

Improving Student Learning Outcomes Through The Problem-Based Learning (Pbl) Model Using Learning Video Media

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Received: 01-07-2026

Revised: 10-08-2026

Accepted: 23-09-2026

KEYWORDS

Problem-Based Learning;
Video Learning Media;
Learning Outcomes;
Fastabikul Khoirot;
Quasi-Experiment .

ABSTRACT

21st-century education necessitates the cultivation of higher-order thinking skills, including critical thinking, problem-solving, and creativity, which are essential for students to navigate dynamic social challenges. However, conventional learning practices often fall short, resulting in passive students and underdeveloped analytical abilities. This research addresses this gap by investigating the effectiveness of integrating the Problem-Based Learning model with video learning media to enhance student learning outcomes in *Fastabikul Khoirot* material. The study adopted a quantitative approach using a quasi-experimental design with a nonequivalent control group. The experimental group, comprising 48 Class X students from SMAN 1 Plered, engaged with the PBL model assisted by video media, while the control group, consisting of 45 Class X students from SMKN 1 Plered, followed a Discovery Learning model. Data were collected through pretests and posttests measuring learning outcomes and analyzed using N-Gain scores, descriptive statistics, and independent t-tests after confirming normality and homogeneity. The results revealed a statistically significant improvement in learning outcomes for the experimental group. The experimental group achieved a higher average N-Gain score of 56.7, compared to the control group's average N-Gain score of 45. Furthermore, the experimental group demonstrated a learning completeness of 84%, notably higher than the control group's 72%. These findings align with constructivist theories, indicating that active, problem-driven engagement fostered deeper understanding and problem-solving skills. The strategic incorporation of video learning media, grounded in cognitive load and multimedia learning theories, significantly enhanced student attention, motivation, and cognitive elaboration, providing a more engaging and effective learning experience. The study concludes that the PBL model integrated with video learning media is significantly more effective in improving student learning outcomes in *Fastabikul Khoirot*. It is recommended that educators consider this integrated approach to foster more engaging and effective student-centered learning environments. Future research could explore long-term impacts and effectiveness across diverse contexts.

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Introduction

21st-century learning demands the development of higher-order thinking skills, especially critical thinking, problem-solving, creativity, and innovation (Kardoyo et al., 2020; Mustakim et al., 2024). These skills are essential foundations for students to adapt to social dynamics and real-life challenges (Anazifa & Djukri, 2017; Saraswati et al., 2018). In this context, communication and collaboration are positioned as strategic means to foster reflective and solution-oriented thinking and action, not merely as ultimate learning goals (Keiler, 2018; Suwastini et al., 2021).

These demands require the learning process to be designed actively and student-centered (Turcan & Bugaian, 2016; Yew & Goh, 2016). Teachers no longer act as the primary source of information but as facilitators who guide the learning process (Graaff et al., 2013; Rico & Ertmer, 2015). Learning assessments also need to be structured to measure students' analytical and reasoning abilities through problem-based questions, such as case studies and contextual problems (Goodwin, 2024; Miller et al., 2020). Thus, learning emphasizes not only content mastery but also the development of students' thinking styles.

However, the reality of learning in schools shows a gap between ideal demands and practical implementation (Azizah et al., 2025; Zannah & Setiawan, 2022). Students still tend to be passive and dependent on teacher explanations, while discussion and problem-solving activities are not running optimally (Novianti, 2020; Silalahi, 2018). As a result, learning remains teacher-oriented and provides little room for students to develop critical thinking skills and learning independence.

Learning conditions that do not involve student activeness directly impact the low analytical ability in understanding and solving problems (Palennari et al., 2021). Students experience difficulty interpreting the meaning of questions and determining problem-solving strategies independently (Alvionita et al., 2020). Yet, the 2013 Curriculum places analytical ability as a key competency that students must possess (Anazifa & Djukri, 2017). Therefore, learning innovation is needed that can bridge curriculum requirements with real conditions in the classroom.

Problem Based Learning is one learning model relevant to address these issues (Anjarwati et al., 2018; Spliid et al., 2013). PBL places contextual problems as the starting point for learning, thereby encouraging students to think critically, discuss, and seek solutions collaboratively (Hung, 2019). Through this model, students not only gain knowledge but also meaningful learning experiences oriented towards the development of higher-order thinking skills (Allchin, 2013).

For PBL implementation to be effective, support from learning media that can attract attention and facilitate student understanding is necessary (Nurwahidah et al., 2021). Video learning media has the advantage of presenting information audibly and visually simultaneously, helping students understand abstract concepts (Brame, 2016; Hudain et al., 2023). In addition, video learning can increase learning motivation and create a more interactive and conducive classroom atmosphere (Noetel et al., 2021; Yu-peng & Yu, 2023).

