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The Impact of the Problem-Based Learning Model on Students' Higher Order Thinking Skills in Social Studies: A Study at MTs Negeri 3 Garut

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***Abstract*—In the 21st century, education must not only emphasize content mastery but also foster Higher Order Thinking Skills (HOTS) and digital literacy, which are essential for preparing students to face global challenges. In Indonesia, Social Studies (IPS) is a strategic subject for developing these competencies due to its strong relation to real-life issues. However, classroom practices often remain teacher-centered, limiting opportunities for critical, evaluative, and creative thinking. Problem-Based Learning (PBL) offers an alternative approach by engaging students in authentic problem solving. Through PBL, learners are encouraged to think critically and creatively, collaborate, and integrate information from multiple sources, including digital media. This study aimed to examine the effect of the PBL model on students' HOTS in Social Studies at MTs Negeri 3 Garut, West Java. Using a quantitative approach with a quasi-experimental design, data were collected through observation, questionnaires, interviews, and documentation. Results showed that PBL had a positive and significant effect on HOTS, indicated by a Pearson correlation of 0.409 (positive), significance level of 0.015, and R Square of 0.167. The experimental class demonstrated a greater improvement, with average HOTS scores increasing from 107.94 (pretest) to 121.03 (posttest), while the control class rose only from 111.46 to 113.49. In conclusion, the PBL model significantly enhances students' HOTS and is effective for fostering higher-level thinking skills in Social Studies learning.**

KEYWORDS: Problem-Based Learning, Higher Order Thinking Skills, Social Studies.

I. Introduction

Education in the 21st century requires students to possess higher-order thinking skills (HOTS), such as the ability to analyze, evaluate, and create solutions to various problems. Higher-order thinking skills include the abilities to analyze, evaluate, and create (Anderson & Krathwohl, 2001). In the context of Social Studies (IPS) learning, these skills are essential because Social Studies does not only focus on mastering concepts but also emphasizes students' ability to understand social realities, think critically and creatively, and make appropriate decisions in solving problems both in school learning and in community life. Social Studies is a subject that examines various events, social facts, concepts, and generalizations related to community life and civic matters (Fajar, Arnie, 2009).

The aim of Social Studies learning is to foster students to become good citizens who are critical toward social phenomena occurring in society, while also providing knowledge and understanding about social problems. Therefore, after examining existing social issues, students are expected to acquire knowledge, social skills, and the courage to participate in solving these problems.

Social Studies learning emphasizes the educational aspect rather than merely transferring concepts. Students are expected to not only understand various concepts but also to develop and practice attitudes, values, morals, and skills based on the concepts they have acquired. Through Social Studies, students are expected to gain knowledge and insights into the basic concepts of social sciences and humanities, develop sensitivity and awareness of societal problems, and acquire skills to analyze and solve these problems (Al Muchtar, 2007). Learning outcomes in Social Studies refer to two aspects: the ability to understand concepts and the ability to apply such understanding, including critical and creative thinking skills, the ability to comprehend and solve community problems, and the ability to make appropriate decisions (Said Hamid Hasan, 1991).

However, teaching practices in schools have not fully met the needs of students, especially in developing critical, creative, and problem-solving skills, which affect learning outcomes. Based on preliminary observations and interviews at MTs Negeri 3 Garut, Social Studies teachers often rely on lectures and occasionally on group discussions, while most students tend to struggle in analyzing complex social problems. Therefore, a learning model is needed that can facilitate and stimulate students' critical and creative

thinking activities so that their higher-order thinking skills can develop.

One learning model believed to enhance HOTS is Problem-Based Learning (PBL). This model positions students as active learners who engage with real-world problems, encouraging them to think critically, find solutions, and connect learning materials with everyday life. The characteristics of PBL include presenting students with real problems, so they learn to think critically, practice problem-solving skills, and acquire knowledge (Duch, 1995, in Shoimin, 2014). Problem-Based Learning is a teaching approach that begins with real-life problems encountered in students' environments or in community events, or with hypothetical problems designed to meet educational goals and criteria (Ahmad Yani et al., 2018). Thus, through PBL, students can practice how to think critically, acquire problem-solving skills, and gain important knowledge and concepts from the learning material being discussed.

