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Implementation of the Problem Based Learning Strategy in Islamic Religious Education Learning in Improving Students' Higher Order Thinking Skills

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ABSTRACT

This research was driven by the researcher's concern over the rapid development of the digital era, which demands that teachers equip students with critical thinking skills to face emerging challenges. Higher order thinking skills are essential for students to adapt to technological advances while maintaining a strong foundation in Islamic Religious Education values. This study aims to examine the implementation of the Problem Based Learning (PBL) strategy in Islamic Religious Education at State Vocational High School 1 Ponorogo and its impact on enhancing students' higher order thinking skills. Using a qualitative approach and case study design, data were collected through in-depth interviews, non-participatory observations, and documentation. The data were analyzed using Miles and Huberman's interactive model: data collection, reduction, display, and conclusion drawing. Validity was ensured through triangulation. The findings show that PBL was implemented through five stages: setting objectives and presenting problems, forming groups, guiding group work, student presentations, and evaluation. The implementation of PBL had a significant positive impact on students' cognitive, affective, and psychomotor development. Moreover, it enhanced students' critical thinking and problem-solving abilities in learning Islamic Religious Education. Overall, PBL proved to be an effective strategy in fostering higher order thinking among students in the digital age.

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1. INTRODUCTION

High-level thinking ability is defined as the ability to think that does not only use memory stages but needs to use even higher levels such as thinking creatively and thinking critically (Alsaleh, 2020; Mislia et al., 2019; Nurhidayat et al., 2023). The ability to think at a higher level is a concept of educational change that began in the early 21st century with the aim of preparing human resources to face the Industrial Revolution 4.0 (Revelation Kusuma et al., 2025). In these learning characteristics, it

can be concluded that this learning requires students to understand information and reason, not just remember information (Nasrudin et al., 2025). Conklin stated that higher order thinking skills include critical thinking and creative thinking which require students to play an active role, not a passive one (H. G. Conklin et al., 2024; J. Conklin, 2022; Nurhidayat et al., 2023).

Regarding students' higher-order thinking skills, this is one of the main issues in education with data-based multimodal learning analysis to find solutions. High-level thinking skills are observed in solving complex, open-ended problems and uncertain problem situations faced by students. Therefore, researchers need to identify and define target situations in terms of specific competencies. The steps of this method are not universal and are not designed.

High-level thinking skills are complex thinking processes in describing material, making conclusions, building representations, analyzing, and building relationships involving the most basic mental activities (Damayanti et al., 2023; Fahmi et al., 2019). Pogrow designed the Higher Order Thinking Skills (HOTS) program specifically for educationally disadvantaged students, both Title I students and students with learning disabilities. This program specifically trains four types of thinking skills: (1) metacognition, or the ability to think about thinking; (2) make conclusions; (3) transfer, or generalize, ideas across contexts; and (4) synthesizing information. In its 25-year history, the HOTS program has produced advances in national standardized tests, state tests, measures of metacognition, writing, problem solving, and grade point average.

In the learning process in this century, high-level thinking skills have become a necessity. This is to train students to think creatively and think critically and be able to choose the best solution when facing a problem. In this digital era, information is developing so rapidly, high-level thinking skills are the ability to analyze, evaluate and create new information using existing knowledge. This ability is very important in education and everyday life. With globalization and technological advances, people must be able to face new challenges that require critical and analytical thinking. Students with high intelligence have a better ability to adapt to change, think independently, and contribute greatly to society. In addition, this ability is very important in the world of work, where employees are expected to not only follow instructions, but also have the ability to think innovatively and find solutions.

Critical and creative thinking, if analogous, is a process of deep and wide thinking. Deep refers to the critical context for which students must be able to think about something in depth as the context of deep learning. Creative thinking can be assumed to be a concept of thinking that is more out of the box. Of the four, the thinking process in the context of high-level thinking is a fundamental concept for how students can elaborate on these four competencies in their thinking process following the series of learning carried out step by step.

