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The Application of the PjBL Model Accompanied By E-LKPD Liveworksheet On Learning Outcomes In Islamic Cultural History

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ABSTRACT

This study discusses the issue of low student learning outcomes in Islamic Cultural History (SKI) subjects, which are hampered by the broad and complex nature of the subject matter, making it difficult for students to fully understand. This situation highlights the need for innovative learning models that can enhance understanding and increase engagement. One promising approach is the Project-Based Learning (PjBL) model, especially when combined with interactive digital tools such as e-LKPD Liveworksheet. The purpose of this study is to determine whether students taught using the PjBL model with the assistance of e-LKPD Liveworksheet achieve higher learning outcomes compared to those taught using the Direct Instruction (DI) model. This quantitative study employs an experimental method with a quasi-experimental design, specifically a posttest-only control group design. Sampling uses cluster random sampling, with class XI MIA I as the control group and XI MIA V as the experimental group. Data were collected through learning outcome tests and motivation questionnaires. The results showed that the experimental group achieved an average posttest score of 85.48, higher than the control group's score of 79,20. Hypothesis testing using a t-test yielded a t-value of 4,34 , exceeding the table t-value of 1.69, indicating a statistically significant difference. These findings indicate that the PjBL model supported by e-LKPD Liveworksheet effectively improves learning outcomes in SKI subjects. The collaborative and project-oriented approach, supported by interactive media, increases motivation, engagement, and understanding. This integration can be recommended as an effective strategy to improve academic achievement and motivation in SKI learning.

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1. Introduction

Islamic Cultural History (SKI) is a vital subject taught at the Madrasah level, as it presents a series of significant historical events involving prominent Muslim figures. Learning SKI goes beyond memorizing the chronology of Islamic development and the lives of influential individuals; students are also expected to internalize the values and moral lessons embedded in the material (Dayu et al. 2022). However, in practice particularly in the context of this study many students still fail to meet the Minimum Mastery Criteria (KKTP). This is largely due to the volume and complexity of the content, which makes it challenging for students to fully grasp the material, leading to low learning outcomes.

Consequently, various challenges still hinder the SKI (Islamic Cultural History) learning process. For instance, (Fauziah et al. 2022; Rohmah et al. 2022) found that students often struggle to grasp cultural history content, perceiving it as complex and abstract. Similarly, Rohman et al. (2021) noted that the material's focus on specific social, political, and economic conditions can make it difficult for students to connect historical events with their broader contexts. Moreover, as highlighted by (Laelah et al. 2021), classrooms often lack access to supporting resources like images, videos, and historical artifacts, which limits students' opportunities for hands-on learning and negatively impacts their academic performance.

From the explanation above, it is clear that the SKI learning process faces numerous challenges. One potential solution is the use of the Project-Based Learning (PjBL) model in combination with e-LKPD Liveworksheet. This model emphasizes developing students' problem-solving skills through project work that results in a tangible product. In practice, the PjBL approach allows students to actively participate in decision-making such as choosing topics, conducting research, and completing projects thereby engaging them in real-world learning experiences (Kristiyanto, 2020). Furthermore, Azizah et al. (2020) argue that PjBL promotes active learning, where students are encouraged to explore tasks, create plans, evaluate solutions, and visualize various ideas. This method fosters deeper thinking and encourages students to focus not only on the final outcomes but also on the learning process and the meaning behind their work.

The implementation of the Project-Based Learning (PjBL) model still faces several challenges. One major issue is the need for various resources such as teaching materials, tools, and ample time to effectively support project activities. This aligns with findings by Hakim & Alfiyah (2024), who noted that limited resources can obstruct successful project execution. Additionally, as Makahenggeng (2023) pointed out, effective collaboration among students is essential in PjBL to achieve the desired outcomes. However, without proper direction from educators, teamwork can become disorganized, leading to subpar results. To address this, educators should offer structured support, including clear task distribution, deadline setting, and ongoing project monitoring and evaluation.

Based on the explanation above, an alternative solution is required to enhance the effective implementation of the PjBL model in SKI learning. One such solution is integrating e-LKPD through the Liveworksheet platform. Liveworksheet is a web-based tool that utilizes modern technology to provide interactive features like audio, images, and video (Khikmiyah, 2021). It allows traditional worksheets to be

transformed into dynamic online exercises with automatic grading. Students can complete and submit their assignments directly online, streamlining the learning process. This platform is considered a practical e-LKPD option due to its user-friendly interface and ability to help teachers save time when evaluating student work (Nurafriani & Mulyawati, 2023). Therefore, this study was carried out in the 11th grade at MAN 1 Padangsidempuan to assess students' understanding of SKI learning and improve their academic performance.