Huang & Foreign in (Ngalimun, 2014) explain that Problem-Based Learning (PBL) is a student-centered learning model by confronting them with various problems they encounter in real life. Thus, students are faced from the beginning with various life problems that they may encounter after graduating from school. The Problem-Based Learning model is a way of presenting learning material by making problems the starting point of discussion to be analyzed and synthesized in an effort to find solutions or answers by students. The problems may be posed by teachers, jointly by students and teachers, or by the students themselves, which then become the subject of discussion and problem-solving as part of the learning activities.

This is in line with Stepien et al. (1993) in (Ngalimun, 2013) who state that Problem-Based Learning is a learning model that involves students in solving problems through the stages of the scientific method so that students can learn knowledge related to the problem and at the same time acquire problem-solving skills. From this explanation, it can be concluded that PBL is a learning model that focuses on tracing the root of real-world problems as the context of learning by involving students in the problem-solving process through the stages of the scientific method, enabling them to think critically and learn through problem-solving experiences in order to acquire essential knowledge and concepts from the learning material.

Yew & Goh in (Sagala, 2012) reveal that Problem-Based Learning is a pedagogical approach that allows students to learn while actively engaging in problem-solving. This means that students are given opportunities to solve problems in collaborative settings among peers, create learning models, and develop habits of independent learning through practice and reflection. Thus, it can be concluded that Problem-Based Learning emphasizes students' learning activities more than teachers' teaching activities. In general, students show enthusiasm and persistence in solving problems, actively participate in discussions, help each other in groups, and are not hesitant to ask questions or seek guidance from the teacher.

The learning process using the Problem-Based Learning model requires critical and creative thinking to seek solutions in problem-solving. This creative thinking requires higher-order thinking skills. However, such higher-order thinking still pays attention to basic abilities. The intended goal is the ability of students to think critically, analytically, and logically to find alternative solutions through empirical data exploration in order to foster a scientific attitude. The purpose of Problem-Based Learning is to help students develop thinking skills and problem-solving skills, learn to act as real adults, and become independent learners (Trianto, 2010).

Higher Order Thinking Skills (HOTS) are the highest levels of thinking, consisting of analyzing, evaluating, and creating. HOTS are very important for students to master. HOTS are ways of thinking that go beyond memorizing and stating facts, or applying rules, formulas, and procedures (Thomas & Thorne in Nugroho, 2018). This means that thinking in HOTS is not just about remembering but being able to analyze. Based on the above opinions, it can be concluded that HOTS require students to act based on facts, such as solving real-life problems in many ways but achieving the same goals.

From the experts' explanations above, it can be concluded that HOTS are higher-order thinking abilities, in which students must be able to analyze, evaluate, and generate new solutions to problems they face, not merely knowing and memorizing concepts. Higher-order thinking as critical thinking means that students can provide wise judgments or give well-founded critiques.

Based on the above background, this research aims to analyze the effect of the Problem-Based Learning model on students' Higher Order Thinking Skills (HOTS) in Social Studies at MTs Negeri 3 Garut.

II. METHOD

This study employed a quantitative approach with a quasi-experimental design using a nonequivalent control group design. The subjects of the study were teachers and students in the Social Studies learning process at MTs Negeri 3 Garut, located at Jalan Purwabhakti No.57, Cisewu District, Garut Regency. The population of this research consisted of all ninth-grade students, totaling 132 students. The sample was selected from classes with relatively similar characteristics and academic abilities, namely class IXC as the control group and class IXD as the experimental group, with 35 students in each class.

