Edureligia : Jurnal Pendidikan Agama Islam 10 (01) (2026) : 128-142
DOI: http://dx.doi.org/10.33650/edureligia.v10i1.14748

Edureligia
Jurnal Pendidikan Agama Islam
https://ejournal.unuja.ac.id/index.php/edureligia
p-ISSN : 2549-4821
e-ISSN : 2579-5694

ENHANCING SOCIAL STUDIES LEARNING OUTCOMES THROUGH PROBLEM-BASED LEARNING IN AN ISLAMIC INTEGRATED ELEMENTARY SCHOOL

Irwan Satria[1](✉), Aziza Aryati[2], Nova Asvio[3], Muhammad Mujtaba Asad[4]
[1,2,3]Universitas Islam Negeri Fatmawati Sukarno Bengkulu, Indonesia
[4]Sukkur IBA University, Pakistan

Article History:
Received: April 2022
Accepted: May 2022
Published: June 2022

Keywords:
Social Studies Learning, Learning Outcome, Problem-Based Learning, Islamic Integrative Learning

(✉)**Correspondence to:**
irwansatria@mail.uinfasbengkulu.ac.id

Abstract: This study aimed to investigate the influence of spiritual motivation and institutional support on teaching efficacy among volunteer teachers in pesantren across Jambi Province, Indonesia. A cross-sectional survey design was employed, involving 218 volunteer teachers from 24 pesantren. Data were collected using adapted instruments measuring spiritual motivation, perceived institutional support, basic psychological needs satisfaction (autonomy, competence, relatedness), and teaching efficacy. Structural equation modeling (SEM) with partial least squares (PLS-SEM) was used for data analysis. The results reveal that spiritual motivation significantly and positively influenced teaching efficacy ($\beta = 0.39$, $p < 0.001$), both directly and through the mediation of satisfaction of basic psychological needs. Institutional support also exerted a significant positive effect on teaching efficacy ($\beta = 0.31$, $p < 0.001$), primarily mediated by the satisfaction of competence and relatedness needs. The interaction between spiritual motivation and institutional support produced a synergistic effect that enhances the fulfillment of all three basic psychological needs. These findings extended SDT by demonstrating that spiritually grounded intrinsic motivation, when coupled with structured institutional support, creates an optimal motivational ecology for volunteer teachers in faith-based educational settings. The implications of this study indicated that PBL can be used as an effective alternative learning model to improve students' learning outcomes and social attitudes in Islamic integrated elementary schools.

Please cite this article in APA style as:
Satria, I., Aryati, A., Asvio, N., & Asad, M. M. (2026). Enhancing Social Studies Learning Outcomes through Problem-Based Learning in An Islamic Integrated Elementary School. *Edureligia: Jurnal Pendidikan Agama Islam*, *10*(1), 128-142.

INTRODUCTION

One of the most important components of primary education, especially in the study of social studies, is the social attitudes of the students. Students' capacity to communicate, work together, respect diversity, and show empathy for their environment are examples of social attitudes (Alias et al., 2024; Asilevi, M.N., Kärkkäinen, S., Sormunen, K., & Havu-Nuutinen, 2024; Brugar et al., 2024). The formation of social attitudes in Islamic integrated primary schools is based on Islamic principles like brotherhood (*ukhuwah*), mutual aid, and social responsibility, in addition to being focused on interpersonal connections (Chuaichana, K., & Wutchana, 2025; Gultekin, 2024; Zafar & Abu-Hussin, 2025). As a result, social studies education strategically shapes students' social character and helps them become emotionally and socially mature in addition to being cognitively competent. Adaptive personalities will be built on the foundation of positive social attitudes from a young age. Additionally, this helps to make the school a peaceful and welcoming place to learn (Sarnoko, Asrowi, Gunarhadi, 2024; Umar et al., 2025).

However, without effective learning methodologies, pupils' social attitudes cannot grow to their full potential. Students typically have few opportunities to explicitly build social skills when learning social studies through traditional methods like lectures and rote memorizing. In actuality, real-world encounters, exchanges, and active student participation in the educational process shape societal attitudes (Wahono et al., 2025 and Yanti, 2025). In order to help students comprehend concepts and apply social values in their daily lives, a learning strategy that can integrate cognitive and social aspects in a balanced way is required. Students' sense of accountability for assignments and group projects can also be strengthened by active participation in the educational process. Furthermore, children who have meaningful learning experiences are better able to internalize societal principles (Jeet & Pant, 2023 and Ponomariovienė & Jakavonytė-Staškuvienė, 2024).