The novelty of this study lies in the application of the Project-Based Learning model combined with e-LKPD Liveworksheet in SKI learning at MAN 1 Padangsidimpuan. This integration is designed to overcome resource limitations by providing web-based interactive materials and exercises equipped with audio, image, and video features. This approach also strengthens the PjBL stages with structured guidance, clear task distribution, and regular monitoring of project progress through digital media. With this combination, the study is expected to significantly enhance students' motivation, active engagement, and learning outcomes, particularly in the context of SKI education, which has not been extensively explored using a similar approach.

2. Literature Review

Project-Based Learning (PBL) Model

According to (Umamah & Andi, 2018), the Project-Based Learning (PjBL) model is an innovative approach that emphasizes contextual learning through engaging in complex activities. This method centers on key concepts and principles of a subject, encouraging students to explore and solve problems while allowing them to independently construct their understanding by creating tangible products. PjBL is a learner-centered approach in which the teacher acts primarily as a facilitator and motivator. Throughout the learning process, students are given the chance to address challenges they encounter and to take ownership of their learning, ultimately producing meaningful and realistic work (Fathurrohman, 2017).

In essence, the PjBL learning model is more geared toward developing students' problem-solving skills when working on projects to produce a piece of work. In its implementation, the PjBL model provides students with significant opportunities to make decisions when selecting topics, conducting research, and completing the chosen project, so that in this model, students engage in real-world learning processes (Kristiyanto, 2020). From another perspective, the PjBL learning model should be a learning process focused on active learning activities, where students engage in exploring tasks, developing plans, evaluating solutions at each stage, and creating various representations of ideas. Learning with the PjBL model will motivate students to think when doing an activity so that they are not only focused on getting results but also on the meaning of those results (Azizah et al., 2020). Based on several understandings of the PjBL learning model, it involves students actively creating products through projects, with a focus on developing problem-solving skills. Students are given the freedom to choose topics, conduct research, and complete projects, similar to real-world scenarios. While emphasizing outcomes, PjBL also prioritizes understanding the meaning behind those outcomes, thereby enhancing students' motivation and engagement in the learning process.

E-LKPD Liveworksheet

Liveworksheet is a platform designed for creating and presenting worksheets in a digital format. One of its main benefits is that it simplifies the process of working with e-LKPD, offering a variety of question types through its engaging features. After students complete the questions, they instantly receive their scores, which are automatically sent to teachers, making it easier for educators to compile student assessment results (Putri et al., 2021). This website is easily accessible through Google without requiring any prior downloads. Besides creating e-LKPDs, Liveworksheet allows educators to develop interactive teaching materials or online modules using animated images and illustrations, which helps boost students' motivation and enhances their comprehension of the questions in the e-LKPD. Furthermore, this e-LKPD is environmentally friendly by reducing paper usage, as students only need an internet connection to access and engage with the learning materials provided (Khikmiyah, 2021).

Ramdani et al., (2022) state that worksheets created using LiveWorksheet have several advantages, namely: they are easy to use, practical, and have various features that can make worksheets more interesting. When creating worksheets, users can include text, animated videos, moving images, links, audio, and various types of questions such as multiple-choice questions, short answer questions, and others, thereby engaging students in learning. Additionally, the answers to the worksheets completed by students are sent to the teacher's registered account and email, and the students' scores are automatically processed within the system. From the above explanation, the definition of liveworksheet is a digital platform that simplifies the creation and completion of Student Worksheets (LKPD) online with various engaging features. This platform allows students to receive their scores immediately after completing the questions, which are automatically sent to educators to facilitate assessment. In addition to being environmentally friendly, LiveWorksheet also supports the creation of interactive and engaging online teaching materials through text, animations, audio, and various types of questions that can enhance students' motivation to learn.

3. Method

This study employs a quantitative research method with a quasi-experimental design, specifically a posttest-only control group design. The population consists of 385 eleventh-grade students at MAN 1 Padangsidempuan. Using cluster random sampling, the study selected grade XI MIA I as the control group and grade XI MIA V as the experimental group, totaling 70 students. The experimental group received the treatment, while the control group did not, followed by an assessment of learning outcomes after the treatment. Data were collected through validated objective test questions measuring learning outcomes. The analysis involved conducting normality tests to assess data distribution, homogeneity tests to evaluate variance similarity between groups, and t-tests to examine differences in learning outcomes between the experimental and control groups..