The integration of the Problem Based Learning model with video learning media is seen as a potential learning strategy to increase student engagement and learning outcomes (Anagnostopoulou & Becerro, 2021; Rasi & Poikela, 2016). Video can serve as a problem trigger in PBL, while PBL provides a learning framework that encourages systematic analysis and problem-solving (Hafizah, 2020; Hayati et al., 2022). Therefore, this research focuses on testing the effectiveness of implementing video learning media-assisted PBL on student learning outcomes in the Fastabikul Khoirot material in class X SMAN 1 Plered and SMKN 1 Plered, Purwakarta.

Literature Review

Several studies indicate that Problem-Based Learning is effective in enhancing students' critical thinking skills and learning outcomes. (Palennari et al., 2021) states that at the student development stage within the 2013 Curriculum, the ability to find solutions to problems requires high analytical skills, making PBL a relevant model. In addition, (Nurwahidah et al., 2021) and (Hudain et al., 2023) affirm that video learning media can boost students' motivation and understanding by presenting material in an information-rich audio-visual format.

Although various studies have examined the effectiveness of PBL or the use of video learning media, research specifically integrating both approaches on the Fastabikul Khoirot material remains limited. Furthermore, studies comprehensively measuring learning outcomes across cognitive, affective, and psychomotor domains at SMA and SMK levels in the same context are relatively scarce.

The novelty of this research lies in the implementation of the Problem-Based Learning model assisted by video learning media on the Fastabikul Khoirot material, involving class X students from two different educational institutions: SMA and SMK. This study also comprehensively assesses learning outcomes, not only in the cognitive aspect but also affective and psychomotor domains.

This research aims to determine the effect of applying the problem-based learning model assisted by video learning media on improving student learning outcomes in the Fastabikul Khoirot material for class X students at SMAN 1 Plered and SMKN 1 Plered, Purwakarta.

Method

This research uses a quantitative approach with a quasi-experimental method. The quasi-experimental method is used to determine the effect of a treatment on the dependent variable when researchers cannot fully randomize subjects (Campbell et al., 1963). The quantitative approach was chosen because this research aims to test hypotheses and observe differences in student learning outcomes objectively through numerical measurements (Creswell & Creswell, 2018).

The research design used is a nonequivalent control group design, which is an experimental design involving two groups that are not randomly selected, but are still given pretest and posttest to see the effect of the treatment (Campbell et al., 1963). This design is considered suitable for educational research conducted in existing classes without changing the learning structure in schools (Sugiyono, 2011). In this study, the experimental group was given instruction using the Problem Based Learning model assisted by video learning media, while the control group was given instruction using the Discovery Learning model.

The research was conducted in the odd semester of the 2025/2026 academic year at SMAN 1 Plered and SMKN 1 Plered, Purwakarta Regency. The experimental group was 48 students from class X-1 SMAN 1 Plered and was conducted on August 7, 2025. The control group was 45 students from class X Hospitality SMKN 1 Plered and was conducted on September 3, 2025. The selection of research subjects was carried out using purposive sampling, considering the equivalence of student characteristics, curriculum suitability, and the similarity of learning material taught (Arikunto, 2006).

The variables in this study consist of independent and dependent variables. The independent variable is the Problem Based Learning model assisted by video learning media, while the dependent variable is the learning outcomes of Islamic Religious Education on Fastabikul Khoirot material. Learning outcomes are defined as changes in student behavior after participating in the learning process, which includes the cognitive domain, measured in this study through learning outcome test scores (Sudjana, 2009).

The research procedure began with administering a pretest to both groups to determine students' initial abilities before the treatment was given. Subsequently, the experimental group participated in learning using the Problem Based Learning model assisted by video learning media, while the control group participated in learning using the Discovery Learning model. The learning process in each group was carried out for one meeting with an allocation of 3 x 45 minutes. After the treatment was completed, both groups were given a posttest to determine the improvement in student learning outcomes.

Data collection was carried out using a written learning outcome test based on the competency achievement indicators for Fastabikul Khoirot material. The test was used as a learning outcome measurement tool because it is the most appropriate instrument for objectively and systematically measuring students' cognitive abilities (Arikunto, 2006). The data obtained from the pretest and posttest results were analyzed using descriptive statistics to determine the minimum, maximum, mean, median, mode, and frequency distribution.

To determine the level of improvement in student learning outcomes, N-Gain calculation was performed. N-Gain calculation is used to see the effectiveness of the treatment by comparing scores before and after learning (Hake & Reece, 1999). Before hypothesis testing, the data was first subjected to prerequisite analysis tests, which included normality testing using the Liliefors test and homogeneity of variance testing using the Fisher test. Normality testing aims to determine whether the data distribution comes from a normal population, while homogeneity testing is performed to determine the equality of variances between groups (Sudjana, 2009).

After the data were declared normally distributed and homogeneous, hypothesis testing was carried out using an independent t-test at a significance level of 5 percent. The t-test is used to determine whether there is a significant difference in learning outcomes between the experimental group and the control group (Sugiyono, 2011). The interpretation of the data analysis results was carried out quantitatively to draw conclusions regarding the effect of applying the Problem Based Learning model assisted by video learning media on student learning outcomes in the Fastabikul Khoirot material.