The instruments used included tests, observations, questionnaires, interviews, and documentation. The test instrument was validated through tests of validity, reliability, discrimination power, and difficulty level. The tests were administered twice, before and after the learning process. Observations were conducted before and during the research using observation guidelines. The questionnaire was distributed during the research process and contained

statements reflecting indicators of the variable (X), Problem-Based Learning model, and Higher Order Thinking Skills, measured using a Likert scale. Interviews were conducted at the beginning and during the research process using interview guidelines. Documentation was collected at the beginning and throughout the research.

The data analysis technique used descriptive and verification analysis methods. The steps included organizing the data, selecting the data, tabulating the data, presenting the data, calculating the data, and analyzing as well as interpreting the calculation results based on the statistical figures obtained to test the proposed hypotheses, after which conclusions were drawn. Data analysis is a process of reasoning to examine, select, and classify all research data into data units so that the characteristics, functions, and relationships between variables within the overall data obtained can be identified (Sugiyono, 2017**).**

III. RESULTS AND DISCUSSION

The influence of the Problem-Based Learning (PBL) model on students' Higher Order Thinking Skills (HOTS) at MTs Negeri 3 Garut is described as follows. Observations in the control class during the learning process showed that the teacher used lecture and assignment methods in the form of exercises taken from the Social Studies textbook, completed by students through discussion with their seatmates. Afterward, students submitted their assignments to the teacher, who then closed the lesson.

In contrast, in the experimental class, the teacher explained the steps of the Problem-Based Learning model, divided students into five groups consisting of four members each, distributed worksheets containing questions and pictures related to the learning material, and asked students to answer them through group discussions by seeking information using both print and digital media. Next, the teacher asked students to present the results of their discussions in front of the class.

The results of the descriptive statistical analysis of observations showed that the observation score of the control class was 55, while the experimental class scored 85**.** This indicates that the learning activities in the experimental class were much higher than those in the control class. This difference illustrates that the application of the PBL model encouraged students' more active involvement in the learning process compared to conventional methods.

These findings are consistent with Hmelo-Silver (2004), who emphasized that PBL enables students to be more active in managing knowledge through discussion, reflection, and problem-solving. The higher level of learning activity also supports Arends (2012), who stated that PBL encourages students to engage in the exploration of real-world problems, thereby making learning more meaningful and oriented toward critical thinking skills. Furthermore, this result aligns with Trianto (2010), who highlighted that the implementation of PBL in Social Studies learning can increase student engagement, both individually and in groups.

This demonstrates that the PBL model influences not only learning outcomes but also the learning process itself, as evidenced by the increased activity, cooperation, and interaction among students.

The recapitulation of pretest and posttest data for the independent variable (X) Problem-Based Learning was further analyzed to calculate the mean, standard deviation, minimum, and maximum values using SPSS version 25. The results are presented in Tables 1 and 2 as follows.

1) Table 1
Pretest Results of Variable X: Problem-Based Learning Experimental Class and Control Class

	Experimental Class	Control Class
N Valid	35	35
Missing	0	0
Mean	108.46	111.51
Std. Error Mean	1.655	1.782
Median	110.00	112.00
Mode	110	104a
Std. Deviation	9.793	10.542
Variance	95.903	111.139
Range	40	42
Minimum	85	94
Maximum	125	136
Sum	3796	3903

The pretest results of variable X (Problem-Based Learning) show that the mean score was **108.46** in the experimental class and **111.51** in the control class. The standard deviation was **9.793** in the experimental class and **10.542** in the control class. The ideal score for the questionnaire was **150**, obtained from the number of items multiplied by the maximum value (30 × 5 = 150). The minimum score in the experimental class was **85**, and in the control class **94**, while the maximum score in the experimental class was **125** and in the control class **136**.

These results indicate that the mean score in the experimental class (108.46) was slightly lower than in the control class (111.51). Compared to the ideal questionnaire score of 150, both classes fall into the fairly good category. In terms of data distribution, the standard deviation in the control class (10.542) was slightly higher than that of the experimental class (9.793). This suggests that the responses in the control class were more varied, while the experimental class was more homogeneous. Regarding score range, the experimental class had a minimum of 85 and a maximum of 125, while the control class had a minimum of 94 and a maximum of 136. This shows that the control class had a relatively wider distribution, both at the lower and upper limits, compared to the experimental class.