Before the study was carried out, the learning outcome test instruments were evaluated for validity and reliability to confirm that the questions were suitable and consistently measured the students' abilities. The validity test involved expert reviews of the questions and trialing them with students outside the research sample.

The reliability test was conducted using the Kuder-Richardson (KR-20) formula, appropriate for multiple-choice questions. Furthermore, to maintain data validity, the learning process in both the experimental and control groups was carefully monitored to ensure it followed the planned treatment protocol, including consistent instruction time, teaching materials, and media used.

4. Result and Discussion

This study took place in classes XI MIA 1 and XI MIA 5 at MAN 1 Padangsidimpuan from January 22 to February 26, 2025, involving a total of five sessions for both the experimental and control classes. This section outlines the research results and discussion regarding the application of the Project-Based Learning (PjBL) model, supported by e-LKPD using Liveworksheets, on the learning outcomes of Grade XI students at MAN 1 Padangsidimpuan in the Islamic Cultural History (SKI) subject. The study was driven by the low student learning outcomes, which were linked to the complexity of the SKI curriculum and the absence of interactive, contextual learning materials. To tackle these challenges, an experiment was carried out using the PjBL model integrated with e-LKPD Liveworksheets to improve student achievement.

The data in this chapter were collected from posttest results of two sample groups: the experimental class, which implemented the PjBL model combined with e-LKPD Liveworksheet, and the control class, which used the Direct Instruction (DI) model. The data analysis involved normality tests, homogeneity tests, and hypothesis testing to assess the significant impact of the treatment on student learning outcomes.

Furthermore, the discussion in this chapter goes beyond comparing the learning outcomes of the two groups by connecting the research results with established learning theories and relevant prior studies. This approach aims to offer a thorough understanding of how effectively the PjBL model, combined with e-LKPD Liveworksheet, enhances the overall quality of SKI learning, addressing students' cognitive, affective, and psychomotor domains.

Table 1

Student Learning Outcomes

Sample Class	N	Min	Max	Mean	Std.dev
Experimental Class	35	68	100	85,48	9,053
Control Class	35	64	96	79,20	10,41

Referring to Table 1 above, the t-data for the learning outcomes of both the experimental and control classes show a significance value greater than 0.05. Therefore, it can be concluded that the learning outcomes for both groups are normally distributed.

a. Descriptive Learning Outcomes of Experimental Class XI MIA V

The learning outcome test given to the experimental class XI MIA V at MAN 1 Padangsidimpuan included 25 questions, which were answered by 35 students.

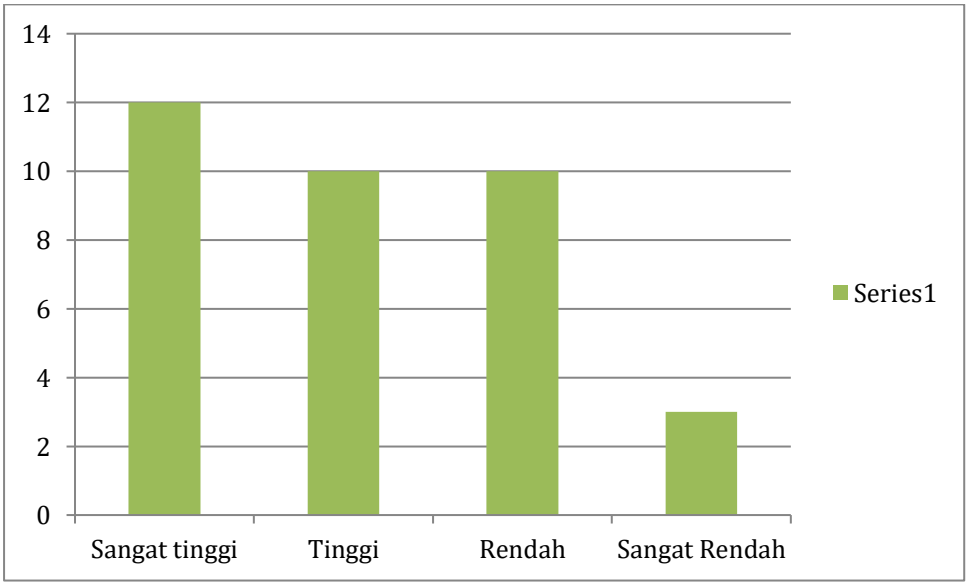
The descriptive data analysis of the learning motivation percentages is presented in Table 2 below:

Table 2

Descriptive Analysis of Learning Outcomes in Experimental Class XI MIA V at MAN 1 Padangsidimpuan

Classification	Interval	Frequency	Persentase%
Extremely	92-100		34,28%
High		12	
High	84-91	10	28,57%
Low	76-83	10	28,57%
Very low	68-75	3	8,57%
Total		35	100%

Based on the data presented in Table 2, the students' learning outcomes were classified into four categories: very high, high, low, and very low. There were 12 students (34.28%) in the very high category, 10 students (28.57%) in the high category, another 10 students (28.57%) in the low category, and 3 students (8.57%) in the very low category. The average score (mean) was 85.48. When compared to the classification scale used for the experimental class XI MIA V, this average falls into the "very high" category, within the 92–100 interval. For easier comparison of the frequency distribution, the data are also displayed in the histogram shown in Figure 1:



Gambar 1: Histogram of Learning Outcomes for Experimental Class XI MIA V at MAN 1 Padangsidimpuan

a. Descriptive learning outcomes of the control class

The learning outcome test administered to the control class XI MIA I at MAN 1 Padangsidimpuan included 25 questions, answered by 35 students. The descriptive analysis of the percentage of learning outcomes is presented in Table 3 below:

Table 3

Descriptive Analysis of Learning Outcomes in Control Class XI MIA I at MAN 1 Padangsidimpuan

Classification	Interval	Frequency	Persentase%
Extremely high	88-96	8	22,85%
High	80-87	11	31,42%
Low	72-79	10	28,57%
Very Low	64-71	6	17,14%
Total		35	100%

Based on the data in Table 3, students' learning outcomes were divided into four categories: very high, high, low, and very low. A total of 8 students (22.85%) fell into the very high category, 11 students (31.42%) into the high category, 10 students (28.57%) into the low category, and 6 students (17.14%) into the very low category. The overall average score was 79.20. According to the classification used for the control class XI MIA I, this average places the class in the "high" category, specifically within the 80–87 range. For easier comparison of the frequency distribution, the results are also illustrated in the histogram shown in Figure 2:

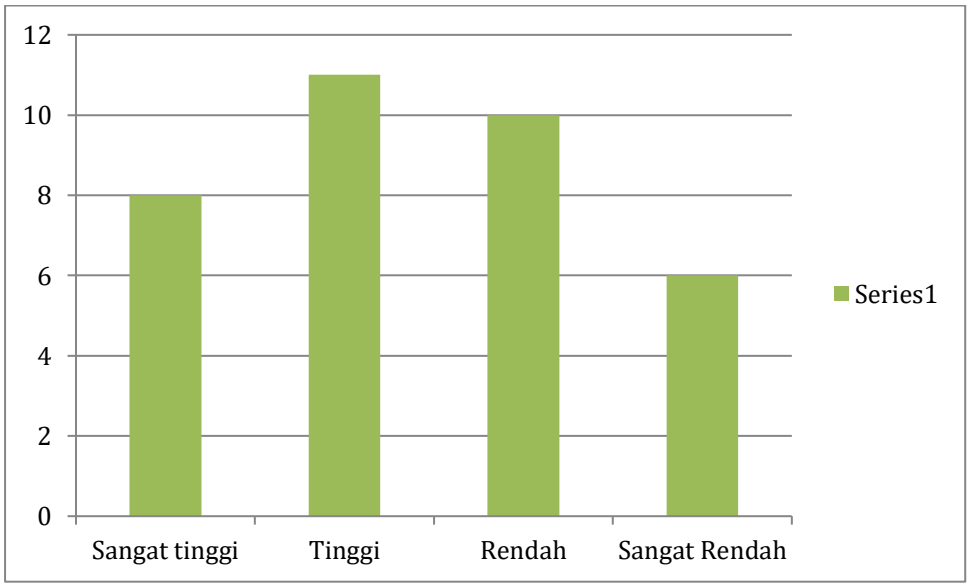


Figure 2: Histogram of Learning Outcomes for Control Class XI MIA I at MAN 1 Padangsidimpuan

a. Testing the normality of the learning outcomes of students in the experimental class and control class.