Result

The research was conducted at SMAN 1 Plered on Thursday, August 7, 2025, in class X-1 SMAN 1 Plered using the Problem Based Learning model assisted by Video Learning media, involving 48 students. The control group research was conducted on Tuesday, September 3, 2025, in the Hospitality class of SMKN 1 Plered using the Discovery Learning model, involving 45 students, in the odd semester of the 2025/2026 academic year. The locations were Jl. Raya Sempur Ds. Cibogohilir Plered Purwakarta and Jl. Raya Rawasari Ds. Rawasari Plered Purwakarta, West Java.

The implementation of the Quasi-Experiment research involved two groups: an experimental group and a control group. The experimental group, class X1 SMAN 1 Plered, used the Problem Based Learning model assisted by video learning media with a time allocation of 3 x 45 minutes. Meanwhile, the control group, class X Hospitality SMKN 1 Plered, used the Discovery Learning model with a time allocation of 3 x 45 minutes. The material covered was Fastabikul

Khoirot. The results and discussion section contains the research findings and their interpretation. The findings from the research results must be clearly written and illustrated with adequate data to answer the research hypothesis.

Based on the data obtained before students received treatment by applying the Problem Based Learning model assisted by Video Learning Media, the minimum pre-test score was 20, the maximum score was 77, and the average score was 52.9. Whereas, the data obtained after students received treatment by applying the Problem Based Learning model assisted by Video Learning Media showed a minimum post-test score of 57, a maximum score of 94, and an average score of 80.52.

N-Gain calculation was performed using data obtained before and after students received treatment by applying the Problem Based Learning model assisted by Video Learning Media, resulting in a minimum score of 12 and a maximum score of 87, with an average N-Gain of 57.

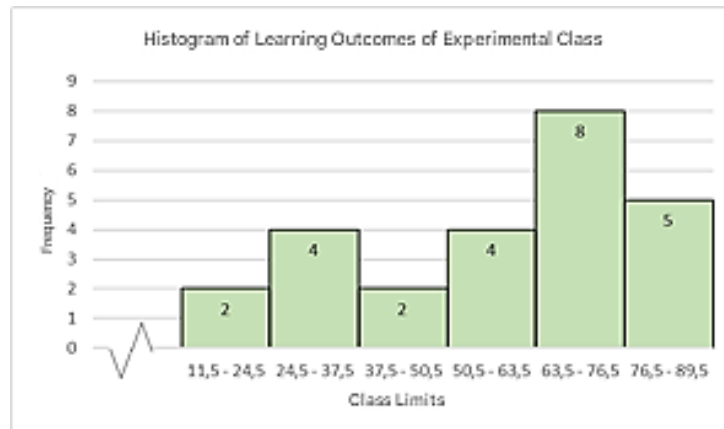
Based on the acquisition of Fastabikul Khoirot learning outcomes using the Problem Based Learning model assisted by Video Learning Media, participated in by 48 students, a frequency distribution table can be constructed with a range of 75, class interval X-1, and class length of 13. The frequency distribution of this data can be seen in the following table and histogram graph.

Table 1. Frequency Distribution of N-Gain Scores for the Experimental Class Group using the Problem Based Learning Model assisted by Video Learning Media

Interval Classes	Limits Classes	(xi)	(fi)	xi.fi	(%)
12-24	11,5 - 24,5	18	2	36	8%
25-37	24,5 - 37,5	31	4	124	16%
38-50	37,5 - 50,5	44	2	88	8%
51-63	50,5 - 63,5	57	4	228	16%
64-76	63,5 - 76,5	70	8	560	32%
77-89	76,5 - 89,5	83	5	415	20%
	Total		25	1451	100%

Based on the frequency distribution table above, the highest absolute frequency is in the 64 to 76 interval with 8 values and a relative frequency of 32%. Meanwhile, the lowest absolute frequency is in the 12 to 24 interval with 2 values and a relative frequency of 8%, and also in the 38 to 50 interval with 2 values and a relative frequency of 8%. The histogram graph of Fastabikul Khoirot learning outcomes using the Problem Based Learning model assisted by Video Learning Media can be seen in the image below.

Figure 1 Histogram of Fastabikul Khoirot Learning Outcomes using the Problem Based Learning model assisted by Video Learning Media



Based on the Histogram of Fastabikul Khoirot Learning Outcomes using the Problem Based Learning model assisted by Video Learning Media in Figure 1, the highest frequency is 8 values in the class boundaries of 63.5 to 76.5. Meanwhile, the lowest frequency is 2 values in the class boundaries of 11.5 to 24.5, and also 2 values in the class boundaries of 37.5 to 50.5. Furthermore, descriptive statistical calculations were performed, yielding an average score of 58, a mode of 71, and a median of 77.

Based on the data obtained before students received treatment by applying the Discovery Learning Model, the minimum pre-test score was 28, the maximum score was 77, and the average score was 51.8. Whereas, the data obtained after students received treatment by applying the Discovery Learning Model showed a minimum post-test score of 50, a maximum score of 88, and an average score of 74.1.