Overall, these pretest results illustrate that before treatment, the initial conditions of both classes were not significantly different, although the control class tended to have a slightly higher mean and a wider score range.

These findings are consistent with Sugiyono (2017), who explained that differences in pretest averages between experimental and control groups are still reasonable as long as the differences are not statistically significant. In addition, Arikunto (2013) emphasized that group homogeneity before treatment is important to ensure research validity, since any differences after treatment can be more reliably attributed to the intervention rather than the initial condition of the students. Therefore, the initial conditions of both classes in this study can be considered relatively equivalent, allowing the application of the Problem-Based Learning (PBL) model in the experimental class to be tested more objectively.

Table 2
Posttest Results of Variable X: Problem-Based Learning
Experimental Class and Control Class

	Experimental Class	Control Class
N Valid	35	35
Missing	0	0
Mean	121.57	114.43
Std. Error Mean	0.790	0.834
Median	121.00	115.00
Mode	119a	115a
Std. Deviation	4.673	4.937
Variance	21.840	24.370
Range	19	22
Minimum	114	103
Maximum	133	125
Sum	4255	4005

The posttest results of variable X (Problem-Based Learning) show that the mean score in the experimental class was **121.57**, while in the control class it was **114.43**. The standard deviation was **4.673** in the experimental class and **4.937** in the control class. The minimum score in the experimental class was **114** and in the control class **103**, while the maximum score in the experimental class was **133** and in the control class **125**.

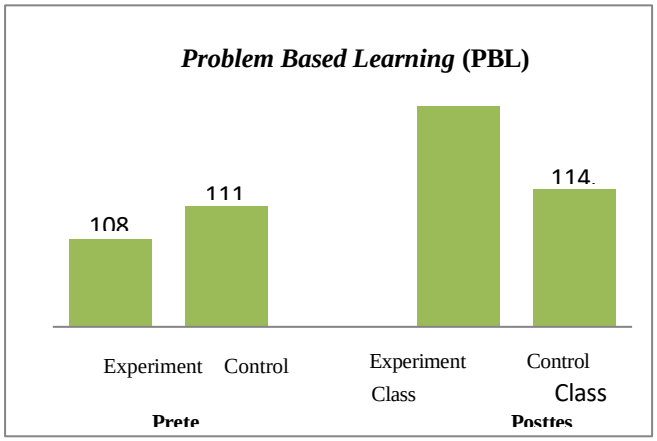
These results indicate that the mean score in the experimental class (121.57) was higher than in the control class (114.43). Compared to the ideal score of **150**, both classes fall into the good category, with the experimental class achieving a relatively higher position. In terms of data distribution, the standard deviation in the experimental class (4.673) was slightly lower than that of the control class (4.937), showing that the experimental class had slightly more consistent results. Regarding score range, the experimental class had a minimum of 114 and a maximum of 133, while the control class ranged from 103 to 125. This confirms that the experimental class achieved higher results in both lower and upper scores compared to the control class.

Overall, the posttest results show that after the treatment, the experimental class experienced better learning outcomes compared to the control class, with higher mean scores, broader score ranges, and more stable consistency. These findings are in line with Arends (2012), who emphasized that Problem-Based Learning improves critical thinking skills and student achievement through active engagement in the learning process. Similarly, Tan (2003) argued that PBL encourages students to construct knowledge independently through solving real-world problems, leading to more meaningful and sustainable learning outcomes.

Thus, the posttest results reinforce the finding that the application of Problem-Based Learning has a positive effect on improving student learning outcomes compared to conventional teaching methods.

The comparison of pretest and posttest scores of variable X in both experimental and control classes can be seen in Diagram 1 below.