The normality test for student learning outcomes was carried out using SPSS, applying the following criteria: a significance value less than 0.05 indicates that the data is not normally distributed, while a value greater than 0.05 indicates that the data is normally distributed. This test was performed to determine whether the data followed a normal distribution. The results of the normality test using the Kolmogorov-Smirnov method are presented in Table 4 below.

Table 4

Testing the normality of learning outcomes

Sample Class	Significance	Conclusion
Experimental Class	0,200	Normal
Control Class	0,171	Normal

Referring to Table 2 above, the significance values for the learning outcome data of both the experimental and control classes are greater than 0.05. Therefore, it can be concluded that the learning interest in both groups is normally distributed.

a. Test of homogeneity of learning outcomes of students in the experimental class and the control class.

The criteria for the homogeneity test are as follows: if the significance value is less than 0.05, the data variances are considered non-homogeneous; if the significance value is greater than 0.05, the variances are homogeneous. Based on the results, the significance value for the learning interest between the experimental and control classes is 0.730, which is greater than 0.05. Therefore, it can be concluded that the learning outcomes of both classes have homogeneous variance.

b. Hypothesis testing of the learning outcomes of students in the experimental class and control class.

Hypothesis testing for the learning outcomes of the experimental and control classes was conducted using an independent t-test. According to the decision rule, if the calculated t-value is greater than the t-table value, Ha is accepted and Ho is rejected; if the calculated t-value is less than the t-table value, then Ho is accepted and Ha is rejected. The results showed a calculated t-value of 4.34, while the t-table value was 1.69. Since the calculated t-value exceeds the t-table value, Ha is accepted and Ho is rejected. This indicates that the learning outcomes of students in class XI MIA V, who were taught using the PjBL model combined with Liveworksheets, are significantly better than those taught using the Direct Instruction (DI) method.

The research findings presented above are consistent with previous studies, which also demonstrate that the use of this model can enhance SKI learning, particularly in the topic of the Umayyad Dynasty in Damascus. This approach promotes critical thinking, creativity, and student responsibility through independently managed projects completed within a set timeframe, resulting in tangible products or presentations (Makahenggeng, 2023). Similarly, another study found that PjBL improved student learning outcomes by incorporating video-based SKI instruction, active engagement, expert group discussions, and presentations. Student understanding was assessed through quizzes and post-tests, with further improvements made in subsequent cycles (Umam, 2023). Additionally, this study aims to develop digital worksheets using Liveworksheet, a free platform that enables teachers to transform printed worksheets into interactive online exercises with automatic grading (Hastuti, 2023).

This finding is supported by research conducted by Iqbal Nur Hamzah, Ali Imron, and Yustina Sri Ekwandari, titled *"The Effect of the Project-Based Learning (PjBL) Model on Improving History Learning Motivation."* Based on quantitative analysis

using a paired t-test, the study concluded that the PjBL model has a significant impact on increasing the learning motivation of students in class X.3 at SMA Muhammadiyah Pringsewu. The significance level of the model's effect on motivation was 0.441, which, according to the correlation interpretation table, is categorized as moderate (Hamzah et al., 2017).

A study by Terara et al. (2024), titled *"The Application of Video Podcast-Based Project-Based Learning to Improve History Learning Motivation in Grade X Students,"* found that implementing the Project-Based Learning (PjBL) model through video podcasts significantly boosts students' motivation to learn history. This is demonstrated by an increase in motivation levels—from 71.53% in the pre-cycle to 74.39% in Cycle I, and further to 81.94% in Cycle II. These results indicate that student motivation exceeded the target indicator set by the research, which was 75%.

Another study by Siregar et al. (2022), titled *"The Effect of the Project-Based Learning Model on the History Learning Outcomes of Grade XI Science Students at MAN 3 Medan,"* concluded that the use of the Project-Based Learning (PjBL) model led to improvements in the learning outcomes of Grade XI Science students. This is evident from the pretest scores, which ranged from a low of 43.33 to a high of 76.67, with an average of 61.86, compared to the posttest scores, which ranged from 70.00 to 93.33, with an average of 82.90. The study found that the PjBL model had a significant effect on history learning outcomes, accounting for 23.8% of the improvement observed among the Grade XI Science students at MAN 3 Medan.

