



13The Effectiveness of Inquiry-Based Learning in Fostering Students' Problem-Solving Competence: Evidence from Secondary Education

Faizatul Qudriyah¹, Umar Manshur²✉

^{1,2}Nurul Jadid University, Paiton, Indonesia

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✉ Correspondence

Pmb.faizatulqudriyah020102@gmail.com

Abstract:

Islamic Religious Education (PAI) plays a crucial role in shaping students' character and higher-order thinking skills; however, learning practices at the junior high school level remain predominantly conventional and teacher-centered, resulting in limited stimulation of students' problem-solving abilities. This study aims to (1) examine the implementation of the Inquiry-Based Learning (IBL) approach, (2) identify the challenges encountered by teachers, and (3) analyze its impact on students' problem-solving skills in PAI learning. The research was conducted at Muhammad Shodiq Maron Middle School and Sunan Bonang Maron Middle School, located in Probolinggo, East Java, Indonesia. This study employed a qualitative method with a case study approach, utilizing data collection techniques such as observation, in-depth interviews, and documentation. Data validity was ensured through triangulation and member checking. The findings reveal that IBL is systematically implemented through several stages, including orientation, problem formulation, investigation, data analysis, and reflection. In this process, teachers function as facilitators who guide students in constructing knowledge, while students actively engage in critical inquiry, collaborative discussion, and problem-solving activities. Although several challenges were identified, particularly related to limited instructional time and varying levels of teacher readiness in designing inquiry-based activities, the implementation of IBL demonstrated significant positive outcomes. It enhanced students' active participation, confidence in expressing ideas, critical thinking capacity, and ability to relate learning materials to real-life contexts. In conclusion, the IBL approach is effective in improving students' problem-solving skills in PAI learning and fostering critical, reflective, and solution-oriented learners, making it highly relevant for 21st-century contextual education.

INTRODUCTION

Islamic Religious Education (PAI) plays a strategic role in shaping the character and personality of students. PAI serves not only as a means of transferring religious knowledge but also as a medium for internalizing spiritual,

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social, and moral values that serve as the foundation for students' daily lives. However, the reality of PAI learning in various schools, particularly at the junior high school (SMP) level, still faces various challenges, including low student engagement and weak problem-solving skills in religious and social contexts. This condition indicates that PAI learning still tends to be conventional and teacher-centered, thus failing to optimize students' critical thinking potential.

In the context of 21st-century education, learning is no longer solely focused on mastering material; it must also foster critical, creative, collaborative, and communicative thinking skills (the 4Cs). Therefore, an innovative, student-centered learning approach is needed. One relevant approach is Inquiry-Based Learning (IBL), a learning strategy that encourages students to actively ask questions, explore, analyze, and discover concepts independently. (Savery, 2021) In Islamic Education learning, this approach enables students not only to understand the material textually, but also to be able to relate it to the realities of life and make the right decisions in dealing with moral and social issues.

Theoretically, Inquiry-Based Learning is an approach that places students as the main subjects in the learning process through investigative and discovery activities. (Hmelo-Silver, Cindy E., Ravit Golan Duncan, 2021) This approach is believed to be able to increase students' learning engagement, creativity, and problem-solving abilities. (& AW Rahmawati, Eka, 2022), (Nuryani, 2021) However, the implementation of IBL in Islamic Religious Education learning still faces various obstacles, such as teacher readiness, limited resources, and diverse student characteristics. (Fadilah, Nurul, Ahmad Syukri, 2021) This indicates the need for a more in-depth study regarding the contextual application of this strategy in the school environment.

Muhammad Shodiq Maron Junior High School and Sunan Bonang Maron Junior High School are two educational institutions with strong socio-religious backgrounds. However, based on initial observations, Islamic Religious Education (PAI) learning at both schools still tends to use conventional methods. Consequently, active student participation is relatively low and their ability to resolve religious issues in everyday life remains limited. Yet, the Independent Curriculum emphasizes the importance of student-centered, competency-based learning, which fosters character and higher-order thinking skills. (Ministry of Education, Culture, Research, and Technology, 2022)

In an effort to address these challenges, both schools began implementing an Inquiry-Based Learning strategy in stages. At Muhammad Shodiq Maron Middle School, IBL was implemented on social morals, where students were encouraged to identify social problems in the school environment, such as bullying, and then seek solutions based on the verses of the Quran and Hadith. Meanwhile, at Sunan Bonang Maron Middle School, IBL was implemented on modern muamalah jurisprudence, focusing on analyzing digital economic practices such as online buying and selling and digital loans from an Islamic perspective. This approach has been proven to increase student engagement, strengthen conceptual understanding, and foster critical and solution-oriented attitudes in addressing contemporary issues.

