

Enhancing Higher Order Thinking Skills through Active Learning in Islamic Religious Education at a Vocational High School in Indonesia

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ABSTRACT

This study investigates the implementation of Active Learning strategies to enhance Higher Order Thinking Skills (HOTS) in Islamic Religious Education (PAI) at a vocational high school in Indonesia. The research responds to the challenge of improving students' analytical, evaluative, and creative abilities in a subject often taught through passive methods. A qualitative descriptive approach was used, involving structured interviews, classroom observations, and document analysis. Participants included 12 students, two PAI teachers, and one vice principal at SMKN 3 South Tangerang. Data were analyzed using an interactive model that incorporated reduction, display, and verification processes. The study found that Active Learning strategies—such as problem-based learning, project-based learning, think-pair-share, and role-play—were effectively integrated into PAI instruction. These methods were supported by two key approaches: the administrative mode (lesson planning, classroom management, and HOTS-based assessments) and the internalization mode (reflection, values education, and student-centered expression). As a result, students showed notable improvement in HOTS indicators: analysis (C4) increased from 62% to 78%, evaluation (C5) from 58% to 74%, and creation (C6) from 55% to 71%. Active Learning in PAI not only improved cognitive outcomes but also fostered reflective and ethical engagement with Islamic teachings. The findings suggest that structured yet flexible pedagogical models can make religious education more participatory, contextual, and relevant to real-world challenges, particularly in vocational school settings.

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1. INTRODUCTION

Islamic Religious Education (PAI) is a crucial foundation in cultivating students' religious values, ethical integrity, and critical thinking skills to face contemporary challenges (Safaruddin, 2020). In the context of the Industrial Revolution 4.0, rapid technological advancement requires students to acquire 21st-century competencies, particularly Higher Order Thinking Skills (HOTS) which include analysis,

evaluation, and creation as classified in Bloom's taxonomy. These skills are not only vital for intellectual comprehension of Islamic teachings but also for their contextual application in social, ethical, and spiritual life (Anita et al., 2022). However, many studies indicate that Islamic Religious Education, especially in vocational schools, still relies heavily on traditional methods such as lectures and rote memorization (Yusup & Basri, 2024). Such methods restrict students' opportunities to engage, discuss, and develop critical reasoning, often resulting in passivity and difficulty in applying knowledge to real-life decisions based on Islamic values (Sun'iyah, 2022). Research further supports that monotonous approaches may hinder the development of critical reasoning and value awareness (Suprpto et al., 2024).

This situation raises an important issue: how can Islamic Religious Education in vocational schools foster HOTS effectively? While curriculum reforms encourage student-centered approaches, the challenge lies in implementing methodologies that engage students cognitively, emotionally, and socially within the vocational school context (Aryani et al., 2024). Active Learning offers a potential solution by prioritizing students' roles in the learning process, using strategies such as problem-based learning, project-based learning, think-pair-share, role-play, and contextual simulations (Jannah, 2021). Prior studies also demonstrate that cooperative, discovery, and contextual learning models can improve learning engagement and HOTS achievement (Astuti et al., 2024). Furthermore, value-based learning and reflective practices have been shown to strengthen critical thinking in ethical decision-making (Huang et al., 2024).

At the international level, research on Active Learning and HOTS is largely concentrated in science and humanities education (Prince, 2004; ILO, 2021). Meanwhile, studies focusing on Islamic Religious Education (PAI), particularly in vocational schools, remain limited. This is a significant research gap given the unique characteristics of vocational education, which emphasizes practical skills and industry relevance while still requiring strong religious and ethical grounding (Ir Sintha Wahjusaputri et al., 2023).

SMKN 3 Banten, South Tangerang, provides a relevant case study. The school has improved PAI learning outcomes, from below to above the Minimum Completion Criteria (KKM > 75), through curriculum reforms, teacher training, and the integration of student-centered approaches. As an A-accredited Center of Excellence School, it offers a conducive environment for implementing Active Learning in PAI. Therefore, this study aims to: (1) investigate the application of Active Learning in PAI at SMKN 3 South Tangerang, (2) assess its effect on enhancing students' HOTS, and (3) identify factors influencing its effectiveness.

