way Anova test can be seen in the following image.

Between-Subjects Factors

	Value Label	N
Model Pembelajaran	1 Polya	30
	2 Ekspositori	30
Self Efficacy	1 Tinggi	28
	2 Rendah	32

Descriptive Statistics

Dependent Variable: Tes Kemampuan Pemecahan Masalah

Model Pembelajaran	Self Efficacy	Mean	Std. Deviation	N
Polya	Tinggi	78.06	6.495	17
	Rendah	75.69	6.725	13
	Total	77.03	6.589	30
Ekspositori	Tinggi	72.55	10.319	11
	Rendah	65.63	9.867	19
	Total	68.17	10.422	30
Total	Tinggi	75.89	8.482	28
	Rendah	69.72	9.962	32
	Total	72.60	9.732	60

Tests of Between-Subjects Effects

Dependent Variable: Tes Kemampuan Pemecahan Masalah

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	1553.541 ^a	3	517.847	7.187	.000
Intercept	305141.196	1	305141.196	4235.069	.000
Model	868.470	1	868.470	12.054	.001
SelfEfficacy	308.377	1	308.377	4.280	.043
Model * SelfEfficacy	74.040	1	74.040	1.028	.315
Error	4034.859	56	72.051		
Total	321834.000	60			
Corrected Total	5588.400	59			

a. R Squared = .278 (Adjusted R Squared = .239)

Figure 1. SPSS Output Two Way Anova test

Figure 1 shows that the calculation related to the influence of students' problem-solving abilities on SPLDV material between Polya strategy learning and expository learning shows a significance of 0.001, meaning Sig <0.05. Based on these data, it can be concluded that Ho is rejected and Ha is accepted. Thus, there is a difference in the problem-solving abilities of students involved in Polya strategy learning and expository learning. Therefore, the first conclusion is that the application of Polya strategy learning assisted by MathCityMap media has an effect on students' problem-solving abilities on SPLDV material in class VIII of SMPN 2 Pontianak. The results of this study are in accordance with the results of previous research by Sutanto (2023), Polya's learning strategy influences students' ability to solve mathematical challenges related to everyday life. This process allows students to better understand the intent and purpose of the questions through their understanding of the information they have already learned and are asking about. This is also in line with the findings in the research by Mardiansa (2022), that the implementation of learning with the Polya learning strategy which is carried out well can train problem-solving skills, as proven by the stages of solving mathematical story problems which make it easier for students to work on mathematical story problems.

In the second hypothesis, the calculation related to the difference in problem-solving abilities in SPLDV material of students with high and low self-efficacy shows a significance of 0.043, meaning Sig <0.05. Based on the results of the data, it can be concluded that H0 is rejected and Ha is accepted. Thus, there is a significant influence on students' problem-solving abilities based on the level of self-efficacy, both high and low. This finding confirms how important the role of self-efficacy is in improving students' ability to solve problems, where students who have high self-efficacy tend to be able to solve problems with more systematic and efficient steps (Cahyani and Winata, 2020). This finding is in line with the theory put forward by Bandura (1997), regarding self-efficacy, which states that individuals with high self-efficacy will view challenges as tasks to be overcome and not as threats, and develop greater resilience in the face of difficulties. In addition, the results of research by Masturi, et al., (2020),

found that problem-based learning models can significantly improve students' mathematical problem-solving abilities and self-efficacy compared to conventional learning. In research by Islamiati et al. (2025), As students successfully overcome challenges in mathematics, their confidence in their own abilities will grow.

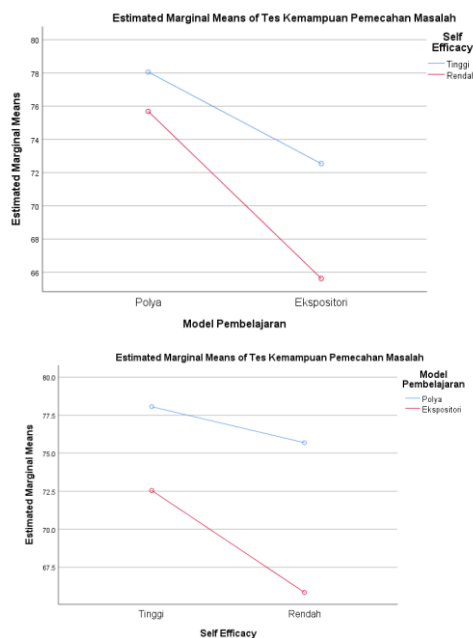


Figure 2. Graph of the Interaction of Learning and Self-Efficacy on Problem-Solving Ability

The third hypothesis shows that the analysis results regarding the interaction effect between the implementation of Polya strategy learning assisted by MathCityMap media and the level of self-efficacy on students' ability to solve problems show a significance value of 0.315. Because this value is greater than 0.05, it can be concluded that there is no statistically significant interaction. Although Polya's learning strategy encourages students to think systematically and actively solve problems through clear steps, its effects are evenly distributed across both high and low self-efficacy students. This means that students from both groups still benefit from this lesson, even though their level of self-efficacy does not affect their final results. This is supported by research by Saifulloh (2024), which states that strategy-based learning, such as Polya's steps, can help all students improve their problem-solving skills regardless of their level of self-efficacy. However, this influence is not limited to students with high levels of self-efficacy; structured problem-solving strategies, such as Polya's learning strategies, still provide significant benefits for all students, regardless of their level of self-efficacy.