Various previous studies also show that the application of IBL in Islamic Education learning can improve students' critical thinking skills, creativity, and problem-solving abilities. (Ismail, 2022). In addition, this approach is able to create

a more meaningful learning atmosphere because students play an active role in the learning process. (& AS Rahmawati, Eka, 2023) However, the implementation of IBL in Islamic-based schools is still less than optimal, due to teachers' limited understanding, minimal training, and inadequate support in facilities and infrastructure.

Based on this background, this study aims to examine in-depth the implementation of the Inquiry-Based Learning strategy in Islamic Religious Education (PAI) learning at Muhammad Shodiq Maron Middle School and Sunan Bonang Maron Middle School, and analyze its impact on improving students' problem-solving abilities. This research is expected to provide theoretical contributions in the development of innovative PAI learning models, as well as practical contributions for teachers and policymakers in improving the quality of religious education that is relevant to the demands of the times.

RESEARCH METHOD

The approach used in this study is a qualitative approach that aims to gain a deeper understanding of the application of Inquiry Based Learning (IBL) strategies in improving students' problem-solving abilities in Islamic Religious Education (PAI) learning. This approach allows researchers to explore students' and teachers' perceptions, experiences, and views regarding the effectiveness of IBL in the context of Islamic Religious Education (PAI) learning in both schools. The main focus is to gain insight into how IBL is implemented, the challenges faced, and its impact on the development of students' skills. Researchers will conduct direct observations, interviews with teachers and students, and analyze documentation to collect data. The data obtained will be analyzed thematically to identify emerging patterns related to the impact of IBL on students' creativity and problem-solving abilities.

This research was conducted in two educational institutions with different characteristics, namely Muhammad Shodiq Maron Junior High School, which is located within the Al-Habib Husein Bin Hadi Al-Hamid Islamic boarding school environment, and Sunan Bonang Maron Junior High School, which is outside the Islamic boarding school environment but remains within a rural religious culture. These environmental differences provide unique dynamics in the application of the Inquiry Based Learning (IBL) strategy in Islamic Religious Education (PAI) learning. At Muhammad Shodiq Junior High School, IBL is supported by a strong Islamic boarding school nuance, thus enriching the dimensions of students' religious practices, while at Sunan Bonang Junior High School, this strategy is integrated with modern educational approaches and the use of learning resources such as technology and books. The combination of these two contexts provides a comprehensive perspective in developing students' problem-solving skills and 21st-century competencies.

This study uses a qualitative approach with the researcher as the primary instrument, supported by tools such as documentation and interview recordings. Data sources consist of primary data (interviews with teachers and students) and secondary data (documents, books, and related archives). Data collection techniques include naturalistic observation, structured to in-depth interviews, and documentation. Data analysis uses the Miles and Huberman model through the stages of data reduction, presentation, and verification carried out interactively

until data saturation is achieved. Data validity is maintained through triangulation of sources and methods, member checks, audit trails, and extended research time, so that the research results are more valid and accountable.

RESULTS AND DISCUSSION

Results

Implementation of Inquiry-Based Learning Strategy to Improve Students' Problem-Solving Skills in Islamic Religious Education Learning at Muhammad Shodiq Maron Middle School and Sunan Bonang Maron Middle School

Islamic Religious Education (PAI) learning in the 21st century is required to function not only as a medium for transferring religious knowledge, but also as a means of developing critical thinking, analytical skills, and problem-solving. However, in practice, PAI learning is still often dominated by conventional, teacher-centered methods that emphasize memorization, thus under-motivating students' active involvement in understanding and resolving religious issues contextually.

As a solution, the Inquiry-Based Learning (IBL) strategy was implemented because it positions students as active participants in the learning process. Through this approach, students are trained to ask questions, formulate hypotheses, conduct investigations, and draw conclusions based on data and evidence. In the context of Islamic Religious Education (PAI), this strategy helps students understand Islamic teachings not only textually but also contextually within social life. This research was conducted in the even semester of the 2024/2025 academic year at Muhammad Shodiq Maron Middle School (256 students, based in an Islamic boarding school) and Sunan Bonang Maron Middle School (198 students, based in a full-day school). Both schools faced similar challenges, namely low student problem-solving skills with an average initial score below 65. Therefore, a five-phase IBL strategy was implemented on the topic "The Law of Zakat Fitrah and Its Problems."