Studies show that active learning methods such as problem-based learning, group discussions and collaborative projects can improve students' thinking abilities. As a result, it is very important for educators to use approaches that support the formation of students' higher-order thinking abilities in the classroom. Problem Based Learning is a learning model that actively involves students to overcome and solve problems in life. The main goal of problem-based learning is to foster critical reasoning or problem solving skills in students. Problem-based learning is an approach to professional education that is based on research on how adults learn most effectively. This approach was first introduced in the field of medicine at McMaster University in Canada in 1969.

This learning strategy aims to train students to learn independently, using real world problems as a context for students to learn with critical thinking and skills in solving life problems. Curriculum changes require a change in learning paradigm from teaching to learning. Therefore, teachers are required to be creative and innovative in designing their learning, so that learning is active, creative, fun and students are motivated to learn independently.

Achieving learning objectives is influenced by several factors and one of them is the learning method. Based on research results, it shows that using appropriate learning methods can provide better learning outcomes (Alqahtani & Rajkhan, 2020). Students must be active in the learning process if they want to obtain relevant knowledge, improve their thinking abilities, and so that students are able to implement their knowledge. One method that is widely used to increase student activity in the learning process is the problem based learning method.

Every student is at a different point. It is important to remember that these skills are not related to the age of students (Nearing et al., 2021). This means that lower level thinking skills are not only possessed by younger students and higher level thinking skills are only possessed by older students. On the same occasion, Monckton also said that there are three ways for these skills to be developed in the classroom: Transfer, Critical thinking, and Problem solving, all three of which cannot be overcome by simply relying on memorized procedures. The incidents mentioned above are contrary to the theory of 21st Century Skills, including learning based on higher level thinking skills which is still not consistently applied by teachers in developing 21st century skills. The ability to think at a higher level is a vital skill in facing the dynamics of modern life. Educators and educational institutions need to be committed to creating a learning environment that supports their development, so that students can become individuals who are ready to face future challenges.

The approach used in this research is a qualitative approach with the type of research being a case study. Data collection procedures used: in-depth interviews, non-participatory observation and documentation. The data analysis used is Miles and Huberman's interactive model data analysis, which includes: data collection, data reduction, data presentation, as well as drawing conclusions and verification. To check the validity of the findings using triangulation techniques. In an initial assessment at State Vocational School 1 Ponorogo, researchers found that the Islamic Religious Education learning process there implemented a problem based learning strategy. It is hoped that this will have a positive impact on students' development in terms of cognitive, affective and motor skills. Based on the background of the problem above, researchers are interested in carrying out research with the title Implementation of Problem Based Learning Strategies in Islamic Religious Education Learning in Improving Students' Higher Order Thinking Skills.

2. METHODS

This research uses a qualitative approach with a case study type of research (L. Haven & Van Grootel, 2019; Lejeune, 2019). This approach was chosen because the researcher wanted to understand in depth the process of implementing the Problem Based Learning (PBL) strategy in Islamic Religious Education learning and its impact on students' high-level thinking abilities. The case study focuses on real situations that occur at SMK Negeri 1 Ponorogo as the research location, by examining various learning activities in depth and contextually.

Data collection techniques in this research include: in-depth interviews, non-participatory observation, and documentation. Interviews were conducted with Islamic Religious Education teachers and several students who were research subjects to gather information related to the implementation of PBL. Observations were carried out during the learning process to find out directly the strategies used by teachers in directing students to think critically. Meanwhile, documentation in the form of a syllabus, lesson plans, photos of activities and student assignment results are used as main data support. For data analysis, researchers used the Miles and Huberman interactive model which consists of three main stages, namely: data reduction, data presentation, and conclusion drawing and verification. Data validity is obtained through triangulation of sources and techniques, namely comparing data from interviews, observations and documentation to ensure

consistency of information. With this method, researchers can obtain a complete and in-depth picture of the implementation of PBL strategies and their influence on students' higher-level thinking abilities.