N-Gain calculation was performed using data obtained before and after students received treatment by applying the Discovery Learning Model, resulting in a minimum score of 7 and a maximum score of 82, with an average N-Gain of 45.

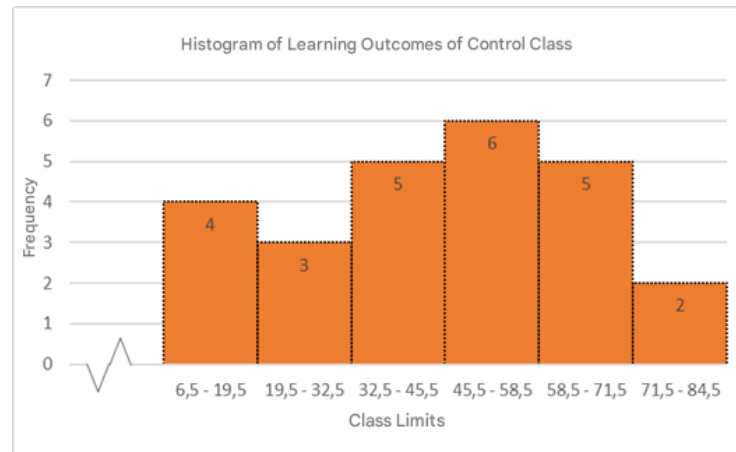
Based on the acquisition of Fastabikul Khoirot learning outcomes by applying the Discovery Learning Model, participated in by 48 students, a frequency distribution table can be constructed with a range of 75, class interval 6, and class length of 13. The frequency distribution of this data can be seen in the following table and histogram graph:

Table 2. Frequency Distribution of N-Gain Scores for the Control Class Group using the Discovery Learning Model

Interval Kelas	Batas Kelas	(xi)	(Fi)	xi.fi	(%)
7-19	6,5 - 19,5	13	4	53	16%
20-32	19,5 - 32,5	26	3	78	12%
33-45	32,5 - 45,5	39	5	196	20%
46-58	45,5 - 58,5	52	6	313	24%
59-71	58,5 - 71,5	65	5	326	20%
72-84	71,5 - 84,5	78	2	156	8%
Jumlah			25	1122	100%

Based on the frequency distribution table above, the highest absolute frequency is in the 46 to 58 interval with 6 values and a relative frequency of 24%. Meanwhile, the lowest absolute frequency is in the 72 to 84 interval with 2 values and a relative frequency of 8%. The histogram graph of Fastabikul Khoirot learning outcomes using the Discovery Learning Model can be seen in the image below.

Figure 2 Histogram of Fastabikul Khoirot material outcomes using the Discovery Learning Model



Based on the Histogram of Fastabikul Khoirot Learning Outcomes using the Discovery Learning Model in Figure 2, the highest frequency is 6 values in the class boundaries of 45.5 to 58.5, while the lowest frequency is 2 values in the class boundaries of 71.5 to 84.5. After that, descriptive statistical calculations were performed, yielding an average score of 45, a mode of 52, and a median of 47.

Based on the average pretest scores, average posttest scores, and average N-Gain scores obtained from the experimental class group applying the Problem Based Learning model assisted by Video Learning Media and the control class group with the Discovery Learning model, it is evident from these data that there is an effect of applying the Problem Based Learning model assisted by Video Learning Media on Fastabikul Khoirot learning outcomes. The effect on learning outcomes can be seen in Table 3.

Table 3. Recap of Learning Outcomes Scores for Experimental and Control Groups

	Rekapitulasi	Class groups	
		<i>Problem Based Learning</i>	<i>Discovery learning</i>
Lowest Score	Pretest	20	28
	Posttest	57	50
	N-Gain	12	7
Highest Score	Pretest	77	77
	Posttest	94	88
	N-Gain	87	82
Average Score	Pretest	52,9	51,8
	Posttest	80,5	74,1
	N-Gain	56,7	45
Completeness of Learning Outcomes		84%	72%

Based on Table 3 above, the average N-Gain score for the Experimental class group applying the Problem Based Learning model assisted by Video Learning Media is 56.7, which is higher than the average N-Gain score for the Control class group applying the Discovery Learning model, which is 45. Thus, it can be seen that the learning completeness in the experimental class group is higher.

Meanwhile, the recap of Fastabikul Khoirot learning outcomes can be seen in the image below:

Figure 3. Histogram of Differences in Fastabikul Khoirot Learning

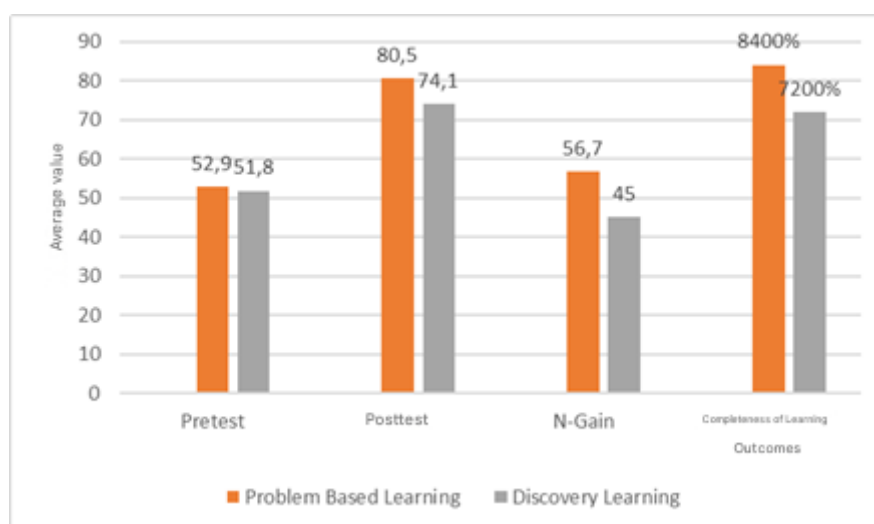


Figure 3. Histogram of Differences in Fastabikul Khoirot Learning Outcomes in Experimental and Control Classes. It can be concluded that the learning completeness of Fastabikul Khoirot material using the Problem Based Learning model assisted by video learning media is better than the learning outcomes of Fastabikul Khoirot material using the conventional model. This indicates that the Problem Based Learning model assisted by video learning media has the highest effectiveness level compared to the conventional model. This is evidenced by the table and histogram above, which show a difference in Fastabikul Khoirot learning outcomes between the experimental class group applying the Problem Based Learning model assisted by video learning media and the control class group applying the conventional model.

Analysis of research data regarding hypothesis testing was performed using the t-test technique. However, before conducting data analysis, preliminary hypothesis prerequisite tests were conducted, namely normality testing using the Liliefors test and homogeneity of variance testing using the Fisher test.

Normality testing was performed to determine whether the data distribution used originated from a normal population or not. Normality testing was carried out on both data groups, consisting of class X-1 SMAN 1 Plered as the experimental class group and class X-Hospitality SMKN 1 Plered as the control class group. Normality testing was performed using the Liliefors Test with the following conditions: H_0 : $L_{hitung} > L_{tabel}$, meaning the sample comes from a non-normal population; H_a : $L_{hitung} < L_{tabel}$, meaning the sample comes from a normal population. The results of the normality test calculated using the Liliefors test in the treatment class applying the Problem Based Learning model assisted by video learning media showed an L-count of 0.090 from 48 students. Then, the obtained L-count data was compared with the L-table based on a significance level $\alpha = 5\%$, yielding an L-table of 0.173. Therefore, it can be concluded that the data used in the experimental class group applying the Problem Based Learning model assisted by video learning media can be declared normally distributed.

Next, a parametric test was conducted to test the differences in learning outcomes between the experimental and control groups. The analysis results indicate that the application of the Problem Based Learning model assisted by video learning media positively and significantly improved student learning outcomes in the Fastabikul Khoirot material. The average score of the experimental group was higher than the control group, and this difference was statistically significant. Thus, it can be concluded that the problem-based learning model with video learning media has an effect on improving student learning outcomes

Discussion

The research findings clearly demonstrate a significant difference in learning outcomes between the experimental group, which implemented the Problem-Based Learning model assisted by video learning media, and the control group, which utilized the Discovery Learning model. The experimental group achieved a higher average N-Gain score of 56.7, compared to the control group's average N-Gain score of 45. This statistically significant difference, where the null hypothesis (H_0) was rejected and the alternative hypothesis was accepted, strongly indicates that the implementation of the PBL model assisted by video learning media positively impacts the improvement of *Fastabikul Khoirot* (competing in good deeds) learning outcomes.

Connection of Findings with Educational Theory

This outcome is well-aligned with constructivist learning theory, which posits that learners actively construct their understanding and knowledge through experience and reflection. The Problem-Based Learning model, by its very nature, encourages students to engage with real-world problems as a starting point for learning, thereby facilitating meaningful learning and the development of robust problem-solving skills (Allchin, 2013). The sequential steps of PBL – orienting students to problems, organizing them for study, guiding individual and group inquiry, developing and presenting results, and analyzing and evaluating the problem-solving process – inherently support this constructivist approach. Students in the experimental class were guided to observe video lessons on *Fastabikul Khoirot*, then engage in questioning and discussion with the teacher, forming small groups to work on tasks in LKPD (student worksheets). This process of guided inquiry, collaborative discussion, and presentation of solutions allowed them to actively build their knowledge and understanding of the *Fastabikul Khoirot* material.

Furthermore, the integration of video learning media played a crucial theoretical role. Drawing upon principles of cognitive load theory and multimedia learning theory, video's ability to present information audibly and visually simultaneously effectively reduces cognitive load, allowing for more efficient processing of information (Brame, 2016). This dual-coding approach enhances attention and boosts motivation (Hudain et al., 2023; Nurwahidah et al., 2021). In this study, the video served as a powerful stimulus, capturing student interest and providing a clear, contextual starting point for the *Fastabikul Khoirot* problems. This heightened engagement led to greater cognitive elaboration, where students actively processed and connected new information to their existing knowledge, leading to deeper understanding and retention.