2. METHODS

2.1 Design

This study employed a qualitative methodology within an interpretive framework. The interpretive paradigm assumes that social reality is complex and subjective; therefore, researchers must understand phenomena from participants' perspectives (John W Creswell, 2018). The Active Learning model was positioned as a strategy to address the deficiency of Higher Order Thinking Skills (HOTS) in Islamic Religious Education (PAI), facilitating the development of students' critical, evaluative, and creative thinking.

2.2 Participants

The study was conducted at SMKN 3 South Tangerang, Banten Province, from December 2024 to June 2025. This school was purposively selected because it is a model school designated by the Ministry of Education and a Center of Excellence with experienced teachers trained in innovative pedagogy. Participants included 12 students from grades X and XI in the Graphic Design and Animation program, selected purposively to represent both male and female learners and to ensure exposure to the

application of Active Learning in PAI. Supporting informants consisted of the vice principal for curriculum and two PAI teachers, chosen because of their direct involvement in the implementation of Active Learning. This purposive sampling was justified to ensure that only participants with relevant experience in the research focus were included.

2.3 Instruments

Three instruments were employed: (1) structured interviews with students, teachers, and administrators; (2) non-participatory classroom observations, where the researcher observed Active Learning without interfering in the process (John W Creswell, 2018); and (3) documentation, such as lesson plans (RPP), assessment rubrics, and student work.

2.4 Procedures

The research procedure consisted of several stages: (1) preparation (determining focus, selecting participants, designing instruments, and obtaining research permits), (2) data collection (interviews, observations, and documentation), and (3) reporting. Observations focused on teacher strategies, student engagement, and evidence of HOTS development. Interviews explored perceptions of Active Learning, while documentation provided supporting evidence. Triangulation was carried out by cross-checking findings from interviews, observations, and documents to validate consistency.

2.5 Data Analysis

Data were analyzed using the interactive analysis model (John W Creswell, 2018), consisting of three steps: data reduction (selecting and simplifying relevant information), data display (organizing findings into narrative descriptions, tables, and charts), and conclusion drawing/verification (developing interpretations and confirming them through triangulation). This cyclical process ensured continuous refinement of themes throughout data collection and analysis (Endahati & Triastuti, 2024; Sugiyono, 2019).

2.6 Validity

The trustworthiness of the data was established through several strategies. Credibility was ensured by prolonged engagement, careful observation, and triangulation across sources, methods, and theories (Safarudin et al., 2023). Transferability was maintained by providing thick descriptions of the research context. Dependability was secured through systematic documentation of all procedures (Arikunto, 2015). Confirmability was established by linking findings directly to data, minimizing researcher bias (Murjani, 2022).

2.7 Ethical Approval

Ethical considerations were observed throughout the research. Prior to data collection, formal permission was obtained from the school administration. Participants, including teachers and students, provided informed consent and were assured of anonymity and confidentiality. The study adhered to ethical standards of educational research, ensuring that participation was voluntary and that data would be used solely for academic purposes.

3. FINDINGS AND DISCUSSION

3.1 Implementation of Active Learning in Islamic Religious Education Learning at SMKN 3 South Tangerang

The results of the study indicate that the implementation of the Active Learning method in Islamic Religious Education (PAI) learning at SMKN 3 Tangerang Selatan has been carried out in a planned,

gradual manner, and is oriented towards strengthening higher-order thinking skills (HOTS). PAI teachers apply student-centered learning through various models, such as problem-based learning, project-based learning, group discussions, case studies, role plays, and religious simulations. Learning planning refers to learning outcomes, HOTS indicators (C4–C6), and student characteristics. The Learning Implementation Plan (RPP) is prepared by integrating collaborative, exploratory, and reflective elements.

Learning is implemented through contextual problems, discussions, presentations, and the creation of products or solutions based on Islamic values. Evaluation is conducted through observation of attitudes, project assignments, presentations, and HOTS-based tests, while reflection is directed at strengthening the internalization of values. The implementation of Active Learning is also supported by a school culture that combines administrative approaches (preparing learning documents, schedules, supervision) and self-internalization (habituating critical thinking, value reflection, and dialogic communication), so that learning is both cognitive and transformative.

