

BLENDED PROJECT-BASED LEARNING IN ISLAMIC RELIGIOUS EDUCATION: ENHANCING DIGITAL LITERACY FOR 21ST CENTURY SKILLS

*¹ EKA YULIANA NUROHMAH, EKAYULIANANUROHMAH@GMAIL.COM

² SITI NOER FARIDA LAILA, NOER.FARIDA@UINSATU.AC.ID

*¹ UIN SAYYID ALI RAHMATULLAH TULUNGAGUNG, TULUNGAGUNG, EAST JAVA, INDONESIA

² UIN SAYYID ALI RAHMATULLAH TULUNGAGUNG, TULUNGAGUNG, EAST JAVA, INDONESIA

(WhatsApp number: 085648283189)

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ABSTRACT

The integration of digital technology into education is a crucial demand of the 21st century, including in Islamic Religious Education (IRE). Blended Project-Based Learning (BPjBL) is considered relevant as it combines collaborative project-based learning with the use of digital platforms. This study aims to describe the design and implementation of BPjBL in senior high schools and to examine its contribution to students' digital literacy skills. A mixed-methods design with concurrent triangulation was employed. Quantitative data were collected through a survey of 226 students, while qualitative data were obtained through classroom observations, interviews, and document analysis. The findings reveal that: (1) teachers design IRE learning by integrating both digital and non-digital resources and media to complete collaborative projects; (2) students implement BPjBL in a structured manner with guidance from IRE teachers, progressing through the stages of planning (77% achievement), implementation (83%), and publication (70%); and (3) BPjBL has a significant positive effect (71.2%) on students' digital literacy. Students demonstrated the ability to access and evaluate information from diverse sources, use digital applications to create products, and disseminate Islamic messages through platforms such as TikTok and YouTube. These findings indicate that BPjBL is effective not only in delivering religious content but also in strengthening students' digital literacy. The study concludes that BPjBL functions as a transformative model for IRE learning by integrating religious values with essential 21st-century digital competencies.

Keywords: Blended Project-Based Learning, Digital Literacy, Islamic Religion Education, 21st Century Skills

BACKGROUND

The rapid development of digital technology in the 21st century has brought about profound changes across nearly all aspects of life, including education. The integration of digital technology into education has become an unavoidable necessity, as schools are expected to prepare a generation that is adaptive, creative, and competent in facing global challenges (Selwyn, 2016). Within the context of Islamic Religious Education (IRE), the issue of digitalization is increasingly critical. This urgency arises not only from the demands of modernization, but also from the need to adapt teaching methods to the characteristics of today's digital-native generation, who are accustomed to technology-based interactions (Alharbi & Drew, 2014). At the same time, however, it is essential to ensure that religious values are preserved and not diminished by the forces of digitalization. This condition highlights the pressing need for a learning model that harmonizes the mastery of religious teachings with 21st-century competencies, particularly digital literacy, so that students can both internalize Islamic values and actively contribute to the digital society.

Previous studies have shown that project-based learning, when combined with digital technology, significantly enhances students' digital literacy (Ibad & Saelaemae, 2024; Tampubolon et al., 2024). Digital literacy in this context extends beyond technical skills in operating digital devices; it also encompasses critical thinking, effective communication, and the ethical dissemination of information in digital spaces. In IRE, other studies have confirmed that popular platforms such as TikTok and YouTube can serve as creative and engaging channels for delivering religious messages relevant to the lifestyle of younger generations (Rais et al., 2020; Kusumawati et al., 2025). Nevertheless, empirical studies that specifically examine the design and implementation of learning models integrating project-based approaches with digital tools remain limited. This is especially true in research that investigates how such integration can simultaneously strengthen digital literacy and sustain the internalization of religious values among secondary school students (Thomas, 2000; Voogt & Roblin, 2012).

Addressing this gap, the present study seeks to describe the design and implementation of the Blended Project-Based Learning (BPjBL) model in IRE at the senior high school level. More specifically, it is guided by three main research questions: first, how IRE teachers design project-based learning by combining digital and non-digital resources; second, how students collaboratively carry out the stages of project work, including planning, implementation, and publication of results; and third, to what extent the implementation of BPjBL contributes to the enhancement of students' digital literacy. In this way, the study not only provides a technical description of learning practices, but also examines their impact on students' digital competencies, which are essential for navigating the challenges of the 21st century (Blumenfeld et al., 1991; Lai, 2019).