Interpretation of Differences Between Groups

The superior performance of the PBL + video group over the Discovery Learning group can be attributed to several pedagogical advantages. While Discovery Learning is also student-centered, the combination of PBL's problem-driven inquiry with the dynamic visual and auditory input of video media created a more immersive and stimulating learning environment for the *Fastabikul Khoirot* material.

The PBL model, as implemented, mandated active student participation through group discussions, collaborative investigation, and presentation of findings. For instance, students were divided into small groups, directed to discuss *Fastabikul Khoirot*, present their results, and respond to peer feedback. This high level of interaction and peer teaching within the experimental group likely fostered deeper conceptual understanding and critical thinking than the control group's approach, which involved stimulus presentation via PowerPoint, identification of problems, data collection, processing, and analysis.

The engaging nature of video learning media, as observed in this study, significantly contributed to student focus and motivation. As the draft noted, "the use of video learning media can make students more focused and interested in learning, thereby increasing attention, motivation, and memory, as well as improving understanding of concepts in problem-solving and critical thinking skills." This enhanced engagement from the video trigger, combined with the intrinsically motivating challenge of problem-solving in PBL, likely kept students more deeply invested in the *Fastabikul Khoirot* material.

By actively grappling with contextual problems presented through video, students in the experimental group were compelled to analyze, synthesize, and evaluate information related to *Fastabikul Khoirot* more comprehensively. This process cultivated not only content mastery but also superior analytical and problem-solving abilities, which are crucial for higher-order thinking skills. The structured problem-solving phases of PBL, from understanding the problem to evaluating solutions, provided a robust framework for developing these competencies.

The learning completeness further supports this interpretation, with the experimental class achieving 84% completeness compared to 72% in the control class. This indicates that a greater proportion of students in the PBL + video group successfully mastered the *Fastabikul Khoirot* material. The homogeneity test result confirmed that the N-Gain data for *Fastabikul Khoirot* learning outcomes was homogeneous, ensuring the validity of comparing the two groups.

Strengthening with Previous Research

These findings resonate with and extend previous research on both Problem-Based Learning and the utility of video media in education. Studies have consistently highlighted PBL's effectiveness in developing higher-order thinking skills, such as critical thinking, problem-solving, and creativity (Kardoyo et al., 2020; Mustakim et al., 2024). For instance, (Palennari et al., 2021) emphasizes that analytical skills, central to problem-solving within the 2013 Curriculum, are effectively nurtured by PBL. Our study corroborates these findings, demonstrating that PBL's inquiry-based structure is highly effective in enhancing student learning outcomes in the context of *Fastabikul Khoirot*.

Moreover, the positive impact of video learning media on student motivation and understanding is well-documented (Hudain et al., 2023; Noetel et al., 2021; Nurwahidah et al., 2021; Yu-peng & Yu, 2023). Our research reaffirms these benefits, showing how video can make learning more attractive, reduce boredom, and facilitate a deeper comprehension of concepts, particularly when used as a problem trigger within the PBL framework. The ability of video to "increase attention, motivation, and memory" and "improve understanding of concepts in problem-solving and critical thinking skills" (Brame, 2016) was clearly observed in the experimental group's enhanced performance.

While individual studies have explored PBL or video media, the novelty of this research lies in its specific integration of the Problem-Based Learning model assisted by video learning media within the unique context of *Fastabikul Khoirot* material for Class X students across both SMA and

SMK institutions. This study also comprehensively assessed learning outcomes, moving beyond cognitive aspects to potentially encompass affective and psychomotor domains (though the current results focus primarily on cognitive test scores). By demonstrating the synergistic effect of PBL and video in this specific educational context, this research contributes to the growing body of literature advocating for innovative, technology-enhanced pedagogical approaches to improve student learning outcomes and prepare them for 21st-century challenges.

Conclusion

This study examined the impact of Problem-Based Learning assisted by video media on student learning outcomes in Fastabikul Khoirot for Class X students. Results show that PBL with video significantly outperformed Discovery Learning. The experimental group achieved an average N-Gain score of 56.7, compared to 45 for the control group. Learning completeness reached 84% in the experimental class versus 72% in the control class, confirming the integrated approach's superiority.

These findings align with constructivist theories, which emphasize active, problem-driven learning to build understanding and problem-solving skills. Video media, informed by cognitive load and multimedia theories, enhanced attention, motivation, and processing through rich visual and audio elements. The combination promoted deeper conceptual understanding, critical thinking, and collaboration as students tackled contextual Fastabikul Khoirot problems.

This study advances the literature by demonstrating the combined benefits of PBL and video media in Islamic Religious Education, specifically Fastabikul Khoirot, across secondary schools.

Educators should integrate PBL with suitable video media to foster engaging, effective, student-centered environments. Future research could assess long-term effects, test other subjects and grades, and optimize video content and PBL problem design.