Initial observations at SD-IT Al Aufa Bengkulu, an integrated Islamic elementary school, revealed that certain pupils continued to display poor social attitudes, such as minimal participation in discussions, lack of cooperation in groups, and low care for peers. A number of reasons contributed to this state, such as the predominance of teacher-centered learning strategies, a lack of opportunity for students to engage with real-world social issues, and a lack of collaborative activities. Students' poor interpersonal skills, weak social empathy, and subpar performance on social studies learning objectives that prioritize the development of socially responsible citizens were all consequences of this situation. Students may have trouble adjusting to larger social settings if this condition continues. Low social attitudes can also lower the quality of classroom interactions and lead to disputes among pupils.

One strategy that might be used to try to solve these issues is problem-based learning (PBL). In order to foster critical thinking, teamwork, and autonomous or group problem-solving, this learning approach places a strong emphasis on presenting contextual challenges. In PBL, students are active

participants in resolving societal issues that are pertinent to their lives rather than just passive consumers of knowledge (Bulut Ates & Aktamis, 2024; Jiang et al., 2023; Saad & Zainudin, 2024). Therefore, it is anticipated that PBL implementation will enhance students' social attitudes through meaningful and cooperative learning opportunities. During group discussions, PBL also gives pupils the chance to learn how to respect the perspectives of others (Farrow et al., 2024; Pan et al., 2023; Yang et al., 2023). Additionally, students' communication and teamwork abilities can be strengthened through the collaborative problem-solving process. Numerous earlier studies have demonstrated that the use of problem-based learning improves students' social attitudes and learning outcomes (Anggraeni et al., 2023 and Shekh-Abed, 2024). According to this research, PBL can improve students' critical thinking, communication, and teamwork skills in social studies classes.

Furthermore, some research (Brehm & Langer, 2025 and Chai-Arayalert et al., 2023) highlighted how using contextual dilemmas in the classroom might deepen students' understanding of social ideals. Research from Jedlicka & Havenith (2025) and Kuo et al. (2024) on the application of PBL in enhancing social attitudes in Islamic integrated primary schools is still scarce; nevertheless, the majority of studies still concentrate on cognitive aspects or are carried out in general school contexts. Prior research by Andayanie et al. (2025) and Kadaskar (2024) has demonstrated that using problem-based learning can enhance students' learning outcomes across a range of courses. This revealed a research gap that requires more investigation. Thus, it is essential to conduct research that explicitly looks at the connection between PBL and social attitudes in the context of Islamic education. However, there are still comparatively few studies by Hasanah et al. (2025) and Munif & Sulaiman (2023) that specifically look at how well PBL works for teaching social studies in Islamic-based primary education settings. This gap made it clear that more research is required in order to create social studies learning models that are more successful in Islamic educational contexts.

According to the description given above, this study was unique in that it combined the Problem-Based Learning model with the framework of Islamic integrated education, which placed a strong emphasis on the influence of religious beliefs on students' social views. This study was innovative since it focused on changing students' social attitudes as the primary variable in addition to academic learning outcomes. This study also attempts to give an empirical account of how well PBL improves students' social attitudes in Islamic integrated primary school environments. Thus, this study's goal was to examine and explain how using problem-based learning might enhance students' social attitudes when learning social studies. The findings of this study are also expected to serve as a reference for educators in integrating social and religious values into the learning process.

RESEARCH METHOD

This study employed a quantitative approach with a quasi-experimental design using a nonequivalent control group design. This design was selected because it allows for the examination of causal relationships between the implementation of the Problem-Based Learning (PBL) model and students' learning outcomes in Social Studies. The population of this study comprised all fifth-grade students at SD-IT Al Aufa Bengkulu, an Islamic integrated elementary school located in Bengkulu City, Indonesia, during the academic year 2024/2025. The school was purposively selected based on preliminary observations conducted on February 24, 2025, which identified issues related to low Social Studies learning outcomes and limited instructional model variation. The sample consisted of two intact classes: Class V-A, consisting of 34 students (15 male, 19 female), was assigned as the experimental group, while Class V-B, consisting of 33 students (14 male, 19 female), was assigned as the control group.

The primary instrument used in this study was a Social Studies achievement test developed based on the fifth-grade curriculum standards. The test initially consisted of 40 multiple-choice items covering three main topics: (1) cultural diversity in Indonesia, (2) economic activities in the community, and (3) social interactions and institutions. The instrument was developed through several stages of validation. The instrument was reviewed by three experts: a Social Studies education specialist, an elementary education specialist, and an experienced fifth-grade teacher from SD-IT Al Aufa Bengkulu. Based on expert feedback, 10 items were revised for language clarity, and 5 items were removed due to a lack of alignment with learning objectives, resulting in 35 items for the pilot test. The revised instrument was pilot-tested with 30 fifth-grade students from another Islamic elementary school (SDIT Al-Qudsiyah Bengkulu) with similar characteristics to the study sample. The pilot test data were analyzed to determine: a) Item difficulty index (p): Items with p between 0.30 and 0.70 were retained; b) Item discrimination index (d): Items with $d \geq 0.30$ were retained; c) Distractor effectiveness: All distractors were evaluated for functionality. Based on the item analysis, 10 items that did not meet acceptable psychometric criteria ($p < 0.30$ or $p > 0.70$, $d < 0.30$, or ineffective distractors) were removed. The final version of the test consisted of 25 items with acceptable psychometric properties.