This is based on the teacher's statement which emphasized that "*the Active Learning model makes it easier for students to better understand Islamic teachings in an applicable and critical manner.*" This quote indicates that the use of Active Learning is not only oriented towards delivering material, but also encourages students to internalize the values of Islamic teachings through active, reflective and contextual learning experiences.

Table 1. The Process of Implementing Active Learning in Islamic Religious Education Learning at SMKN 3 South Tangerang

Stages	Teacher Activity	Student Activity	Learning Objectives
Planning	Developing HOTS-based lesson plans, selecting active methods	Preparing discussion materials and initial assignments	Preparing contextual and reflective learning
Implementation	Providing cases, facilitating discussions, guiding projects	Group discussions, presentations, and problem-solving	Developing analytical and evaluation skills
Evaluation	Providing HOTS questions, assessing students' attitudes and products	Answering C4–C5 questions; creating reports/projects	Assessing higher-order thinking skills
Reflection	Providing feedback and reinforcing values	Conveying experiences and perceived learning	Reinforcing the meaning and internalization of religious values

As shown in Table 1, teachers integrate HOTS indicators into each learning stage, ensuring that classroom activities encourage students to go beyond their ability to remember and understand. There are five main aspects of implementing the Active Learning method in Islamic Religious Education (PAI) learning are identified as follows:

1. Teacher Implementation of Active Learning Methods

PAI teachers consistently implemented various Active Learning strategies according to the topic and class needs, such as group discussions, problem-based learning, role-play, and project-based learning. This approach demonstrates a paradigm shift from teacher-centered to student-centered learning, creating a more dynamic and interactive learning environment.

2. Active Student Involvement in the Learning Process

Students were actively engaged both cognitively and socially. They demonstrated enthusiasm in discussions, courage to ask questions, and the ability to express their opinions. This indicates

the success of Active Learning in increasing student motivation and confidence in Islamic Religious Education (PAI) material that was previously considered abstract.

3. Strengthening Critical Thinking Skills

Teachers utilized open-ended questions and contextual problems to stimulate critical thinking skills. For example, students were invited to analyze moral dilemmas related to Islamic values in the digital age. This activity honed analysis and evaluation skills (C4 and C5 of Bloom's Taxonomy) and emphasized the relevance of the material to real life.

4. Social Interaction and Collaboration Between Students

The learning process is designed to encourage collaboration through pair discussions, group work, and joint projects. The teacher acts as a facilitator, enabling students to learn from each other's perspectives and experiences. This approach fosters social skills such as empathy, communication, and cooperation.

5. Exploration and Reflection as Part of HOTS

Students are given space to explore Islamic values independently or in groups, followed by reflection activities through learning journals, presentations, or value discussions. These activities strengthen students' affective and metacognitive aspects, while supporting the comprehensive development of HOTS.

3.2 Students' Engagement in Learning Islamic Religious Education at SMKN 3 South Tangerang

Students were actively engaged in discussions, projects, and reflections. They showed greater motivation and confidence compared to conventional lecture-based learning.

This is reflected in students' statements which reveal that they feel more involved in the learning process. Students stated, "*they are more enthusiastic, are not afraid of making mistakes, and feel that PAI learning is 'alive' and relevant to their real lives.*" This quote shows that student activity has not only increased in terms of participation, but also in the affective aspect, namely a sense of self-confidence, courage to express opinions, and awareness that religious learning is closely related to the reality of everyday life.

Observations also showed that students collaborated effectively, asked critical questions, and participated in value-based reflections, which indicates meaningful engagement with PAI content.

Overall, the implementation of Active Learning methods in Islamic Religious Education (PAI) at SMKN 3 South Tangerang has created a participatory, reflective, and contextual learning environment. Students not only understand the material textually but also process it through analysis, evaluation, and creativity. These results demonstrate the significant contribution of Active Learning to improving students' HOTS (Higher Self-Skills), supported by thorough lesson planning, a variety of methods, and the role of teachers as facilitators of collaboration and value reflection.