This study is grounded in the assumption that BPjBL represents a relevant and contextual transformational model for IRE in the digital era. It is considered capable of addressing two core needs simultaneously: mastering substantive religious values and developing instrumental digital skills. With teachers acting as facilitators, BPjBL is expected to foster collaborative, creative, and reflective learning through authentic, meaningful projects. The study hypothesizes that BPjBL can substantially enhance students' digital literacy, as reflected in their ability to access and critically evaluate digital sources, utilize applications to produce creative works, and disseminate Islamic messages ethically and engagingly through social media. Thus, BPjBL emerges as an innovative strategy that bridges the gap between the classical traditions of religious education and the demands of digitally oriented learning (Bell, 2010; Halim & Noor, 2022).

The novelty of this study lies in its explicit focus on the design and implementation of BPjBL in IRE at the secondary school level. While previous studies have explored the role of project-based learning in improving digital literacy more generally, or examined the use of social media in religious communication, this study offers a fresh perspective. It positions BPjBL as an integrative model that simultaneously conveys religious content and systematically develops students' digital competencies. Particular emphasis is placed on student engagement across the entire project cycle—from planning and execution to the publication of digital outputs. Thus, this study contributes to the literature by demonstrating how project-based pedagogical transformation can align with the digitalization of learning, resulting in a generation of Muslims who are religious, innovative, and technologically literate. This novelty makes this study worthy of further research within the framework of 21st-century education (Bell, 2010; Halim & Noor, 2022). (Bell, 2010; Halim & Noor, 2022).

RESEARCH METHOD

The unit of analysis in this study is the learning practice of Islamic Religious Education (IRE) implemented through the Blended Project-Based Learning (BPjBL) model at the senior high school level. This unit was selected to capture how BPjBL is designed, implemented, and contributes to students' digital literacy. The study was conducted at a public high school representative of institutions that integrate digital technology into the curriculum. The case study focused on an 11th-grade classroom, where the IRE teachers acted both as facilitators and instructional designers, while students

functioned as project implementers. The processes examined included project planning, implementation, and publication of results in the form of digital products. Thus, the unit of analysis positioned schools, teachers, students, and project activities as interconnected elements within digital-based educational practices (Borich, 2016; Graham, 2013; Redecker, 2017).

This study employed a mixed-methods approach with a concurrent triangulation design. This design was chosen because IRE learning through BPjBL encompasses both quantitative dimensions—measurable through survey instruments—and qualitative dimensions that require deeper exploration through interviews, observations, and document analysis. In concurrent triangulation, quantitative and qualitative data are collected simultaneously within a single research phase, and the results are compared to identify convergence, divergence, or complementarity. Both methods were weighted equally so that each contributed meaningfully to answering the research questions. This approach enabled the researchers to develop a comprehensive understanding, capturing not only numerical patterns but also contextual narratives. Accordingly, the concurrent triangulation design was deemed most appropriate for exploring the effectiveness of BPjBL in enhancing digital literacy while supporting the internalization of religious values (Creswell & Plano Clark, 2018; Tashakkori & Teddlie, 2010; Johnson, Onwuegbuzie, & Turner, 2007).

The collected data consisted of both quantitative and qualitative data. Quantitative data were obtained through a survey of 226 eleventh-grade students, selected from a total population of 416. The survey measured students' engagement in BPjBL stages and their level of digital literacy. Qualitative data were gathered through interviews, classroom observations, and document analysis. Informants for qualitative data were chosen using purposive sampling, a technique based on specific criteria relevant to the research objectives. They included two IRE teachers who applied BPjBL and eleven students selected for their active involvement in project activities. Documentary sources included lesson plans, student project products, and records of digital publications. Combining these multiple data sources enabled a balanced and in-depth examination of BPjBL practices in the context of IRE (Patton, 2015; Fraenkel, Wallen, & Hyun, 2018; Yin, 2017).