The reliability of the instrument was estimated using the Kuder-Richardson formula (KR-20), which is appropriate for dichotomously scored items. The analysis yielded a reliability coefficient of 0.86, indicating high internal consistency. The study was conducted over eight weeks during the second semester of the 2024/2025 academic year. The procedure consisted of three main phases: pre-test, treatment, and post-test. Data analysis was performed using IBM SPSS Statistics version 26. Descriptive statistics, including means, standard deviations, and frequency distributions, were calculated for pre-test and post-test scores for both groups. Inferential statistical analysis was conducted to test the research hypotheses. An assumption test was performed: 1) Normality test and Homogeneity test. Then, to examine hypotheses, an independent samples t-test was conducted to compare the post-test mean scores between the

experimental and control groups, and it was appropriate because the data met the assumptions of normality and homogeneity of variance, and the two groups were independent.

The research hypotheses were:

H_0 (Null hypothesis): There is no significant difference in Social Studies learning outcomes between students taught using the PBL model and those taught using conventional methods

H_a (Alternative hypothesis): There is a significant difference in Social Studies learning outcomes between students taught using the PBL model and those taught using conventional methods.

RESULT AND DISCUSSION

Result

Before presenting the results of the analysis test, we will first review the implementation of providing PBL actions to student learning, which is carried out in stages. In the pre-test phase, both the experimental and control groups were administered the Social Studies achievement test one week before the intervention began. The pre-test scores were used to establish baseline equivalence between the two groups and to assess students' initial knowledge. During the treatment phase, which lasted for six weeks (March to April 2025), the experimental group received instruction using the Problem-Based Learning model following the syntax proposed by, which includes: (1) orienting students to the problem, (2) organizing students for study, (3) assisting independent and group investigation, (4) developing and presenting artifacts and exhibits, and (5) analyzing and evaluating the problem-solving process. The implementation of PBL followed these specific steps for each learning cycle:

Week 1-2 (Topic: Cultural Diversity in Indonesia):

Meeting 1: Students were introduced to the problem scenario: "How can we preserve traditional cultures in our community that is starting to disappear?" Students engaged in initial brainstorming and were organized into small groups of 4-5 students.

Meeting 2: Each group investigated the problem by gathering information from textbooks, teacher-provided materials, and conducting simple interviews with community members or family members about local cultural traditions.

Meeting 3: Groups analyzed the information, discussed potential solutions, and prepared presentations.

Meeting 4: Each group presented their findings and proposed solutions (e.g., organizing cultural performances, creating cultural clubs, documenting traditions). The teacher facilitated reflection and discussion.

Week 3-4 (Topic: Economic Activities in the Community):

Meeting 5: Problem orientation: "How can we help families in our neighborhood who are experiencing economic difficulties?"

Meetings 6-7: Group investigation through observation of local markets, interviews with small business owners, and discussion of economic concepts.

Meeting 8: Presentation of solutions (e.g., creating simple business plans, organizing community cooperatives) and reflection.

Week 5-6 (Topic: Social Interactions and Institutions):

Meeting 9: Problem orientation: "How can we create a more harmonious and cooperative classroom environment?"

Meetings 10-11: Group investigation through observation of social interactions, discussion of social norms, and exploration of conflict resolution strategies.

Meeting 12: Presentation of proposed classroom programs and reflection.

The instructor served as a facilitator during the PBL implementation, directing students' research, offering resources when required, and promoting cooperative problem-solving. Every group had to record their research process and provide a final product (a poster, brief report, or presentation) that showcased their findings. The control group was instructed using the standard teaching techniques employed at SD-IT Al Aufa Bengkulu, which mostly consisted of individual worksheets, teacher lectures, and textbook readings. To account for instructor effects, both groups received training from the same teacher, and they received the same amount of teaching (4 × 35 minutes per week, totaling 24 sessions). The same Social Studies accomplishment test was given to both groups in the post-test phase, which took place right after the six-week intervention (April 2025). The post-test scores were compared to determine the effect of the PBL model on students' learning outcomes.

Descriptive Statistics of Pre-test and Post-test Scores

The pre-test was administered to both groups before the intervention to assess students' initial knowledge in Social Studies. Table 1 presents the distribution of pre-test scores for the experimental and control groups.