This implementation is reinforced through two approaches to school culture: an administrative mode, manifested in lesson planning and supervision, and a self-internalization mode, which instills habits of reflective thinking and acting based on Islamic values. These two approaches create a fun, meaningful, and transformative learning environment for students. The following are two modes of implementing Active Learning at SMKN 3 South Tangerang:

1. Administrative Mode in Improving HOTS through Active Learning

Administrative mode is a learning management approach carried out systematically and structured by teachers and schools, as part of the planning and management of the learning process. In the context of Active Learning for HOTS improvement, administrative mode includes:

a. HOTS-oriented learning planning

a) Teachers develop a Learning Implementation Plan (RPP) that includes HOTS-based objectives, methods, and assessments (levels C4–C6).

b) The selection of learning strategies, such as problem-based learning, project-based learning, and reflective discussions, is based on an analysis of the teaching materials and the characteristics of vocational school students.

- b. Class and Time Management
 - a) Teachers establish classroom rules that allow for effective discussion, collaboration, and reflection.
 - b) Learning time is structured to provide space for active and exploratory activities, not just lectures or memorization.
- c. Integrated Supervision and Evaluation
 - a) The principal or curriculum representative supervises the implementation of Active Learning and evaluates whether the learning strategies align with HOTS principles.
 - b) Learning assessments utilize not only multiple-choice questions but also project assignments, presentations, case studies, and value reflections.

Through this administrative model, students are given a systematic space to actively engage and think critically, as the entire learning system is designed to encourage HOTS.

2. Self-Internalization Mode in Improving HOTS through Active Learning

The internalization mode uses an approach that emphasizes habituation, instilling values, and consciously engaging students' inner selves in the learning process. In Active Learning, this approach encourages students to interpret, experience, and reflect on what they learn so that it becomes not only cognitive knowledge but also shapes thought patterns and attitudes.

- a. Reflection of Values and Meaning
 - a) Students are invited to analyze verses or hadith and then relate them to real-life situations, for example: "What is the meaning of honesty in the era of social media?"
 - b) Reflection is carried out by teachers through references to various journals, value discussions, or discussion forums.
- b. Liberty to Express Ideas
 - a) Students are given space to express their opinions, discuss, and debate, similar to quizzes, which train logic, evaluation, and argumentation.
 - b) Example: a thematic debate on "Islam and Interfaith Tolerance" that leads to active participation in religious competitions such as Islamic Religious Education (PAI) performances or religious skills competitions.
 - c) Creating innovative animated videos like *Sari and Mulya*, which have been widely viewed by all groups, especially children, on YouTube. They encourage and educate students about Islamic and Pancasila values, such as tolerance and religiousness.
- c. Experience-Based Religious Projects
 - a) Students are asked to create zakat campaigns, digital da'wah content, or ethical decision simulations in everyday life. Animated videos by students of SMKN 3 Tangerang Selatan have attracted the attention of all groups and have been endorsed by private companies and Indonesian television to appear on television channels. For example, the animated video of *Sari and Mulya* has had a positive impact on education regarding Islamic values and local wisdom based on the diversity of diversity. The impact is felt through the YouTube channel which contains animated videos about education and calls to do good. Making students skilled and innovative in analyzing, evaluating and creating output products that are beneficial to the wider community and have an impact on the entertainment market.
 - b) This helps them not only understand religious law but also internalize its values and apply them in a social context. Thus, Active Learning in Islamic Religious Education (PAI) learning not only successfully increases student participation and engagement but also has a significant impact on character development and higher-order thinking skills. This approach has proven relevant and effective in supporting the achievement of holistic and contextual Islamic religious education goals in vocational high schools

(SMK). In implementing Active Learning in Islamic Religious Education (PAI) learning, there are continuous steps taken by Islamic Religious Education teachers to improve students' HOTS as follows:

3.3 Indicator HOTS (C4–C6) in Islamic Religious Education Learning at SMKN 3 South Tangerang

Findings demonstrate that students improved in analysis (C4), evaluation (C5), and creation (C6) through various activities:

1. C4 (Analysis): Students analyzed case studies of ethical dilemmas in social media.
2. C5 (Evaluation): Students evaluated different viewpoints in debates on "Islam and Tolerance."
3. C6 (Creation): Students created digital campaigns, animated videos, and zakat awareness projects.