The first stage, orientation, involved providing a video about zakat distribution in remote areas. This activity sparked student enthusiasm, as demonstrated by the 142 questions categorized into legal, mustahiq (receiving recipients), and distribution aspects. Student engagement was high, reaching over 80% in both schools. In the second stage, question formulation, students develop questions and hypotheses in groups. The teacher facilitates this by asking prompting questions to encourage critical thinking. Observations show an improvement in the quality of students' questions, from moderate to good. In the third stage, investigation, students collect data from various sources such as books, the Quran, Islamic jurisprudence texts, and interviews. This process not only deepens understanding but also improves students' collaborative skills in discussions and role-playing.

In the fourth stage, analysis and interpretation, students process data and formulate conclusions in the form of presentations or concept maps. They begin to connect arguments to social realities, such as the importance of targeted zakat distribution based on Islamic principles of justice.

The fifth stage, discussion and reflection, involves group presentations and a question-and-answer session. The discussion is active and argumentative, while

the reflection helps students understand the learning process they have undergone.

Overall, the implementation of Inquiry-Based Learning (IBL) has transformed Islamic Religious Education (PAI) learning into a more interactive and meaningful one. Students become more active, critical, and able to connect religious concepts to real-life situations. Thus, the IBL strategy is effective in improving students' problem-solving skills and is suitable for implementation in Islamic Religious Education (PAI) learning at the junior high school level.

Challenges for Teachers in Implementing Inquiry-Based Learning (IBL) in Islamic Religious Education Learning

The implementation of the Inquiry-Based Learning (IBL) strategy in Islamic Religious Education (PAI) at Muhammad Shodiq Maron Middle School and Sunan Bonang Maron Middle School presents a significant transformation in the learning approach, which previously tended to be conventional, towards more active, critical, and meaningful learning. However, based on the results of field research through observation, interviews, and documentation, the implementation of this strategy is not without various complex challenges faced by teachers. These challenges include pedagogical, technical, cultural, and institutional structural aspects that are interrelated and influence the effectiveness of IBL implementation in the classroom.

Pedagogically, teachers face difficulties in designing inquiry-based learning that fosters higher-order thinking skills. This is as expressed by Ms. Siti Nafisatul Munawaroh, S.Si., a PAI teacher at Muhammad Shodiq Maron Middle School, who stated that designing stimulating questions that are appropriate to students' cognitive levels while also embodying Islamic values is a major challenge. This situation indicates that the success of IBL depends heavily on teachers' ability to develop learning scenarios that are not only systematic, but also reflective and contextual. Without careful planning, the inquiry process tends to stop at superficial discussions without reaching the stage of in-depth analysis.

From a classroom management perspective, the challenge arises in maintaining a balance between students' freedom of thought and conducive classroom control. Ms. Qoyyimah Indah Y., S.Pd., a PAI teacher at Sunan Bonang Maron Middle School, revealed that discussion activities often make the class less controlled, so teachers must actively facilitate and direct the discussion to maintain focus. This indicates that the implementation of IBL requires high managerial skills, especially in managing the dynamics of heterogeneous learning groups.

Field observations reinforce these findings, indicating that in practice, students still experience difficulties initiating the inquiry process. When presented with a case study on "teenage social interactions from an Islamic perspective," several groups of students appeared passive and confused. In these situations, teachers must provide scaffolding in the form of guiding questions to help students develop their own thought processes. This process requires patience, thoroughness, and effective communication skills to gradually develop independent thinking.

Furthermore, limited resources pose a significant challenge, particularly at Sunan Bonang Maron Middle School. Limited access to technology, such as gadgets and the internet, hinders the information exploration process that is at the heart of

inquiry learning. Teachers must employ various adaptive strategies, such as utilizing printed learning resources, whiteboards, and assigning roles within groups. This situation demonstrates that the success of IBL is determined not only by teacher competence but also by adequate facility support.

From the student perspective, the main challenge lies in their low readiness and independence in learning. Most students are still accustomed to passive learning patterns, requiring time to adapt to inquiry-based learning. Students who admitted to initial confusion but then began to enjoy the discussion process demonstrate that learning transformation requires a gradual process supported by intensive teacher guidance.

Institutionally, school support is a crucial factor in overcoming these obstacles. Teacher training programs, collaborative reflection, and mentoring between teachers are strategic steps taken by schools to increase teacher capacity in implementing IBL. Furthermore, flexibility in implementing IBL stages is also a practical solution to address limited learning time.