Data collection followed systematic procedures consistent with the concurrent triangulation mixed methods design. First, quantitative data were collected by administering questionnaires to 226 11th-grade students. The instrument measured levels of student engagement across BPjBL stages—planning, implementation, and publication—and assessed their digital literacy skills. Simultaneously, qualitative data were collected through classroom observations, in-depth interviews with teachers and students, and analysis of relevant documents such as lesson plans, project notes, and students' digital publications on social media. Collecting data concurrently allowed for triangulation across methods and sources, thereby strengthening validity through mutual corroboration of quantitative and qualitative findings (Creswell & Creswell, 2018; Denzin, 1978; Merriam & Tisdell, 2016).

Data analysis was conducted separately for quantitative and qualitative data, and then integrated during the final stage of the study. Quantitative data were analyzed using descriptive statistics (frequency, percentage, mean, and standard deviation) to describe respondent characteristics and trends in digital literacy. Inferential analyses, including correlation and regression tests, were used to examine relationships among variables and assess the contribution of BPjBL to digital literacy outcomes. Qualitative data were analyzed using Miles, Huberman, and Saldaña's (2014) interactive model, consisting of three stages: data condensation, data display, and conclusion drawing/verification. Data condensation involved selecting, focusing, simplifying, abstracting, and transforming data that appeared in the fieldnotes, interview transcripts, and documents. Data display organized findings in the form of narratives, tables, or diagrams, while conclusion drawing involved interpretation and validation. Finally, results from the quantitative and qualitative analyses were compared through cross-analysis to identify correspondences and discrepancies, thereby producing a holistic understanding of the

phenomenon under study (Miles, Huberman, & Saldaña, 2014; Field, 2018; Tashakkori & Teddlie, 2010).

RESEARCH FINDINGS

1. Blended Project-Based Learning Design in Islamic Religious Education

To provide a comprehensive overview of the Blended Project-Based Learning (BPjBL) design in Islamic Religious Education (IRE), the researchers synthesized findings from multiple data sources, including interviews, observations, and documentation. The analysis focused on several key aspects: the use of media and learning resources, variations in teachers' instructional styles, students' roles in the learning process, and the digital context that supports implementation. These findings are summarized in the following table.

Table 1. BPjBL Design in Islamic Education Learning

Aspect	Field Findings	Data source
Media & Learning Resources	Teachers use whiteboards, LCD projectors, PowerPoint (PPT), instructional videos, and e-learning applications to support evaluation.	Teacher Interview, Observation
Teacher Variations	Teacher A consistently uses PPT and LCD; Teacher B primarily relies on textbooks and oral explanations, occasionally supplemented with videos.	Teacher & Student Interview
Student Role	Students take notes from PPTs, use videos as learning resources, and participate in evaluations on digital platforms.	Student Interview
Digitalization Context	The use of digital devices depends on available facilities, teacher readiness, and classroom characteristics.	Observation

The data presented in the table indicate that IRE teachers employ a combination of conventional and digital media to support learning. Tools such as whiteboards, LCD projectors, and PowerPoint slides are commonly used to deliver core material. In addition, teachers utilize instructional videos to create a more varied and engaging learning environment, while e-learning applications are integrated to facilitate digital-based evaluations. Nevertheless, differences in media usage were observed across teachers. For instance, some teachers rely heavily on PPTs and LCDs, whereas others adopt a more traditional approach based on textbooks and oral explanations, complemented occasionally with videos. Students, in turn, actively take notes from PPTs, engage with videos, and access digital resources provided by their teachers. Overall, the BPjBL design combines traditional and digital media to accommodate both classroom needs and teacher preferences.

The findings also suggest that the design of BPjBL in IRE is not fully homogeneous but is shaped by factors such as teacher readiness, pedagogical orientation, and the availability of resources. Teachers who possess adequate facilities and technological competence are more likely to consistently integrate digital media into their teaching, while others with limited access or different instructional preferences lean toward conventional methods supplemented with minimal digital tools. Despite these variations, a clear trend emerges: the integration of digital media—such as PPTs, videos, and e-learning platforms—is increasingly embedded in classroom practices. Students have likewise adapted by combining manual note-taking with digital resources shared through school platforms. This pattern reflects a gradual but steady adaptation among IRE teachers in leveraging digital technology to enrich project-based learning activities.