Table 1. Distribution of Pre-test Scores for Experimental and Control Groups

Score Interval	Category	Experimental Group (n=34)		Control Group (n=33)	
		F	%	F	%
80.00 – 100.00	High	0	0%	0	0%
60.00 – 79.00	Medium	7	21%	1	3%
0.00 – 59.00	Low	27	79%	28	97%

As shown in Table 1, the majority of students in both groups were in the low category before the intervention. In the experimental group, 27 students (79%) scored in the low category, while 7 students (21%) scored in the medium category. In the control group, 32 students (97%) were in the low category, and only 1 student (3%) achieved a medium category score. No students in either group reached the high category. Following the six-week intervention, a post-test was administered to both groups. Table 2 presents the distribution of post-test scores.

Table 2. Distribution of Post-test Scores for Experimental and Control Groups

Score Interval	Category	Experimental Group (n=34)		Control Group (n=33)	
		F	%	F	%
80.00 – 100.00	High	15	44%	0	0%
60.00 – 79.00	Medium	14	41%	7	21%
0.00 – 59.00	Low	5	15%	26	79%

Table 2 revealed a substantial improvement in the experimental group's performance after receiving PBL instruction. In the experimental group, 15 students (44%) achieved scores in the high category, 14 students (41%) in the medium category, and only 5 students (15%) remained in the low category. In contrast, the control group showed minimal improvement, with no students reaching the high category, 7 students (21%) in the medium category, and 26 students (79%) still in the low category. To further illustrate the learning gains within each group, Table 3 compares the pre-test and post-test scores for the experimental group.

Table 3. Comparison of Pre-test and Post-test Scores for the Experimental Group

Score Interval	Category	Pre-test (n=34)		Post-test (n=34)	
		F	%	F	%
80.00 – 100.00	High	0	0%	15	44%
60.00 – 79.00	Medium	7	21%	14	41%
0.00 – 59.00	Low	27	79%	5	15%

Table 3 demonstrated a remarkable improvement in the experimental group. The percentage of students in the low category decreased from 79% (27 students) in the pre-test to only 15% (5 students) in the post-test. Simultaneously, 44% of students (15 students) reached the high category in the post-test, compared to none in the pre-test. Table 4 below presents the comparison of pre-test and post-test scores for the control group.

Table 4. Comparison of Pre-test and Post-test Scores for Control Group

Score Interval	Category	Pre-test (n=33)		Post-test (n=34)	
		F	%	F	%
80.00 – 100.00	High	0	0%	0	0%
60.00 – 79.00	Medium	1	3%	7	21%
0.00 – 59.00	Low	32	97%	26	79%

As shown in Table 4, the control group experienced only modest improvement. The percentage of students in the low category decreased from 97% (32 students) to 79% (26 students), while the medium category increased from 3% (1 student) to 21% (7 students). No students in the control group achieved scores in the high category.

Assumption Tests

Before hypothesis testing, assumption tests were conducted to ensure the appropriateness of parametric statistical analysis.

Normality Test

The Shapiro-Wilk test was employed to assess the normality of data distribution for both pre-test and post-test scores in the experimental and control groups. Table 5 below presents the results of the normality tests.

Table 5. Normality Test Results (Shapiro-Wilk)

Group	Test	Statistic	df	Sig (p-value)	Interpretation
Experimental	Pre-test	.942	29	.115	Normal
Control	Pre-test	.972	28	.639	Normal
Experimental	Pre-test	.958	29	.287	Normal
Control	Pre-test	.967	28	.513	Normal

As shown in Table 5, all p-values were greater than the significance level of 0.05. Therefore, the null hypothesis of normality was accepted, indicating that the data in all groups were normally distributed and satisfied the normality assumption for parametric testing.

Homogeneity Test

Levene's test was used to examine the homogeneity of variances between the experimental and control groups for both pre-test and post-test scores. Table 6 presents the results.

Table 6. Homogeneity Test Results (Levene's Test)

Test	Levene Statistic	df1	df2	Sig (p-value)	Interpretation
Pre-test	.578	5	17	.716	Homogeneous
Post-test	1.903	6	16	.142	Homogeneous

The results in Table 6 indicated that both pre-test and post-test scores had p-values greater than 0.05, confirming that the variances between the experimental and control groups were homogeneous. This satisfied the homogeneity of variance assumption for independent samples t-test.

Hypothesis Testing

An independent samples t-test was conducted to compare the post-test mean scores between the experimental and control groups. Based on the analysis from the independent samples test table in the original data, the following results were obtained.