References

- Allchin, D. (2013). Problem- and Case-Based Learning in Science: An Introduction to Distinctions, Values, and Outcomes. *CBE—Life Sciences Education*, 12(3), 364. <https://doi.org/10.1187/cbe.12-11-0190>
- Alvionita, D., Prabowo, & Supardi, Z. A. I. (2020). Problem Based Learning With The SETS Method To Improve The Student's Critical Thinking Skill of Senior High School. *IJORER International Journal of Recent Educational Research*, 1(3), 246. <https://doi.org/10.46245/ijorer.v1i3.46>
- Anagnostopoulou, V., & Becerro, V. I. (2021). The role of audiovisual resources in active learning methodologies. *Πανελλήνιο Συνέδριο Επιστημών Εκπαίδευσης*, 1(1), 3. <https://doi.org/10.12681/edusc.3363>
- Anazifa, R. D., & Djukri, D. (2017). Project- Based Learning and Problem-Based Learning: Are They Effective to Improve Student's Thinking Skills? *Jurnal Pendidikan IPA Indonesia*, 6(2), 346. <https://doi.org/10.15294/jpii.v6i2.11100>
- Anjarwati, P. G. P., Sajidan, S., & Prayitno, B. A. (2018). Problem-Based Learning Module of Environmental Changes to Enhance Students' Creative Thinking Skill. *Biosaintifika Journal of Biology & Biology Education*, 10(2), 313. <https://doi.org/10.15294/biosaintifika.v10i2.12598>
- Azizah, L. M., Rusilowati, A., & Subali, B. (2025). Analysis of the Implementation of the Independent Learning Curriculum in Physics Class XI SMAN 13 Semarang. *Physics Communication*, 9(2), 95. <https://doi.org/10.15294/pc.v9i2.9551>
- Brame, C. J. (2016). *Effective Educational Videos: Principles and Guidelines for Maximizing Student*

- Learning from Video Content [Review of Effective Educational Videos: Principles and Guidelines for Maximizing Student Learning from Video Content]. CBE—Life Sciences Education, 15(4). American Society for Cell Biology. <https://doi.org/10.1187/cbe.16-03-0125>
- Goodwin, J. R. (2024). What's the Difference? A Comparison of Student-Centered Teaching Methods. Education Sciences, 14(7), 736. <https://doi.org/10.3390/educsci14070736>
- Graaff, E. de, Mohd-Yusof, K., Arsat, M., Borhan, M. T., Graaff, E. de, Kolmos, A., & Phang, F. A. (2013). From Teaching to Facilitation : Experiences with Faculty Development Training. Research Portal Denmark, 380. <https://local.forskningsportal.dk/local/dki-cgi/ws/cris-link?src=aa&id=aa-8c2e1919-a0a7-4eae-a63a-ac4f6741597f&ti=From%20Teaching%20to%20Facilitation%20%3A%20Experiences%20with%20Faculty%20Development%20Training>
- Hafizah, S. (2020). PENGGUNAAN DAN PENGEMBANGAN VIDEO DALAM PEMBELAJARAN FISIKA. Jurnal Pendidikan Fisika, 8(2), 225. <https://doi.org/10.24127/jpf.v8i2.2656>
- Hayati, R., Fachrurazi, F., Karim, A., & Marzuki, M. (2022). Peningkatan Kemampuan Pemecahan Masalah menggunakan Model Problem Based Learning Berbantuan Video Pembelajaran Di Sekolah Dasar. Jurnal Absis Jurnal Pendidikan Matematika Dan Matematika, 5(1), 621. <https://doi.org/10.30606/absis.v5i1.1558>
- Hudain, Muh. A., Kamaruddin, I., Irvan, I., Juhanis, J., Weraman, P., & Saddhono, K. (2023). Media Pembelajaran Berbasis Video: Apakah berpengaruh terhadap peningkatan motivasi belajar pada Anak? Jurnal Obsesi Jurnal Pendidikan Anak Usia Dini, 7(4), 4881. <https://doi.org/10.31004/obsesi.v7i4.4924>
- Hung, W. (2019). Problem Design in PBL (p. 249). <https://doi.org/10.1002/9781119173243.ch11>
- Kardoyo, K., Nurkhin, A., Muhsin, M., & Pramusinto, H. (2020). Problem-Based Learning Strategy: Its Impact on Students' Critical and Creative Thinking Skills. European Journal of Educational Research, 1141. <https://doi.org/10.12973/eu-jer.9.3.1141>
- Keiler, L. S. (2018). Teachers' roles and identities in student-centered classrooms. International Journal of STEM Education, 5(1). <https://doi.org/10.1186/s40594-018-0131-6>
- Miller, C. L., Manderfeld, M., & Harsma, E. A. (2020). Teaching Strategies: Problem-based Learning and Case-based Learning. Cornerstone (Minnesota State University, Mankato). <https://cornerstone.lib.mnsu.edu/all/121>
- Mustakim, S. S., Sulaiman, T., Lei, X., & Zou, Y. (2024). Promoting High-Order Thinking Skills through Problem-Based Learning: Design and Implementation. International Journal of Academic Research in Progressive Education and Development, 13(3). <https://doi.org/10.6007/ijarped/v13-i3/21697>
- Noetel, M., Griffith, S., Delaney, O., Sanders, T., Parker, P. D., Cruz, B. del P., & Lonsdale, C. (2021). Video Improves Learning in Higher Education: A Systematic Review [Review of Video Improves Learning in Higher Education: A Systematic Review]. Review of Educational Research, 91(2), 204. SAGE Publishing. <https://doi.org/10.3102/0034654321990713>
- Novianti, W. (2020). Urgensi Berpikir Kritis Pada Remaja Di Era 4.0. Journal of Education and Counseling (JECO), 1(1), 38. <https://doi.org/10.32627/jeco.v1i1.519>
- Nurwahidah, C. D., Zaharah, Z., & Sina, I. (2021). MEDIA VIDEO PEMBELAJARAN DALAM MENINGKATKAN MOTIVASI DAN PRESTASI MAHASISWA. Rausyan Fikr Jurnal Pemikiran Dan Pencerahan, 17(1). <https://doi.org/10.31000/rf.v17i1.4168>
- Palennari, M., Lasmi, L., & Rachmawaty, R. (2021). Keterampilan Pemecahan Masalah Peserta Didik: Studi Kasus di SMA Negeri 1 Wonomulyo. Diklabio Jurnal Pendidikan Dan Pembelajaran