2. Implementation of *Blended Project-Based Learning* in Islamic Education

To illustrate how the Blended Project-Based Learning (BPjBL) model is applied in Islamic Religious Education (IRE), the researchers examined its implementation across the stages of planning, execution, publication, and evaluation. Particular attention was given to the roles of teachers and students in designing project themes, distributing tasks, and carrying out collaborative activities under teacher supervision. In addition, the researchers analyzed the digital publication of

student work on various platforms and assessed the quantitative outcomes of each stage. The findings are summarized in the table below.

Table 2. Implementation of BPjBL in Islamic Education Learning

Stage	Main Activities	Practical Example	Data source
Planning	Teachers and students collaboratively design the project, assign roles, select themes, and prepare necessary materials (e.g., costumes, tools).	Marriage contract simulation: role division (bride and groom, registrar, witnesses, MC, prayer leader).	Teacher & Student Interview
Implementation	Students conduct projects collaboratively with teacher guidance. The exercise session is carried out a week before the final performance.	<i>Munakahat fiqh</i> project: marriage contract simulation in the school mosque under disciplinary rules.	Observation, Interview
Publication & Assessment	Projects are published on TikTok, YouTube, and class accounts, or submitted directly to teachers. Assessment covers both practical skills and digital outputs.	Wedding ceremony video, digital wedding invitation, cinematic video, religious resume.	Document Analysis, Student Products

The implementation findings reveal that BPjBL unfolds through three key stages: planning, implementation, and publication and assessment. During the planning stage, teachers and students engage in discussions to decide on project themes, assign roles, and prepare supporting resources. The implementation stage centers on collaborative activities, such as simulation exercises carried out under teacher supervision. The publication stage requires students to present their project results through digital platforms (e.g., TikTok, YouTube, class social media accounts) or by submitting products directly to teachers. Quantitative results show relatively high levels of student achievement across all stages—77% in planning, 83% in implementation, and 70% in publication—indicating stronger performance in implementation compared to the other phases. These outcomes are corroborated by tangible products such as a video simulation of a marriage contract, digital invitations, and online summaries of religious content.

The emerging patterns suggest that BPjBL implementation in IRE emphasizes active student participation, supported by intensive teacher guidance. Although planning and publication stages achieved satisfactory results, the highest level of student engagement was seen during the implementation phase. This indicates that learners display greater enthusiasm when directly involved in practical, real-life activities (e.g., simulating a marriage ceremony) compared to preparatory or post-project tasks. Another pattern highlights the limited use of digital publication: some students remain hesitant to upload their work on personal accounts, preferring instead to share through collective class accounts. Consequently, while BPjBL in IRE has proven successful in fostering collaborative and experiential learning, further reinforcement is needed in the planning phase (to ensure systematic preparation) and in the publication phase (to expand the reach and impact of student work in digital spaces).

3. The Impact of Blended Project-Based Learning on Digital Literacy

To examine the impact of Blended Project-Based Learning (BPjBL) on digital literacy, the study focused on three main aspects: digital production skills, information access and evaluation, and collaboration and publication of work through social media. Findings reveal that students not only developed technological competencies by producing creative digital products but also enhanced their ability to search, process, and disseminate information effectively. In addition to qualitative observations, the study provides quantitative evidence showing the significant influence of BPjBL on students’ digital literacy. The detailed findings are summarized in the following table.

Table 3. Impact of BPjBL on Students' Digital Literacy

Impact Aspects	Findings	Product/Behavior Examples	Data Evidence
Digital Production Skills	Students can create videos, Islamic quotes, digital mind maps, and other creative content.	Wedding ceremony videos on YouTube; Islamic quotes on TikTok; mind maps via Canva.	Student Products, Observation
Access & Evaluation Skills	80% of students agree that BPjBL improves their ability to search for information online (Google, ChatGPT).	Use of online searches to enrich project materials.	Open Questionnaire
Digital Collaboration & Publication	Students are accustomed to using class social media accounts (TikTok, YouTube) to publish their work.	The class TikTok account is used as a platform for publication.	Student Interview
Significant Influence	BPjBL shows a positive and significant effect on digital literacy (71.2%).	—	

The findings demonstrate that BPjBL significantly enhanced various dimensions of students' digital literacy. They successfully produced digital outputs such as religious videos, Islamic quotes, and visualized concepts using Canva-based mind maps. Moreover, the majority of students (80%) acknowledged that the model improved their ability to search for and evaluate information using online platforms such as Google and ChatGPT. Teachers also reported high levels of student digital competence, noting students' initiative in utilizing digital tools and even assisting teachers who faced difficulties with ICT devices. Quantitative analysis further confirmed these insights, showing that BPjBL had a positive and statistically significant effect on digital literacy, with a contribution of 71.2% ($t = 19.512$; $p < 0.05$). These findings indicate that BPjBL not only facilitates the production of creative digital projects but also fosters deeper digital competence.