Regarding the use of e-LKPD Liveworksheet, Reina Meililia and Rina Astuti conducted a study titled *"The Effect of E-LKPD Based on Liveworksheet on Motivation and Learning Outcomes of Students at SMA Muhammadiyah 1 Surakarta."* Their findings indicated that e-LKPD positively influenced both student motivation and learning outcomes. The experimental class that used e-LKPD achieved an average score of 98.08, compared to 82.06 in the control class. Additionally, the motivation level in the experimental class was 66%, categorized as good, while the control class had a motivation level of 64%, considered fairly good. This research shares similarities with the current study in its focus on the use of Liveworksheet for motivation and learning outcomes, but differs in the use of the PjBL learning model and the research location (Meililia & Astuti, 2023).

Consistent with the research by Hastuti (2023) titled *"The Effect of Using Student Worksheets (LKPD) Liveworksheet Media on Student Learning Outcomes in Social Studies,"* the study found that the average score for LKPD based on Liveworksheet was 84.71. In addition to this average, the Sample T-Test results showed a significance value of 0.000, which is less than 0.05, indicating that Ho was rejected and Ha was accepted. Furthermore, the experimental group's average learning outcomes increased by 57.45%, categorizing the use of Liveworksheet as moderately effective.

Based on the research findings related to the author's study using the PjBL model, students not only gained a textual understanding of the SKI material but also showed improvements in their learning outcomes and motivation. The use of e-LKPD Liveworksheet assists teachers in delivering formative assessments more directly and efficiently, while enabling students to receive prompt feedback.

Group projects also helped develop students' sense of responsibility and social skills. They learned to collaborate on problem-solving, distribute tasks effectively, and present their discussion results in an organized way. Observations showed that some students who were previously passive became more engaged, particularly when completing tasks using the interactive Liveworksheet. Overall, applying the PjBL model combined with e-LKPD Liveworksheet in Islamic Cultural History lessons not only boosts student motivation but also significantly enhances learning outcomes across knowledge, attitudes, and skills. This approach fits well with the traits of today's students, who are deeply connected to digital technology and benefit from active, creative, and collaborative learning methods. Therefore, this model is highly appropriate for Islamic Cultural History education, fostering a learning environment that is enjoyable, stimulating, and centered around students.

However, this study has several limitations that impacted the results, such as limited implementation time which restricted the full application of the PjBL model, varying levels of student proficiency with technology, and uneven participation within groups that affected collaboration. Additionally, challenges arose while completing the e-LKPD, especially with unexpected questions appearing during the process. Despite these obstacles, the key findings show that the PjBL model combined with Liveworksheet can effectively improve student motivation and learning outcomes. The researcher suggests making improvements and conducting more detailed planning for future research.

5. Conclusion

The learning outcomes of students who applied the PJBL model accompanied by e-LKPD Liveworksheet were proven to be higher than those of the Direct Instruction (DI) model. This can be seen from the average scores obtained by the experimental class, which reached 85.48, while the control class obtained 79.20. The hypothesis test showed that the calculated t-value of 4.34 was higher than the table t-value of 1.69, indicating a significant difference between the two learning models. The results of this study have important implications for SKI educators and the use of digital learning media. For SKI educators, the application of the Project-Based Learning (PjBL) model combined with e-LKPD Liveworksheet can be an effective learning strategy to improve student learning outcomes, engagement, and motivation. Teachers can utilize Liveworksheet as an interactive medium that facilitates task assignment, answer collection, and real-time evaluation. For digital media, these findings highlight the need for the development of more varied and contextual e-LKPD features, particularly for SKI materials rich in historical narratives, images, and visual sources, to optimally support project-based learning.

This study has several limitations. First, time constraints limited the depth and scope of the project. Second, there were technological obstacles among students, such as limited internet access, inadequate devices, and varying levels of digital literacy. Third, student participation in the project was not evenly distributed, with some students being less active in contributing to the group, resulting in the project outcomes being primarily supported by certain members.

Further research is recommended to test the effectiveness of integrating PjBL with e-LKPD Liveworksheet at different educational levels, such as Madrasah Tsanawiyah

or universities, to see the consistency of results across varying ages and abilities. Additionally, this model should be developed to align with the principles of the Merdeka Curriculum, with an emphasis on differentiated learning and strengthening the Pancasila learner profile. Further research could also explore the use of other digital media integrated with Liveworksheet, such as online collaboration platforms or interactive simulations, to enrich project-based learning experiences.