Referring to Figure 3, it can be seen that in learning using the Polya strategy, students with high self-efficacy showed better results than those with low self-efficacy. A similar pattern was also seen in expository learning, where students with high self-efficacy continued to outperform those with low self-efficacy. This is in line with the findings of research by Alfares (2021), the results of data analysis showed that although there were differences in problem-solving abilities between students with high, medium, and low levels of self-efficacy, there was no interaction between learning models and self-efficacy on students' mathematical problem-solving abilities. The Polya strategy, assisted by MathCityMap media, provided sufficiently strong cognitive structural support for all students, including those with low self-efficacy (Hakim, et al., 2019).

It is seen that students with high self-efficacy who participated in learning with the Polya strategy demonstrated better problem-solving abilities than students with high self-efficacy who received expository learning. Similarly, in the low self-efficacy group, students who learned through the Polya strategy also achieved higher results compared to students who participated in expository learning. Based on these data, it can be concluded that H_0 is accepted and H_a is rejected. In other words, there is

no significant interaction between the Polya learning strategy assisted by MathCityMap media and the level of self-efficacy on students' problem-solving abilities. This aligns with Vygotsky's (1978) constructivism theory, which emphasizes the importance of authentic learning experiences and social interactions in building conceptual understanding (Noverma, et al., 2024). Through the use of MathCityMap media, students gain authentic experiences that strengthen their understanding, so that success in solving problems does not depend entirely on individual self-efficacy levels.

Table 10. T-Test Results of Students with High Self-Efficacy

Kelompok	Mean	SD	n	t	Sig
High self-efficacy students involved in Polya learning strategies assisted by MathCityMap media	77.88	6.480	17	1.688	0.103
High self-efficacy students involved in expository learning	72.55	10.319	11		

Table 10 shows the difference in problem-solving ability between students with high self-efficacy who participated in Polya strategy learning using MathCityMap media and those who participated in expository learning. The calculation results show a significance value of 0.103, which exceeds the 0.05 limit. Based on these results, H_0 is accepted and H_a is rejected. Thus, the fourth hypothesis concludes that there is no difference in problem-solving ability between students with high self-efficacy who participated in Polya strategy learning using MathCityMap media and students who participated in expository learning. These results are consistent with research by Nissa et al. (2024), which found no significant difference in problem-solving skills between the two groups for students with high self-efficacy. This indicates that the learning strategies used did not significantly impact the achievement of students with high self-efficacy, as they already had confidence in their own ability to solve problems.

Theoretically, these results can be explained through the concept of self-efficacy proposed by Bandura (1997). Bandura stated that individuals with high self-efficacy view difficult tasks as challenges to be overcome, remain persistent in the face of obstacles, and resist giving up easily. This strong belief in their own abilities enables students to maintain their academic performance despite varying learning approaches (Novanto 2024). This reflects the idea that the influence of learning comes not only from the learning strategies used, but more from students' self-belief in their ability to succeed.

Table 11. T-Test Results of Students with Low Self-Efficacy

Kelompok	Mean	SD	n	t	Sig
Low self-efficacy students involved in Polya learning strategies assisted by MathCityMap media	75.54	6.765	13	3.142	0.004
Low self-efficacy students involved in expository learning	65.63	9.867	19		

Based on Table 11, the calculation results regarding the difference in problem-solving abilities between students with low self-efficacy who participated in Polya strategy learning assisted by MathCityMap media and students who received expository learning. The significance value obtained was 0.004, which is smaller than 0.05. Thus, H_0 is rejected and H_a is accepted. Therefore, the fifth hypothesis concludes that there is a difference in problem-solving abilities between students with low self-efficacy who participated in Polya strategy learning assisted by MathCityMap media and students who received expository learning. The use of technology in a real-life context provides them with practical experience that can enhance their understanding of the material. The research findings align with the results of research by Krismayanti et al. (2018), which showed that problem-based learning influences mathematical problem-solving abilities despite low student self-efficacy. According to

Gagné, good learning conditions encompass the process of capturing students' attention and providing effective feedback (Lukman, et al., 2023). Instructional steps outlined in Gagné's cognitive theory, such as capturing students' attention, providing clear objectives, providing feedback, and encouraging active practice, all support the learning process, helping students increase their engagement and success in solving mathematical problems (Basyir, et al., 2022). This happens because Polya's learning strategy encourages students to follow problem-solving steps systematically, so they feel more focused and confident in finding solutions.

Conclusion

The results of the study indicate that students' problem-solving abilities, especially those related to the Two-Variable Linear Equation System (SLE) material in class VIII of SMPN 2 Pontianak, are influenced by the use of the Polya learning strategy and the assistance of MathCityMap media. However, there is no relationship between the two variables. This study found a difference in mathematical problem-solving abilities between students involved in Polya strategy learning assisted by MathCityMap media and students who learned through expository learning. There is a difference in students' abilities in solving mathematical problems seen from high and low levels of self-efficacy. This finding indicates that there is no relationship between the application of the Polya learning strategy assisted by MathCityMap media and the level of self-efficacy on students' mathematical problem-solving abilities on the SLE material in class VIII of SMPN 2 Pontianak. Students with high levels of self-efficacy show equivalent results in problem-solving abilities, both in Polya strategy learning assisted by MathCityMap media and in expository learning. However, there was a significant difference in students with low self-efficacy, where those who learned through the Polya strategy assisted by MathCityMap media showed superior problem-solving abilities than students who learned through the expository approach.

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