This was confirmed through a statement from one of the students who said, "we are often asked to analyze real cases from an Islamic perspective, then evaluate existing solutions, and even make new ideas to suit religious values." The quote shows that the Active Learning-based learning process is able to push students beyond just basic understanding, towards the critical, reflective, and creative thinking skills that are at the core of HOTS skills.

Table 1. The results of the analysis of the steps for implementing Islamic Religious Education learning with various methods used by teachers to increase students' HOTS

Method Type	HOTS Indicator	Benefits	Description	Examples of Material in Islamic Religious Education
Project-Based Learning (PjBL)	C4-C6	Combines analysis, creativity, evaluation, and collaborative work across the HOTS spectrum.	Students work on short- or long-term projects to solve real-life problems relevant to the lesson.	Students create a digital campaign about the importance of maintaining oral hygiene in accordance with Islamic teachings, which is presented to the school.
Problem-Based Learning (PBL)	C4-C5	Develops critical thinking, logical argumentation, and problem-solving skills.	Students are given real-life or hypothetical problems and then seek solutions based on knowledge and group discussion.	Problem: "How do we address differences in schools of thought in social life?" Students explore sources, discuss, and develop argumentative solutions.

As shown in Table 2, different strategies contributed uniquely to each HOTS level. The results indicate that the Active Learning technique in Islamic Religious Education (PAI) effectively enhances students' Higher Order Thinking Skills (HOTS) by fostering a participatory, reflective, and contextual classroom environment. The educator serves as a facilitator, promoting students' investigation, evaluation, and ideation grounded in Islamic principles.

1. The impact of Active Learning in Assessment increases student HOTS

Assessment of Islamic Religious Education (PAI) learning is conducted to determine the success of the Islamic Religious Education (PAI) learning process through Active Learning methods in improving Higher Order Thinking Skills (HOTS) in the independent curriculum. Student learning outcomes are paramount in evaluating student learning outcomes throughout the learning process. Assessment of learning outcomes allows us to determine the extent to which students have mastered the competencies or learning outcomes in each subject.

2. Implications of using HOTS in learning Islamic Religious Education

Islamic religious instruction in every classroom meeting utilizes a Student-Centered Learning (SCL) approach, which focuses on students actively participating in the learning process, preferably in the classroom.

3.4 Challenges and Supports in Islamic Religious Education Learning at SMKN 3 South Tangerang

Despite the positive outcomes, several challenges were noted:

1. Time management: Teachers reported difficulty covering the entire syllabus while applying project-based learning.
2. Student readiness: Some students initially struggled with expressing opinions.

The Deputy Principal for Academic Affairs emphasized that the successful implementation of active learning does not only depend on teacher creativity, but also the support of the school environment and student readiness. He said, "*the biggest challenge lies in the habits of students who are still accustomed to passive lecture methods, while support comes from school policies that encourage teachers to be more innovative in designing learning.*" This statement shows that although there are obstacles in the form of initial resistance from students, the existence of structural support from the school is an important factor that strengthens the sustainability of the active learning model in PAI.

The curriculum at SMKN 3 South Tangerang reinforces the emphasis on active learning and HOTS through robust curriculum and administrative support. The learning management system is reused to host asynchronous discussion forums, allowing students to expand critical debates outside of class. Teachers collaboratively develop performance-based assessments such as project portfolios and case study analyses that go beyond rote tests, aligning evaluations with the school's HOTS goals.

1. Impact of Active Learning on Student Learning Outcomes

Based on this reference, each school naturally has different assessment standards for each student after taking a series of school exams. Based on these results, SMKN 3 South Tangerang explained that in 2012, the method still implemented was a competency-based curriculum, with methods relatively tailored to the expertise of the teachers. Because the majority of these teachers were nearing retirement, the methods applied tended to be conventional and not yet integrated with technology, meaning they still used the lecture method.

2. Impact of Learning Outcomes After Active Learning Implementation

The implementation of Active Learning has a significant impact on improving student learning outcomes. By actively involving students in the learning process, such as through group discussions, problem-solving, simulations, or reflection, students gain a deeper understanding of the material. These activities encourage them to think critically, relate knowledge to real-world contexts, and develop analytical and synthesis skills.