- Biologi, 5(2), 208. <https://doi.org/10.33369/diklabio.5.2.208-216>
- Rasi, P., & Poikela, S. (2016). A Review of Video Triggers and Video Production in Higher Education and Continuing Education PBL Settings [Review of A Review of Video Triggers and Video Production in Higher Education and Continuing Education PBL Settings]. *Interdisciplinary Journal of Problem-Based Learning*, 10(1). Purdue University Press. <https://doi.org/10.7771/1541-5015.1609>
- Rico, R., & Ertmer, P. A. (2015). Examining the Role of the Instructor in Problem-centered Instruction. *TechTrends*, 59(4), 96. <https://doi.org/10.1007/s11528-015-0876-4>
- Saraswati, I., Saptono, S., & Susanti, R. (2018). The Effectiveness of Problem Based Learning Model Aided with Concept Mapping on the Analysis of Senior High School Students' Ability in Learning Material of Immune System. *Journal of Biology Education*, 7(3), 273. <https://doi.org/10.15294/jbe.v7i3.25655>
- Silalahi, R. M. (2018). Assessing Students' Understanding Towards Critical Reading and Its Impacts Towards Their Lives. *IJEE (Indonesian Journal of English Education)*, 5(2), 191. <https://doi.org/10.15408/ijee.v5i2.9532>
- Spliid, C. M., Mohd-Yusof, K., Arsat, M., Borhan, M. T., Graaff, E. de, Kolmos, A., & Phang, F. A. (2013). Discussion as media and tool in PBL project-groups : constructing learning and managing. *Research Portal Denmark*, 40. <https://local.forskningportal.dk/local/dki-cgi/ws/cris-link?src=aau&id=aau-d65592aa-9f90-4905-b0a6-b645779f1893&ti=Discussion%20as%20media%20and%20tool%20in%20PBL%20project-groups%20%3A%20constructing%20learning%20and%20managing>
- Suwastini, N. K. A., Puspawati, N. W. N., Adnyani, N. L. P. S., Dantes, G. R., & Rusnalasari, Z. D. (2021). Problem-based learning and 21st-century skills: Are they compatible? *EduLite Journal of English Education Literature and Culture*, 6(2), 326. <https://doi.org/10.30659/e.6.2.326-340>
- Turcan, R. V., & Bugaian, L. (2016). When Students Take the Lead: Enhancing Quality and Relevance of Higher Education through Innovation in Student-Centred Problem-Based Active Learning. In *Research Portal Denmark. Technical University of Denmark*. <https://local.forskningportal.dk/local/dki-cgi/ws/cris-link?src=aau&id=aau-09ca7442-f823-4bea-bed7-ba024d9a62fa&ti=When%20Students%20Take%20the%20Lead%3A%20Enhancing%20Quality%20and%20Relevance%20of%20Higher%20Education%20through%20Innovation%20in%20Student-Centred%20Problem-Based%20Active%20Learning>
- Yew, E. H. J., & Goh, K. (2016). Problem-Based Learning: An Overview of its Process and Impact on Learning. *Health Professions Education*, 2(2), 75. <https://doi.org/10.1016/j.hpe.2016.01.004>
- Yu-peng, L., & Yu, Z. (2023). A Meta-analysis Evaluating the Effectiveness of Instructional Video Technologies. *Technology Knowledge and Learning*, 29(4), 2081. <https://doi.org/10.1007/s10758-023-09669-3>
- Zannah, N., & Setiawan, H. R. (2022). The 2013 Curriculum Learning Process in Senior High School. *AL-ISHLAH Jurnal Pendidikan*, 14(2), 1721. <https://doi.org/10.35445/alishlah.v14i2.947>