Diagram 1
Results of Pretest and Posttest Calculations of Variable X
(Problem-Based Learning)
Experimental Class and Control Class



Based on the diagram above, it can be seen that during the pretest the experimental class had a lower mean compared to the control class (108.46 < 111.57). However, after the implementation of the Problem-Based Learning (PBL) model in the experimental class, the mean posttest results showed a significant increase, resulting in a higher mean compared to the control class (121.97 > 114.29).

The analysis of these data indicates that during the pretest, the mean score of the experimental class was 108.46, while the control class had a higher mean of 111.57. This suggests that before the treatment, the initial ability of students in the control class was relatively better than that of the experimental class. However, after the application of the PBL model, the mean posttest score of the experimental class significantly increased to 121.97, whereas the control class only reached 114.29. Thus, it can be concluded that there was a higher improvement in learning outcomes in the experimental class compared to the control class.

In addition to the mean, the analysis also considered the standard deviation (SD). In the pretest, the experimental class had an SD of 9.793, while the control class had 10.542. This shows that the distribution of data in the experimental class was slightly more homogeneous compared to the control class. After the treatment, the standard deviation of the experimental class drastically decreased to 4.670, while the control class had 4.937. This decrease in the standard deviation indicates that in addition to the improvement in learning outcomes, the achievements of students in the experimental class were also more consistent and evenly distributed.

These findings are consistent with the views of Barrows & Tamblyn (1980), who state that Problem-Based Learning is designed to enhance critical thinking and problem-solving skills through active student engagement in the learning process. Similarly, Sanjaya (2008) argues that PBL is effective in improving critical thinking skills as well as fostering student independence. Furthermore, Trianto (2009) emphasizes that PBL can encourage students to be active in discovering concepts and building understanding through direct learning experiences. Likewise, Arends (2012) affirms that PBL can motivate students to construct their own knowledge through the exploration of real-world problems. Thus, the results of this study demonstrate that the application of Problem-Based Learning (PBL) not only improves the average learning outcomes of students in Social Studies but also reduces score variation among individuals, making the learning process more effective and equitable.

Table 3
Pretest Results of Variable Y1 Higher Order Thinking Skills
Experimental Class and Control Class

Higher Order Thinking Skills	Experimental Class	Control Class
N (Valid)	35	35
Missing	0	0
Mean	107.94	111.46
Std. Error of Mean	1.576	1.364
Median	109.00	111.00
Mode	102a	110
Std. Deviation	9.321	8.067
Variance	86.879	65.079
Range	40	34
Minimum	89	94
Maximum	129	128
Sum	3778	3901

The pretest results of variable Y1 Higher Order Thinking Skills (HOTS) showed that the mean score in the experimental class was 107.94, while in the control class it was 111.46. The standard deviation was 9.321 in the experimental class and 8.067 in the control class. Similar to variable X, the ideal score for the HOTS questionnaire was 150, obtained from the number of items multiplied by the maximum score (30 × 5 = 150). The minimum score in the experimental class was 89 and in the control class 94, while the maximum score in the experimental class was 129 and in the control class 128.

The calculation results can be explained as follows: the pretest results of variable Y1 HOTS showed that the mean score in the experimental class was 107.94, while the control class had a slightly higher mean of 111.46. Compared to the ideal score of 150, both classes were categorized as fairly good. In terms of data distribution, the experimental class had a standard deviation of 9.321, while the control class had 8.067. This indicates that student response variation in the experimental class was greater than in the control class. Regarding score range, the experimental class had a minimum of 89 and a maximum of 129, while the control class had a minimum of 94 and a maximum of 128. Thus, it can be concluded that the initial conditions of students' higher-order thinking skills (HOTS) in both classes were relatively balanced, although the control class had a slightly higher mean and a narrower distribution.

These findings are consistent with Anderson & Krathwohl (2001), who state that HOTS includes analytical, evaluative, and creative abilities that are not only influenced by internal student factors but also by the learning strategies applied. This means that before the treatment, students' HOTS achievements were at a moderate level. Furthermore, Widodo (2013) emphasizes that the development of HOTS requires a learning process that is challenging, encourages critical thinking, and involves contextual problem-solving. Therefore, the initial level of HOTS can still be improved through the application of Problem-Based Learning (PBL).