The emerging trend suggests that BPjBL has enabled students to transition from being passive consumers of technology to becoming active producers of religious digital content. Students demonstrated greater familiarity with accessing, processing, and disseminating information through widely used platforms such as TikTok and YouTube. At the same time, their technical skills—such as digital mind mapping and video editing—developed substantially in response to project demands. The fact that 80% of students perceived an increase in their digital literacy aligns closely with the statistical results, reinforcing the validity of the findings. Overall, the impact of BPjBL encompasses cognitive (information access and evaluation), technical (digital production), and affective (initiative, collaboration, and ethical digital practices) dimensions. This pattern highlights the potential of BPjBL in Islamic Education to cultivate a generation that is not only religiously grounded but also well-equipped with 21st-century digital literacy skills.

DISCUSSION

1. *Blended Project-Based Learning Design in Islamic Religious Education*

The findings of this study reveal that the design of Blended Project-Based Learning (BPjBL) in Islamic Religious Education integrates both conventional media, such as whiteboards, and digital media, including PowerPoint, LCD projectors, instructional videos, and e-learning platforms. However, its implementation is not uniform across classrooms. While some teachers consistently employ digital technology, others remain reliant on textbooks and oral explanations, supplemented only occasionally by videos. Students themselves reported that they frequently take notes from PowerPoint slides and use digital materials provided by teachers. This indicates that learning design in practice is shaped by teachers' pedagogical preferences as well as the availability of technological resources. Overall, the general trend points to the integration of digital media in instructional design,

suggesting that BPjBL in Islamic Religious Education (IRE) functions as a hybrid model that blends traditional and digital approaches to create more varied and relevant learning experiences in the digital age.

These design findings highlight the need for Islamic Education in the digital era to move beyond traditional methods alone. BPjBL requires teachers to act as facilitators who can integrate digital media to enhance student learning. The use of videos, e-learning, and social media not only strengthens engagement but also develops students' digital literacy skills (Ng, 2012). This aligns with Donnelly's (2019) argument that blended learning enables flexibility by balancing online theory with face-to-face practice. By bridging religious content with digital dimensions, Islamic Religious Education becomes more relevant to students' lived experiences. The primary function of BPjBL design, therefore, is to foster active and contextual learning that connects spiritual values with 21st-century competencies. In this way, the design serves not only to diversify media but also to strategically link religious education with global demands.

Variations in BPjBL design are influenced by teacher readiness, resource availability, and established pedagogical habits. Teachers who are confident with technology tend to create designs enriched with digital elements, while those with limited digital literacy or insufficient resources remain constrained (Putrawangsa & Hasanah, 2018). Consequently, digital integration is inconsistent across classrooms. Nonetheless, BPjBL requires the integration of technology from the design stage to ensure projects are relevant in the digital world (Holen et al., 2020). Prior studies emphasize that the quality of design strongly influences student engagement in project-based learning (Zhang & Ma, 2023). Inadequate integration risks lowering the quality of implementation, while a carefully structured design fosters greater engagement, as students perceive meaningful connections between digital content and project activities (Kizkapan & Bektas, 2017). Thus, a causal relationship emerges: the quality of design determines the effectiveness of implementation, underscoring the central role of teacher competence and institutional facilities in the success of BPjBL within Islamic Religious Education.

From a broader perspective, Suana et al. (2023), in a systematic review, observed that BPjBL in Indonesia continues to face challenges related to infrastructure and teacher preparedness. However, when such barriers are addressed, BPjBL has been shown to enhance critical thinking, digital literacy, and soft skills. Within the context of IRE, BPjBL can be adapted to focus on digital-based religious projects such as the development of Islamic preaching content, instructional videos, or interactive learning modules. This demonstrates that a strong design framework not only strengthens academic competencies but also supports the internalization of spiritual values through modern, relatable formats that resonate with younger generations.