6. Reference

Azizah, Wulan Aulia, Sarwi Sarwi, and Ellianawati Ellianawati. 2020. "Implementation of Project-Based Learning Model (PjBL) Using STREAM-Based Approach in Elementary Schools." *Journal of Primary Education* 9 (3): 238–47.

Dayu, Refni, Jamal Mirdad, and Nidya Fitri. 2022. "Development of Google Earth Multimedia Based on Virtual Ski Lessons in Madrasah Tsanawiyah (MTs)." Ideas: Journal of Education, Social, and Culture 8 (3): 1179–84.

Fathurrohman, Muhammad. 2017. *Belajar Dan Pembelajaran Modern: Konsep Dasar, Inovasi Dan Teori Pembelajaran*. Garudhawaca.

Fauziah, Zumrotul, Ahmad Shofiyuddin, and Hidayatur Rofiana. 2022. "Implementasi Media Pembelajaran Interaktif Berbasis Aplikasi Canva Pada Mata Pelajaran Sejarah Kebudayaan Islam." *Madinah: Jurnal Studi Islam* 9 (1): 7–19.

Hakim, Luqman, and Hanik Yuni Alfiyah. 2024. "Implementation of the Cooperative Learning Model Type Project Based Learning in SKI Subjects to Improve Student Creativity at MA Al-Ihsan Krian Sidoarjo." Cendikia: Journal of Education and Teaching 2 (2): 282–91..

Khikmiyah, Fatimatul. 2021. "Implementation of Web Live Worksheet Based on Problem-Based Learning in Mathematics Learning." Pedagogy: Journal of Mathematics Education 6 (1): 1–12.

Kristiyanto, Dedi. 2020. "Improving Critical Thinking Skills and Mathematics Learning Outcomes with the Project-Based Learning (PBL) Model." Mimbar Ilmu 25 (1): 1–10.

Laelah, Ferisa, Ismail Sukardi, and Amalia Hasanah. 2021. "Teachers' and Students' Perceptions of E-Learning-Based Instruction in Islamic Cultural History at Madrasah." Muaddib: Islamic Education Journal 4 (2): 91–99.

Makahenggeng, Adithya Pratama. 2023. "The Use of the Pjbl Method in Improving Student Learning Outcomes in Islamic Cultural History Subjects on the Material of the Birth of the Umayyad Dynasty in Damascus at Man 1 Kotamobagu." Al-Mihnah: Journal of Islamic Education and Teaching 1 (2): 335–42.

Meilia, Reina, and Rina Astuti. n.d. "The Effect of Live Worksheet-Based E-LKPD on the Motivation and Learning Outcomes of Students at Muhammadiyah 1 Surakarta High School in the 2023/2024 Academic Year."

Nurafriani, Raden Rani, and Yuli Mulyawati. 2023. "Development of E-LKPD Based on Liveworksheet in Theme 1 Subtheme 1 Lesson 3." Didaktik: Scientific Journal of PGSD STKIP Subang 9 (1): 404–14.

Putri, Alfiana Shinta, Ghefira Syahrani Putri, and Nesya Priyandita. 2021. "The Use of Liveworksheet Media to Enhance Active Participation in Thematic Learning in

Upper Elementary School." In Proceedings of Didaktis: National Seminar on Elementary Education, 6:21–32. http://proceedings2.upi.edu/index.php/semnaspendas/article/view/2206.

Ramdani, Ramdani, Nur Azizah Muslimin, and Halimah Husein. 2022. "Pengaruh Liveworksheets Dalam Model PBL Terhadap Hasil Belajar Siswa Kelas XI IPA SMAN 3 Barru: Studi Pada Materi Pokok Larutan Penyangga." *EDUTECH: Jurnal Inovasi Pendidikan Berbantuan Teknologi* 2 (3): 243–51.

Rohman, Prasetyo Nur, Mohammad Na'im, and Sumardi Sumardi. 2021. "Development of Prezi-Based Media in Grade X High School History Lessons Using the 4D Model." JINoP (Journal of Learning Innovation) 7 (1): 1–9.

Umamah, Chairatul, and Herman Jufri Andi. 2018. "The Effect Of Project Based Learning As Learning Innovation in Applied Physics." *Proceedings of the 5th International Conference on Research, Implementation, and Education of Mathematics and Science (ICRIEMS), Yogyakarta, Indonesia*, 7–8.