Table 4
Posttest Results of Variable Y1 Higher Order Thinking Skills
Experimental Class and Control Class

Higher Order Thinking Skills	Experimental Class	Control Class
N (Valid)	35	35
Missing	0	0
Mean	121.03	113.49
Std. Error of Mean	1.050	1.279
Median	121.00	114.00
Mode	115	116
Std. Deviation	6.210	7.567
Variance	38.558	57.257
Range	23	30
Minimum	110	98
Maximum	133	128
Sum	4236	3972

The posttest results of variable Y1 Higher Order Thinking Skills (HOTS) showed that the mean score in the experimental class was 121.03, while in the control class it was 113.49. The standard deviation was 6.210 in the experimental class and 7.567 in the control class. The minimum score in the experimental class was 110 and in the control class 98, while the maximum score in the experimental class was 133 and in the control class 128.

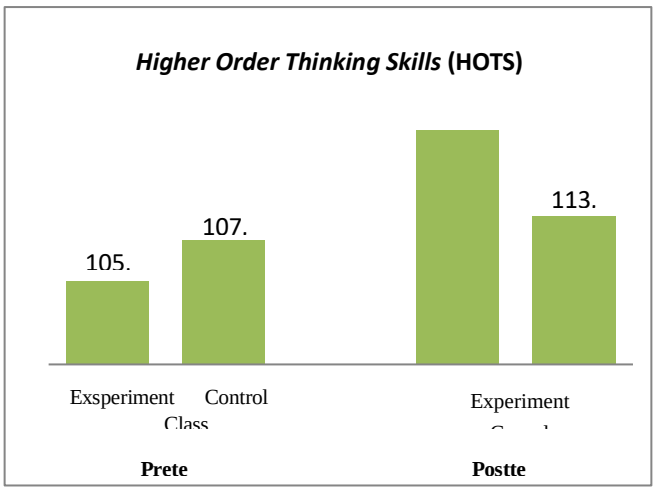
The calculation results can be explained as follows: the posttest results of variable Y1 HOTS indicated that the mean score in the experimental class was 121.03, while the control class had a mean of 113.49. This demonstrates a

higher improvement in HOTS achievement in the experimental class compared to the control class. When compared to the ideal questionnaire score of 150, both classes were in the good category, with the experimental class showing superior performance. In terms of data distribution, the standard deviation in the experimental class was 6.210, while in the control class it was 7.567. This indicates that the variation in students' responses in the experimental class was narrower, suggesting more homogeneity, while the control class showed greater diversity. Regarding score range, the experimental class had a minimum of 110 and a maximum of 133, while the control class had a minimum of 98 and a maximum of 128. This means that both the lowest and highest achievements of students in the experimental class were better than those in the control class.

The above analysis is consistent with Hmelo-Silver (2004), who emphasized that Problem-Based Learning (PBL) is effective in developing higher-order thinking skills because it encourages students to analyze, evaluate, and solve authentic problems. Similarly, Barrows & Tamblyn (1980) highlighted that PBL places students at the center of learning, thereby significantly enhancing critical thinking skills. Furthermore, Sanjaya (2016) stated that problem-based learning stimulates students to develop critical, analytical, and creative thinking abilities, which are the core of higher-order thinking skills. Thus, these posttest results indicate that the implementation of PBL in the experimental class positively contributed to improving HOTS compared to the control class.

The results of the pretest and posttest of Y1 higher order thinking skills in both the experimental and control classes can be seen in Diagram 2 below.