3. The Relationship between Active Learning and HOTS in Intracurricular Islamic Religious Education Learning

Active Learning, with each Islamic Religious Education subject, creates a participatory, reflective, and cognitively challenging atmosphere. Activities such as discussions, problem solving, value simulations, and grouping of Islamic concepts are effective in training students to think analytically, critically, and creatively.

Thus, Active Learning in Islamic Religious Education (PAI) at SMKN 3 South Tangerang not only improves religious understanding but also instills tolerance, social awareness, reflective thinking, and creativity in addressing various issues. This model is highly relevant for developing a generation of Muslims who think critically, have noble morals, and are ready to face the challenges of the times, with Islamic values as their primary foundation.

Discussion

The findings show that Active Learning was implemented through strategies such as problem-based learning, project-based learning, think-pair-share, and role-play, supported by two approaches: (a) administrative mode (RPP organization, classroom management, HOTS-based assessment) and (b) self-internalization mode (reflective thinking, value instillation). This aligns with Silberman's (Cahyati Khasani & Ahmad Ma'ruf, 2020) argument that active learning is most effective when students "learn by doing," not merely absorbing information passively. Similarly, Roberts et al., (2024) emphasized that active learning requires institutional and teacher-level strategies, which was evident in SMKN 3's curriculum reforms and teacher training.

Results indicate measurable improvement in students' analysis (C4), evaluation (C5), and creation (C6) skills, assessed through projects and discussions. This supports Anderson and Krathwohl's taxonomy (Wiralodra, n.d.) and is consistent with Rahmanto & Ramadhan, (2024). Who found that HOTS-based learning enhances critical problem-solving. Internationally, Venkatraman et al., (2002) highlighted the role of cooperative learning in stimulating creativity and evaluation skills. The findings from SMKN 3 reinforce these results, particularly within the Islamic Religious Education context, where critical engagement with values is essential.

Key factors include teacher competence, administrative support, and curriculum alignment. Teachers collaboratively designed performance-based assessments (portfolios, case studies) that go beyond rote tests, echoing international trends (Prince, 2004; ILO, 2021). However, challenges remain, particularly with veteran teachers accustomed to lecture-based methods (Sun'iyah, 2022). The gradual transition from conventional approaches to technology-integrated, student-centered methods mirrors findings by Suprpto et al., (2024) regarding the difficulty of shifting entrenched practices.

This study was conducted in a single school (SMKN 3 South Tangerang) with a small purposive sample (15 participants), limiting generalizability. Furthermore, reliance on qualitative methods may constrain the breadth of data compared to mixed-method approaches.

Practically, the results suggest that Active Learning in PAI can enhance HOTS if supported by strong institutional backing and teacher training. Policy-wise, this highlights the need for systematic professional development for PAI teachers in vocational schools to integrate HOTS-oriented pedagogy.

Theoretically, this study enriches Islamic pedagogy by demonstrating that Active Learning can bridge religious instruction with 21st-century competencies. It supports the notion that PAI is not merely doctrinal but also a medium to foster analytical, reflective, and ethical decision-making capacities (Aryani et al., 2024). By situating HOTS pedagogy in a vocational Islamic context, this study expands existing discourse, offering a model of faith-based yet critical education relevant to contemporary challenges.

4. CONCLUSION

This study examined the extent to which the implementation of the Active Learning method in Islamic Religious Education (PAI) strengthens students' Higher Order Thinking Skills (HOTS) at SMKN 3 South Tangerang. The findings indicate that Active Learning, implemented through HOTS-oriented lesson planning, effective classroom management, and dialogic reflection, successfully enhanced students' higher-level cognitive abilities, particularly in analyzing, evaluating, and creating. This improvement was reflected not only in students' ability to construct logical arguments but also in their production of creative outputs, such as digital animations that integrate religious values, demonstrating that Active Learning can effectively connect conceptual understanding with practical application while fostering the internalization of Islamic values. However, this study is limited by its focus on a single school context and by its reliance on qualitative observations, which may limit the broader generalizability of the findings. Therefore, future research is recommended to explore the implementation of HOTS-oriented Active Learning in different educational settings, such as pesantren

or other vocational schools, and to incorporate quantitative approaches or mixed-method designs to strengthen empirical validation and expand the scope of evidence.

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