3. FINDINGS AND DISCUSSION

Implementation of the Problem Based Learning Strategy in Islamic Religious Education Learning at State Vocational School 1 Ponorogo

Implementation is the process of implementing or implementing a plan, idea, or system into practice. Without implementation, a plan will be meaningless. In connection with the implementation of the Problem Based Learning strategy in Islamic Religious Education Learning at State Vocational School 1 Ponorogo, the data obtained by researchers in the field after analysis shows that there is conformity with theory. This can be seen from the explanation below:

The implementation of the Problem Based Learning learning strategy carried out there is: first, the teacher explains the learning objectives to be achieved and directs students to the problems to be solved. For example: discussing hoax news on social media and looking for solutions based on Islamic teachings regarding communication ethics; Examining the phenomenon of environmental damage with an approach to Islamic values regarding the preservation of nature (caliph fil ardh). Second, the teacher divides the groups. Third, the teacher guides students in group activities in data collection and analysis. Fourth, participants are asked to present and present the results of the group discussion. Fifth, the teacher evaluates and reflects on the results of the discussion. This data is in accordance with the theory regarding the syntax of Problem Based Learning (PBL) learning strategies presented by Suyanto, et al. (Oktaviyanti & Novitasari, 2019; Windari et al., 2024):

a. Orientation of students to the problem, at this stage the teacher explains the learning objectives, logistics required, and motivates students so that in the problem solving process they can participate actively.
b. Organizing learning, at this stage, the teacher helps students in making definitions and organizing learning that is linked to the problem to be solved.
c. Individual/group coaching, at this stage, students are divided into several groups or individuals. They are asked to collect relevant information, as well as carry out practical activities in order to solve problems given by the teacher. In this case, the teacher acts as a facilitator providing guidance in this activity.
d. Development and presentation of work results, at this stage, students are assisted and guided by the teacher in developing and preparing problem solving results. The form of the report can be in the form of an article, poster, video, power point and so on according to the teacher's instructions.
e. Process analysis and evaluation, at this stage, students are guided to reflect on the work/investigation and processes that have been carried out.

Apart from the theory above, the data in the field is also in agreement with the following theory, although there are differences regarding the steps taken:

a. Learning begins with giving a problem, usually the problem has a context with the real world,
b. Learners in groups actively formulate problems and identify gaps in their knowledge,
c. Study and search for material related to the problem on your own,
d. Report solutions to problems.

From the data in the field above, it is actually also in line with the following steps in the Problem-Based Learning (PBL) strategy, but in this theory each step is more detailed.

a. Problem Identification: Choose a problem that is relevant and interesting to students. The problem must be complex enough to stimulate critical thinking.
b. Group Formation: Form small groups of students to encourage collaboration and discussion.
c. Problem Analysis: Students analyze the problem by discussing what they know and what they need to learn more.
d. Information Gathering: Students seek information from various sources (books, articles, internet) to understand the problem better.
e. Solution Development: Based on the information gathered, students develop a solution or approach to solving the problem.
f. Solution Presentation and Discussion: Each group presents their solution to the class, followed by a discussion for feedback.
g. Reflection: Learners reflect on their learning process, evaluating what they have learned and how they collaborated.
h. Assessment: Assessment is carried out both on the final result (solution) and the learning process (collaboration, critical thinking).

Based on the results of interviews and observations, in implementing the Problem Based Learning learning strategy at State Vocational High School 1 Ponorogo we also adhere to the principles below:

The teacher presents or conveys the problems to be discussed according to the problems that students often encounter in their daily lives, so that it is easier for them to analyze. This strategy was created in groups to train them to collaborate. Students are actively involved in this process which is expected to shape them into individuals who have critical reasoning in dealing with problems in their lives. This is in line with the following theory regarding the principles of Problem Based Learning:

a. The problems presented by the teacher are authentic/real, clear, appropriate to student development, in accordance with learning objectives, and there are benefits for students. The problems presented in PBL are real problems faced by humans in everyday life. Apart from that, the problems presented must also be in accordance with the development of students, and there are benefits obtained by students, both benefits in terms of knowledge, as well as skills and attitudes.
b. Actively involving students In PBL learning, students are actively involved in formulating alternative solutions to problem solving, building new knowledge, and taking real action in solving problems.
c. Developing students' critical reasoning and analytical power. Through PBL, students are invited to look for as many references and literacy as possible to solve their problems. By being literate, students can develop Higher Order Thinking Skills (HOTS) through critical reasoning and the ability to analyze problems in order to get good problem solving results.
d. Educator as facilitator The role of the educator in PBL is as a facilitator. He provides a problem, stimulus, directions, and assistance to students in solving problems. Apart from that, teachers should also help provide easy access for students to explore various references in solving problems, for example by providing several reference sources and providing internet access to facilitate students in enriching their literacy.
e. Building collaboration PBL strategies can be given individually or in groups. However, in the learning process, this strategy should be carried out in group collaboration, so that it can foster mutual respect and produce broader thinking.