Diagram 2
Calculation Results of Pretest and Posttest Variable Y1
Higher Order Thinking Skills
Experimental Class and Control Class



Based on the calculation results presented in the diagram above, it is shown that during the pretest, the experimental class had a lower mean score compared to the control class (107.94 < 111.46). However, in the posttest, the experimental class achieved a higher mean score compared to the control class (121.03 > 113.49). This indicates that Problem-Based Learning contributed positively to improving students' higher-order thinking skills. These results support the view of Anderson & Krathwohl (2001), who stated that higher-order thinking skills include the ability to analyze, evaluate, and create, which can be developed through problem-solving-oriented learning. Similarly, Barrows & Tamblyn (1980) emphasized that Problem-Based Learning is effective in enhancing critical thinking and problem-solving skills through active student engagement. Hmelo-Silver (2004) also highlighted that Problem-Based Learning helps students construct more meaningful knowledge and fosters analytical skills. Furthermore, Widodo (2013) asserted that problem-based learning is relevant for developing higher-order thinking skills because it encourages students to think critically, creatively, and reflectively.

Thus, this comparison shows that although the experimental class initially scored lower (pretest), after being treated with the Problem-Based Learning model, it was able to significantly surpass the control class in the posttest results.

Subsequently, from the data that has been described, the relationship or correlation is calculated, as shown in Table 5 below.

Table 5
Correlation between Problem-Based Learning and Higher Order Thinking Skills

Correlations		Problem-Based Learning	Higher Order Thinking Skill
Problem-Based Learning	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	35	
Higher Order Thinking Skill	Pearson Correlation	.409*	
	Sig. (2-tailed)	.015	
	N	35	

Based on the correlation table above, the relationship between variable X (Problem-Based Learning) and variable Y1 (Higher Order Thinking Skills) obtained a bivariate Pearson correlation value of 0.409 (positive) with a significance value of 0.015 (0.05 ≥ 0.015). Thus, H_{01} is rejected and H_{a1} is accepted. This means there is a positive correlation between the application of the Problem-Based Learning model and students' Higher Order Thinking Skills in Social Studies at MTs Negeri 3 Garut.

This finding is in line with the views of several scholars. Domestically, Sanjaya (2016) explained that PBL emphasizes student activities in independently finding solutions to problems, thereby training their analytical, evaluative, and synthetic skills. Furthermore, Hosnan (2014)

stated that PBL contributes to the improvement of critical and creative thinking skills, which are the core of HOTS. Similarly, Trianto (2010) emphasized that the implementation of PBL can develop students' conceptual understanding and analytical thinking abilities, especially in Social Studies learning, which is closely related to real-life contexts.

Hmelo-Silver (2004) explained that PBL is designed to help students develop flexible thinking and problem-solving skills through discussion and collaboration processes. Similarly, Arends (2012) asserted that PBL provides opportunities for students to develop higher-order thinking skills by directly engaging with authentic problems relevant to their lives. These findings reinforce the conclusion that the more intensively PBL is applied, the greater the improvement in students' higher-order thinking skills.

The results of the coefficient of determination from the simple linear regression test of the Problem-Based Learning model on Higher Order Thinking Skills are presented in Table 6 below.

Table 6
Coefficient of Determination of Problem-Based Learning on Higher Order Thinking Skills

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.409a	.167	.142	4.329

a. Predictors: (Constant), Problem-Based Learning

Based on the results of the simple linear regression analysis, the effect of variable X (Problem-Based Learning) on variable Y (Higher Order Thinking Skills) obtained a correlation coefficient (R) of 0.409 with a coefficient of determination (R Square) of 0.167. This indicates that the application of PBL contributes 16.7% to the improvement of students' Higher Order Thinking Skills, while the remaining 83.3% is influenced by other factors outside this model. Thus, it can be concluded that although PBL does not fully dominate the learning outcomes, it has a significant positive contribution in enhancing students' higher-order thinking skills in Social Studies.