Table 7. Independent Samples t-Test Results

Variable	Group	N	Mean	SD	t-value	df	p-value	Mean Difference	95% CI
Post-test	Experimental	34	73.50	12.50	10.200	55	.000	33.331	26.783 – 39.880
	Control	33	40.17	14.20					

As shown in Table 7, the experimental group (M = 73.50, SD = 12.50) achieved substantially higher post-test scores compared to the control group (M = 40.17, SD = 14.20). The mean difference between the two groups was 33.331 points, with a 95% confidence interval ranging from 26.783 to 39.880. The

independent samples t-test revealed a statistically significant difference between the experimental and control groups, $t(55) = 10.200$, $p < .001$. The t-value obtained (10.200) exceeded the critical t-value (2.002) at $\alpha = 0.05$, and the p-value was less than 0.05. Therefore, the null hypothesis (H_0) was rejected, and the alternative hypothesis (H_a) was accepted. This indicates that there is a significant difference in Social Studies learning outcomes between students taught using the PBL model and those taught using conventional methods. The PBL model had a positive and significant effect on students' learning outcomes.

Effect Size

To determine the magnitude of the treatment effect, Cohen's d was calculated using the pooled standard deviation:

$SD_{pooled} = \sqrt{[(SD_1^2 + SD_2^2) / 2]} = \sqrt{[(12.50^2 + 14.20^2) / 2]} = \sqrt{[(156.25 + 201.64) / 2]} = \sqrt{(357.89 / 2)} = \sqrt{178.95} = 13.38$

$\text{Cohen's } d = (M_1 - M_2) / SD_{pooled} = (73.50 - 40.17) / 13.38 = 33.33 / 13.38 = 2.49$

According to Cohen (2013), d = 0.2 indicates a small effect, d = 0.5 indicates a medium effect, and d = 0.8 indicates a large effect. The obtained Cohen's d value of 2.49 represents a very large effect size, indicating that the PBL model had a substantial practical impact on students' Social Studies learning outcomes. This effect size suggests that approximately 75% of the variance in post-test scores can be attributed to the instructional model. The results from Classroom observations with teachers indicated that the implementation of Problem-Based Learning (PBL) has a positive impact on improving students' Social Studies learning outcomes, particularly in terms of conceptual understanding and critical thinking skills. This also supports these findings, showing that students were more active, engaged in discussions, and able to collaborate in solving given social problems. Overall, these findings suggested that PBL not only enhances cognitive learning outcomes but also strengthens students' social skills and active participation in the learning process.

Discussion

The findings revealed a statistically significant difference between students taught using PBL and those taught using conventional methods, $t(55) = 10.200$, $p < .001$, with a very large effect size (Cohen's d = 2.49). The experimental group ($M = 73.50$, $SD = 12.50$) substantially outperformed the control group ($M = 40.17$, $SD = 14.20$), with a mean difference of 33.331 points. The results of this study indicated that the implementation of Problem-Based Learning (PBL) significantly improves students' social studies learning outcomes, both in terms of conceptual understanding and critical thinking skills. These results were in line with theoretical viewpoints that claim PBL is a constructivist learning approach that highlights students' active participation in creating knowledge through worthwhile learning experiences. According to a constructivist perspective (Adawiyah & Nahar, 2024 and Harahap & Ritonga, 2023), students build their own knowledge through problem-solving exercises and interactions with their surroundings rather than receiving it directly from their teachers. As a result, PBL's utilization of contextual problems gives students the chance to relate

course materials to actual circumstances. Additionally, a number of earlier studies demonstrating the efficacy of PBL in enhancing learning outcomes and higher-order thinking skills corroborate these findings.

The fundamental elements of PBL, which are consistent with constructivist learning theory, are responsible for the experimental group's notable improvement. PBL presents students as active knowledge builders who interact with real-world issues, carry out research, and together create answers, according to Liu et al. (2025) and Rafiq-uz-zaman & Nadeem (2025). This result is in line with earlier studies showing that PBL improves students' critical thinking and conceptual knowledge in social studies. Students in the experimental group in this study were exposed to real-world social issues that are pertinent to their everyday lives, such as maintaining cultural variety, dealing with financial difficulties, and promoting peaceful social relationships. Students were able to go beyond rote memorization and gain a better comprehension of social ideas because of this contextualized approach.

This study discovered that PBL not only enhances cognitive abilities but also helps students acquire social attitudes, including teamwork, communication, and active engagement in their education. This is consistent with social learning theory, which highlights the value of interaction in the educational process and teaches students through shared experiences, cooperation, and observation. In contrast to earlier research that mostly examined cognitive outcomes, this study focuses more on the affective domain, namely social attitudes in the setting of Islamic integrated elementary schools. As a result, the results broaden the scope by incorporating social and religious values into the educational process in addition to supporting earlier research. These findings suggest that PBL can function as an all-encompassing strategy for concurrently improving several student competencies. By offering actual data from an integrated Islamic primary school in Indonesia, the current study expands on previous research and fills the gap in the literature about the paucity of studies looking at PBL in Islamic educational settings. Recent research on character formation in Islamic elementary school lends more credence to this conclusion.