The Impact of Implementing the Problem Based Learning Strategy on Islamic Religious Education Learning at State Vocational High School 1 Ponorogo in Improving Students' Higher Order Thinking Skills

Problem-based learning is a learning model designed to improve students' learning performance based on problem solving (Malmia et al., 2019). This model is based on the idea that problems can be used as a starting point for integrating or gaining new knowledge. There are several positive impacts found by researchers at Ponorogo State Vocational High School 1 as follows:

Based on the results of interviews and related observations regarding the impact of implementing the Problem Based Learning strategy on Islamic Religious Education Learning at State Vocational High School 1 Ponorogo, it has a positive impact on students' high-level thinking abilities. This is proven by good development in terms of cognitive, affective and psychomotor. Their ability increases in solving problems in everyday life. And be able to choose the best solution related to the problem they are facing. Critical thinking skills also improve when they analyze problems and choose solutions. They are used to working together and being active in group assignments given by the teacher. Their high-level thinking abilities (HOTS) are better than before, they are more critical and creative in utilizing digital media to search for information in the context of current developments. Even so, they still adhere to the values of Islamic Religious Education.

The data above is in line with the following theory regarding the impact of Problem Based Learning learning strategies: Problem-Based Learning (PBL) strategies have a significant impact on Islamic Religious Education (PAI) learning, both on the cognitive, affective and psychomotor aspects of students. Here are some of the main impacts:

a. Improving Contextual Understanding: PBL encourages students to understand PAI material in real life contexts, such as the application of Islamic values in overcoming social, cultural or environmental problems. This makes learning more relevant and interesting, because students learn through solving real problems.
b. Practice Critical and Creative Thinking Skills: PBL involves analyzing problems, extracting information, and developing solutions. In PAI, this helps students understand contemporary issues such as Islamic business ethics, religious moderation, or the role of Islam in maintaining world peace.
c. Improves Collaboration and Communication: Problem-based learning is often done in groups, which trains collaboration and communication skills. In the PAI context, students can learn how Islamic values such as shura (deliberation) are applied in teamwork.
d. Building a Positive Attitude towards Religious Learning: By relating problems to real life, PBL increases students' interest in PAI subjects. Students are more active and motivated because they feel that religious studies are not just theory, but have practical relevance.
e. Improving 21st Century Competencies: PBL is in line with the development of 21st century competencies, such as higher order thinking skills (HOTS), digital literacy, and the ability to solve complex problems. In PAI, students can be trained to face global challenges while still upholding Islamic values.

4. CONCLUSION

The implementation of the Problem Based Learning learning strategy carried out at State Vocational School 1 Ponorogo is: first, the teacher explains the learning objectives to be achieved and directs students to the problems to be solved. Second, the teacher divides the groups. Third, the teacher guides students in group activities in data collection and analysis. Fourth, participants are asked to present and present the results of the group discussion. Fifth, the teacher evaluates and reflects on the results of the discussion. The impact of implementing the Problem Based Learning strategy on Islamic Religious Education Learning at State Vocational High School 1 Ponorogo has a positive impact on students' high-level thinking abilities. This is proven by good development in

terms of cognitive, affective and psychomotor. Their ability increases in solving problems in everyday life. And be able to choose the best solution related to the problem they are facing. Critical thinking skills also improve when they analyze problems and choose solutions. They are used to working together and being active in group assignments given by the teacher. Their high-level thinking abilities (HOTS) are better than before, they are more critical and creative in utilizing digital media to search for information in the context of current developments. Even so, they still adhere to the values of Islamic Religious Education.

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