The regression results confirm that Problem-Based Learning has a significant influence on the development of Higher Order Thinking Skills. This finding is consistent with Barrows & Tamblyn (1980), who stated that PBL is designed to develop critical thinking and problem-solving abilities through active student engagement in the learning process. Similarly, Hmelo-Silver (2004) emphasized that PBL fosters analytical, synthetic, and evaluative skills, which are the core components of HOTS. In the same vein, Sanjaya (2010) highlighted that problem-centered learning models encourage students to think more critically and creatively, as they are not merely receiving information but also constructing understanding through authentic problem exploration. Supporting this view, Mulyasa (2018) argued that PBL enhances higher-order thinking skills by positioning students as active subjects in the learning process.

Furthermore, to support and strengthen the quantitative findings, interviews were conducted with Social Studies teachers. The information obtained revealed that the implementation of Problem-Based Learning provided a very different learning experience compared to lecture-based and unguided assignment methods that were usually applied. Teachers reported that PBL created a more active, collaborative, and student-centered classroom atmosphere. This was evident from students' involvement in discussions, teamwork in completing tasks, and solving real-world problems, which encouraged them to seek answers from various learning resources such as reading books, searching information online, giving presentations, and listening to group presentations. These findings are consistent with Barrows & Tamblyn (1980), who emphasized that PBL is designed to enhance critical thinking and problem-solving skills through active student involvement in the learning process. In addition, Hmelo-Silver (2004) highlighted that within PBL, students act as active learners who construct understanding through social interaction and reflection.

From the perspective of motivation and learning engagement, Arends (2012) states that Problem Based Learning (PBL) provides opportunities for students to construct knowledge independently through the exploration of real-world problems, thereby enhancing their learning motivation. This view is reinforced by Trianto (2010), who explains that the implementation of PBL in social studies learning not only improves students' learning outcomes but also fosters collaboration, communication, and higher order thinking skills (HOTS). Similarly, Hmelo-Silver (2004) found that PBL is effective in enhancing HOTS, while Hosnan (2014) emphasizes that PBL is highly relevant for developing HOTS since it requires students to analyze, evaluate, and create solutions to contextual problems.

Findings from interviews with social studies teachers at MTs Negeri 3 Garut support these perspectives. The teachers highlighted that the application of PBL not only improves students' learning outcomes but also provides more meaningful learning experiences, aligning with the theoretical insights of previous scholars.

In addition to interviews, document analysis was also conducted, including syllabi, lesson plans (RPP), midterm and final test scores, assignment scores, classroom photos, test questions and answers, and instructional materials such as textbooks and other references. These documents indicate that the lesson planning prepared by teachers was aligned with its intended objectives. As Sanjaya (2013) argues, the primary goal of lesson planning is to guide changes in students' behavior toward the intended learning outcomes. Thus, if students' understanding of the material improves, their learning achievement is also expected to increase.

The relationship between this study and previous research is also evident. Riyadi and Arifin (2016) found that PBL-based mathematics instruction improved students' HOTS, particularly in the areas of creating, problem-

solving, evaluating, analyzing, and critical thinking. The most significant improvements for Grade VIII students at SMP Negeri 1 Daha Utara were in evaluating and analyzing, while students at SMP Negeri 2 Daha Utara showed the greatest improvement in analyzing skills. Likewise, Suwarsi et al. (2013) reported that PBL encouraged students to think creatively and rationally, communicate effectively in class, and improved learning achievement, mathematical representation skills, and learning motivation.

The novelty of this study lies in the use of multiple instruments—observations, questionnaires, interviews, and documentation—to strengthen the conclusions drawn from statistical analyses. In contrast, previous studies generally relied solely on statistical analysis as the basis for their findings. Therefore, this research provides a more comprehensive contribution in examining the relationship between PBL and HOTS.

III. CONCLUSION

This study concludes that the Problem Based Learning (PBL) model significantly enhances students' Higher Order Thinking Skills (HOTS) in social studies. The findings demonstrate that students in the experimental class, who were taught using PBL, showed greater improvement compared to those in the control class. Moreover, the application of PBL not only has a significant effect on students' HOTS but also proves to be an effective instructional model for fostering critical, analytical, and creative thinking in social studies learning at MTs Negeri 3 Garut.

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