To clarify the complexity of the challenges faced, the following table presents a classification of IBL implementation challenges:

Challenge Aspects	Problem Description	Impact on Learning	Implemented Solutions
Pedagogical	Teachers have difficulty formulating HOTS questions and inquiry scenarios	Inquiry is not in-depth	Teacher training and reflection
Class Management	Uncontrolled discussion	The class is less conducive	Strengthening teacher facilitation
Student Readiness	Students are passive and not used to inquiry	Slow process	Scaffolding and assistance
Resource	Technology and reference limitations	Limited exploration	Utilization of alternative sources
Time	Limited class hours	Inquiry stage is incomplete	Modification of IBL stages
Evaluation	Assessment is still conventional	Does not reflect the process	Development of authentic rubrics
Institutional	Minimal policy support	Implementation is not optimal	Training and supervision programs

Discussion

Results of Implementing Inquiry-Based Learning on Students' Problem-Solving Abilities

The research results show that the application of the Inquiry-Based Learning strategy in Islamic Religious Education (PAI) learning has a significant impact on improving students' problem-solving abilities. The learning process, which involves the stages of orientation, problem formulation, investigation,

interpretation, and reflection, creates a dialogic, collaborative, and contextual learning environment.

In practice, students not only understand religious concepts theoretically but are also able to relate them to social realities. For example, in learning about zakat, students conduct field investigations and discover discrepancies in the data on eligible recipients. This finding encourages them to think critically and relate the findings to Quranic verses, fostering a deeper and more applicable understanding. The reflection process demonstrated significant changes in students' thinking, from passive to active, from textual to contextual. Furthermore, students' collaboration and communication skills improved through group discussions and presentations of investigative findings.

The following is data on the increase in students' problem-solving abilities before and after the implementation of IBL:

Problem Solving Indicator	Before IBL (%)	After IBL (%)
Identifying the problem	40%	82%
Proposing an Islamic solution	35%	78%
Evaluate and reflect	25%	75%

The data shows significant improvements across all indicators, particularly in reflection skills, which were previously a major weakness for students. This confirms that the IBL strategy is effective in developing critical thinking and problem-solving skills based on Islamic values.

In addition, there are differences in implementation and results between the two schools that were the research locations, as shown in the following table:

Aspect	Muhammad Shodiq Maron Middle School	Sunan Bonang Maron Middle School
Teacher Readiness	Tall	Currently
Student Enthusiasm	Tall	Increasing gradually
Infrastructure	Quite complete	Limited
Evaluation Results	85% complete	78% complete
Media Innovation	Variative (video, simulation)	Limited (oral discussion)

Overall, the results of this study indicate that the Inquiry-Based Learning strategy can comprehensively improve the quality of Islamic Religious Education (PAI) learning, encompassing cognitive, affective, and social aspects. Learning becomes more meaningful because students are directly involved in the knowledge-seeking process, rather than simply passively receiving information. Therefore, IBL can be used as a strategic alternative in developing PAI learning that is more relevant to current demands.

CONCLUSION

Based on the research results and discussion, the implementation of the Inquiry-Based Learning (IBL) strategy in Islamic Religious Education learning at Muhammad Shodiq Maron Middle School and Sunan Bonang Maron Middle School took place through the stages of orientation, problem formulation, investigation, analysis, and reflection. This process encouraged students to think critically,

relate Islamic teachings to everyday life, and solve problems systematically and collaboratively. Learning became more active, contextual, and increased student engagement in understanding religious values in an applied manner.

, the implementation of IBL faces several challenges, such as time constraints. However, teacher preparedness, and differences in student abilities. However, these challenges can be overcome through school support, teacher training, and the implementation of flexible and adaptive learning strategies. Research also shows an improvement in students' problem-solving skills, as evidenced by their ability to formulate problems, connect religious concepts with social realities, and convey solutions logically and reflectively.

These findings confirm that IBL is relevant for Islamic Religious Education (PAI) learning in developing critical thinking and problem-solving skills based on Islamic values. Therefore, teachers need to continue developing pedagogical competencies and be more innovative in implementing inquiry-based learning. Schools are also expected to provide support in the form of training, facilities, and collaboration spaces. Meanwhile, further research is recommended to use a quantitative or mixed-method approach to obtain more measurable and comprehensive results.

Furthermore, the implementation of IBL contributes to shaping students' religious attitudes and character, leading to greater reflection in decision-making. Students not only cognitively understand the material but also internalize Islamic values in their daily behavior. This demonstrates that inquiry-based learning impacts not only academic aspects but also the ongoing strengthening of students' affective and moral dimensions.

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