The primary features of PBL, which put students at the center of the learning process, account for the improvement in students' learning results and social attitudes noted in this study. Students are encouraged to think critically, participate in debates, and work together to discover answers when faced with real-life issues that are pertinent to their experiences (Anggraeni et al., 2023; Jarmer, 2024). Through group engagement, this technique fosters social skills development in addition to stronger conceptual knowledge. Furthermore, incorporating Islamic principles into the educational process helps students internalize societal qualities like empathy, accountability, and respect for one another (Alam & Ogawa, 2024; Er et al., 2023; Rafiq-uz-zaman & Nadeem, 2025). As a result, both the learning model and the encouraging learning environment had an impact on PBL's effectiveness in this study.

This work makes significant theoretical and practical contributions to the subject of education, especially to the teaching of social studies in Islamic integrated elementary schools. Theoretically, by including social attitudes as a crucial variable that is thoroughly investigated, this research enhances the conversation about the efficacy of problem-based learning. Practically speaking, the results can be used as a guide by educators to create more creative, contextual, and character-focused lessons. Additionally, this study helps create a more comprehensive educational approach by incorporating religious principles into contemporary learning methods. It is therefore anticipated that this research will provide a basis for creating educational methods and policies that are more pertinent to current demands.

CONCLUSION

The results of this study suggested that a teacher's capacity to provide meaningful and contextual learning experiences for students is just as important to successful learning as cognitive performance. The application of problem-based learning (PBL) demonstrates that students who actively participate in problem-solving processes not only get a greater comprehension of the subject matter but also cultivate healthy social attitudes. This emphasizes how crucial it is to change the paradigm of learning from teacher-centered to student-centered methods. Furthermore, it has been demonstrated that including social and religious values in education enhances students' character development in a comprehensive way. The study's conclusions showed that PBL may be applied as a successful alternative learning model to enhance students' social attitudes and academic performance in Islamic integrated primary schools. However, due to the study's limitations—such as its focus on a specific school setting and its brief duration—generalization of the results should be done with caution. It is therefore advised that larger and more varied sample sizes and more thorough study approaches be used in future studies. To provide a more thorough knowledge of PBL's efficacy, future research may also include other factors like learning motivation or 21st-century skills.

ACKNOWLEDGMENT

The authors would like to express their sincere gratitude to all parties who contributed to the successful completion of this study. First and foremost, we extend our appreciation to the principal, teachers, and students of SD-IT Al Aufa Bengkulu for their cooperation and active participation throughout the research process. Their openness and support were invaluable in facilitating data collection and the implementation of the instructional intervention. We also acknowledge the valuable input and constructive feedback provided by academic colleagues and reviewers, which significantly improved the quality of this manuscript. Special thanks are addressed to the experts who assisted in validating the research instruments and ensuring their appropriateness for the study context. Furthermore, the authors appreciate the institutional support provided by Universitas Islam Negeri Fatmawati Sukarno Bengkulu for enabling

the conduct of this research. This study would not have been possible without the collaborative environment and academic encouragement provided by the institution. Finally, we are grateful to all individuals and institutions, whether mentioned directly or not, who have contributed in various ways to the completion of this research.

REFERENCES

Adawiyah, R., & Nahar, S. (2024). Differential Learning Based on Information and Communication Technology: Experiential Practice in Islamic Education. *Edureligia; Jurnal Pendidikan Agama Islam*, *08*(01), 59–75. http://doi.org/10.33650/edureligia.v8i1.8577

Alam, J., & Ogawa, K. (2024). Future-Readiness and Employable ICT Skills of University Graduates in Bangladesh : an Analysis During the Post-Covid Era. *Cogent Social Sciences*, *10*(1), 1–18. https://doi.org/10.1080/23311886.2024.2359014

Alias, M. F. Bin, Rahman, R., Mahaiyadin, M. H. Bin, Rivauzi, A., Subri, I. B. M., Wirdati, W., & Sulaiman, S. (2024). Implementation of Cooperative Script Model in Teaching Islamic Education in Elementary School. *International Journal of Multidisciplinary Research of Higher Education (IJMURHICA)*, *7*(1), 13–24. https://doi.org/10.24036/ijmurhica.v7i1.167

Andayanie, Masayu, L., Adhantoro, M. S., Purnomo, E., & Kurniaji4, G. T. (2025). Implementation of Deep Learning in Education: Towards Mindful, Meaningful, and Joyful Learning Experiences. *Journal of Deep Learning*, *1*(1), 47–56. https://doi.org/10.23917/jdl.v1i1.11157

Anggraeni, D. M., Prahani, B. K., Suprapto, N., Shofiyah, N., & Jatmiko, B. (2023). Systematic Review of Problem Based Learning Research in Fostering Critical Thinking Skills. *Thinking Skills and Creativity*, *49*, 101334. https://doi.org/10.1016/j.tsc.2023.101334

Asilevi, M.N., Kärkkäinen, S., Sormunen, K., & Havu-Nuutinen, S. (2024). A Comparison of Science Learning Skills in the Teacher-Centered Approach and Inquiry-Based Science Fieldwork: Primary School Students' Perceptions. *International Journal of Education in Mathematics, Science, and Technology (IJEMST)*, *12*(1), 1–19. https://doi.org/10.46328/ijemst.3146

Brehm, A., & Langer, P. C. (2025). Is It Really (All) About Empathy? A Strong Reflexivity Approach to Emotionally Charged Research Experiences. *Forum: Qualitative Social Reseach*, *26*(1), 1–31. https://doaj.org/article/b10fe94d4b544e7ba89139d3e0b254ee

Brugar, Kristy A, Roberts, Kathryn L, & Cuenca, Alexander. (2024). Inquiry on Inquiry: Examining Student Actions Required in Elementary Inquiry Design Models. *The Journal of Social Studies Research*, *48*(2), 102–113. https://doi.org/10.1177/23522798231219968

Bulut Ates, C., & Aktamis, H. (2024). Investigating the effects of creative educational modules blended with Cognitive Research Trust (CoRT) techniques and Problem Based Learning (PBL) on students' scientific

creativity skills and perceptions in science education. *Thinking Skills and Creativity*, *51*, 101471. https://doi.org/10.1016/j.tsc.2024.101471

Chai-Arayalert, S., Suttapong, K., & Chumkaew, S. (2023). Design of Digital Environments to Enhance Handicraft Co-Learning Experiences. *Cogent Business and Management*, *10*(3). 1-14. https://doi.org/10.1080/23311975.2023.2286687

Chuaichana, K., & Wutchana, U. (2025). The Effects of Problem-Based Learning (PBL) with Games on Learning Achievement and Problem-Solving Skills on the Heterogeneous Mixture Separation in Science for Primary 6 Students. *Journal of Buddhist Education and Research (JBER)*, *11*(1), 59–71. https://doi.org/https://so06.tcithaijo.org/index.php/jber/article/view/280924

Er, Z., Artut, P. D., & Bal, A. P. (2023). Investigation of the Relationship between Estimation Skill, Estimation Skill Self-Efficacy, and Academic Achievement of Secondary School Students. *International Journal on Social and Education Sciences*, *4*(1). 1-17. https://doi.org/10.46328/ijonses.292

Farrow, J. M., Kavanagh, S. S., Samudra, P., & Pupik Dean, C. (2024). The Promise of the Project to Student-Centered Learning: Connections Between Elements, Curricular Design, and Practices of Project Based Learning. *Teaching and Teacher Education*, *152*, 104776. https://doi.org/10.1016/j.tate.2024.104776

Gultekin, E. Ö. & M. (2024). Small Group, Problem-Based Learning in Primary School Social Studies: a Mixed Methods Study in Turkey. *Issues in Educational Research*, *34*(4), 1506–1525. https://search.informit.org/doi/abs/10.3316/informit.T20250304000081906 34896961

Harahap, H. N., & Ritonga, A. A. (2023). The Effect of Using Project Based Learning Model with Autoplay Media Studio on Learning Achievement. *Edureligia: Jurnal Pendidikan Agama Islam*, *07*(01), 99-113. https://doi.org/10.33650/edureligia.v7i1.6103

Hasanah, M., Agus R, A. H., Rofiqi, & Ayuba, J. O. (2025). The Effect of Customer Experience and E-WOM on Increasing the Number of Students. *Al-Fikru: Jurnal Pendidikan dan Sains*, *6*(1), 12–20. . https://doi.org/10.55210/al-fikru.v6i1.1993

Jarmer, S. T. (2024). Critique of Religion and Critical Thinking in Religious Education. *British Journal of Religious Education*, *47*(3). 1–15. https://doi.org/10.1080/01416200.2024.2403400

Jedlicka, P., & Havenith, M. N. (2025). Religious and Spiritual Experiences from a Neuroscientific and Complex Systems Perspective. *Neuroscience & Biobehavioral Reviews*, *177*(1), 109–130. https://doi.org/10.1016/J.NEUBIOREV.2025.106319

Jeet, G., & Pant, S. (2023). Creating Joyful Experiences for Enhancing Meaningful Learning and Integrating 21 st Century Skills. *International Journal of Current*

Science Research and Review, *06*(02), 900–903. https://doi.org/10.47191/ijcsrr/V6-i2-05

Jiang, D., Dahl, B., Chen, J., & Du, X. (2023). Engineering Students' Perception of Learner Agency Development in an Intercultural PBL (Problem- and Project-Based) Team Setting. *IEEE Transactions on Education*, *66*(6), 591–601. https://doi.org/10.1109/TE.2023.3273177

Kadaskar, H. R. (2024). Enhancing User Experience in Mobile Application Design Through Gestural Interaction: a Human-Computer Interaction Perspective. *International Journal of Scientific Research in Modern Science and Technology*, *3*(8), 1–6. https://doi.org/10.59828/ijsrmst.v3i8.239

Kuo, Y. K., Batool, S., Devi, S., Tahir, T., & Yu, J. (2024). Exploring the Impact of Emotionalized Learning Experiences on the Affective Domain: a Comprehensive Analysis. *Heliyon*, *10*(1), 57–74. https://doi.org/10.1016/j.heliyon.2023.e23263

Liu, G. L., Lee, J. S., & Zhao, X. (2025). Critical Digital Literacies, Agentic Practices, and AI-Mediated Informal Digital Learning of English. *Elsevier*, *4*(2), 1–15. https://doi.org/10.1016/j.system.2025.103797

Munif, M., & Sulaiman, A. N. M. (2023). Application Grouping Skills : Learning Methods to Support Student Talent Interest Based on Experiential Learning. *Jurnal Teknologi Pendidikan : Jurnal Penelitian Dan Pengembangan Pembelajaran*, *8*(2), 383–391. https://doi.org/10.33394/jtp.v8i2.6570

Pan, A. J., Lai, C. F., & Kuo, H. C. (2023). Investigating the Impact of a Possibility-Thinking Integrated Project-Based Learning History Course on High School Students' Creativity, Learning Motivation, and History Knowledge. *Thinking Skills and Creativity*, *47*(2), 101-114. https://doi.org/10.1016/j.tsc.2022.101214

Ponomariovienė, J., & Jakavonytė-Staškuvienė, D. (2024). Experiences of Setting Short-Term Learning Goals for Primary School Students and Reflecting on Their Implementation: a Case Study of One Lithuanian School. *Cogent Education*, *11*(1). 10-21. https://doi.org/10.1080/2331186X.2024.2438595

Rafiq-uz-zaman, M., & Nadeem, M. A. (2025). Unveiling Critical Success Factors for Skill-Based Education Programs: a Student-Centred Analysis in Pakistani Schools. *Inverge Journal of Social Sciences*, *4*(3), 11–19. https://doi.org/https://invergejournals.com/

Saad, A., & Zainudin, S. (2024). A Review of Teaching and Learning Approach in Implementing Project-Based Learning (PBL) with Computational Thinking (CT). *Interactive Learning Environments*, *32*(10), 7622–7646. https://doi.org/10.1080/10494820.2024.2328280

Sarnoko, Asrowi, Gunarhadi, B. U. (2024). Feasibility of a Problem-Based Social Constructivism Learning Model to Improve Higher-Order Thinking Skills among Primary School Students. *Journal of Education and E-Learning Research*, *11*(3), 588–596. https://doi.org/DOI: 10.20448/jeelr.v11i3.5927

Shekh-Abed, A. (2024). Metacognitive Self-Knowledge and Cognitive Skills in

Project-Based Learning of High School Electronics Students. *European Journal of Engineering Education*, *50*(1), 214–229. https://doi.org/10.1080/03043797.2024.2374479

Umar, Ghufron, A., & Wuryandani, W. (2025). Integrating Maja Labo Dahu Culture in Islamic Education: a Module for Character Development in Elementary Students. *Journal of Education and Learning (EduLearn)*, *19*(2), 711~723. 10.11591/edulearn.v19i2.21801

Wahono, Sholehuddin, Efendi, B., Santosa, T. A., & Manahor, A. (2025). The Effect of Blended Problem-Based Learning on Strengthening Islamic Character Values: A Meta-Analysis of Islamic Education Studies. *AL-ISHLAH: Jurnal Pendidikan*, *17*(4). https://doi.org/10.35445/alishlah.v17i4.7555

Yang, W., Li, H., Su, A., & Ding, L. (2023). Application of Problem Based Learning (PBL) and Case Based Learning (CBL) in the Teaching of International Classification of Diseases Encoding. *Scientific Reports*, *13*(1), 15220. https://doi.org/10.1038/s41598-023-42175-1

Yanti, T. N. C. & Y. E. (2025). The Influence of Islamic Value Integrated Social Studies Instruction on Elementary Students' Social Attitudes: a Quantitative Study in Blitar City. *Proceeding International Seminar on Islamic Education and Peace*, *8*(1). 910–918. https://ejournal.uniramalang.ac.id/isiep/article/view/8810

Zafar, M. B., & Abu-Hussin, M. F. (2025). Religiosity and Islamic Work Ethic: a Cross-Cultural Comparison in Majority and Non-Majority Muslim Countries. *International Journal of Intercultural Relations*, *105*(December 2024), 102115. https://doi.org/10.1016/j.ijintrel.2024.102115