In conclusion, this discussion confirms that variations in BPjBL design in Islamic Religious Education are largely determined by teachers' digital literacy, technological resources, and pedagogical orientations. The quality of design is a key determinant of implementation effectiveness, as it drives student engagement, motivation, and relevance. Theoretically, this finding underscores the importance of strengthening teachers' digital literacy through professional development and ensuring the provision of adequate infrastructure. Practically, it suggests that the integration of digital media into learning design should be systematic and intentional rather than optional or incidental. When implemented effectively, BPjBL in IRE not only enriches learning but also equips students with the dual competencies of religious literacy and digital literacy, both of which are essential for navigating the demands of the 21st century.

2. Implementation of *Blended Project-Based Learning* in Islamic Religious Education

The implementation of BPjBL in Islamic Religious Education (IRE) proceeds through three main stages: planning, implementation, and publication. In the planning stage, teachers and students collaboratively design the project, assign roles, and prepare both technical and material requirements. The implementation stage is characterized by active student engagement in simulations or real-life practices, such as a marriage contract rehearsal conducted in the school mosque, supported by intensive preparatory training. At the publication stage, students present their project outcomes through class social media platforms, such as TikTok and YouTube. Quantitative results indicate that student achievement was highest in implementation (83%), followed by planning (77%) and publication (70%). These findings suggest that students are more engaged in hands-on practice than in project preparation or dissemination. Overall, the implementation of

BPjBL in IRE is effective but still requires strengthening in systematic planning and in optimizing the publication process.

The planning stage requires further reinforcement to ensure systematic project design. Students' limitations in organizing projects highlight the need for teacher scaffolding. Prior studies confirm that careful planning is essential for the success of Project-Based Learning (PjBL), as it provides students with structure and direction (Nugroho et al., 2020; Tsai et al., 2022). In digital contexts, planning should also incorporate strategies for using online learning tools such as Google Classroom or Padlet, which have been shown to improve coordination and collaboration (Hwang et al., 2020).

The implementation stage, which achieved the highest score (83%), reflects students' preference for experiential learning. Thomas (2020) argues that PjBL is particularly effective because it allows students to learn through direct experience rather than abstract theory. In the context of IRE, practical worship activities or simulations of muamalah (religious interactions) bridge the gap between conceptual understanding and real-life application. Research by Putra and Yunianto (2022) also confirms that active participation in religious practices through PjBL fosters independence, collaboration, and stronger religious attitudes among students. Thus, the high level of achievement in this stage underscores the importance of experiential learning as a central dimension of project-based religious education.

By contrast, the publication stage recorded the lowest achievement (70%), primarily due to students' reluctance to share their work on personal social media accounts. Affective barriers, such as embarrassment or discomfort in publicly displaying religious identity online, were evident. This aligns with Fitriani's (2021) findings, which reported that not all students feel comfortable showcasing religious projects in digital spaces. Nevertheless, publication through social media is a strategic phase, as it expands the creative dissemination of Islamic values. Rais et al. (2020) argue that digital platforms can serve as effective channels for da'wah (Islamic outreach) while simultaneously strengthening students' digital literacy. To maximize this potential, pedagogical support should focus on building student confidence and utilizing dedicated class accounts to ensure a safer and more targeted publication process.

The broader implication of BPjBL implementation is the creation of active learning environments that connect theory with real-world practice. Kokotsaki et al. (2022) emphasize that student motivation in PjBL increases when learners are directly engaged in contextual experiences. In IRE, marriage contract simulations not only develop students' fiqh competence but also support the internalization of religious values through authentic practice (Alfiah & Rohman, 2021). Moreover, publication on social media creatively extends the reach of Islamic values (Rais et al., 2020). This resonates with Fitriani's (2021) findings that well-designed PjBL in IRE can foster motivation, tolerance, and value application when projects are socially relevant. Consequently, the main function of BPjBL is to cultivate students who are active, creative, communicative, and capable of conveying religious messages through digital media.

The implementation structure of BPjBL is influenced by teacher readiness, student motivation, and access to digital resources. The highest achievement during the implementation phase (83%) reflects the accessibility of experiential learning (Thomas, 2020), whereas limitations in planning (77%) stemmed from students' lack of systematic design skills, and the lower achievement in publication (70%) was shaped by affective barriers such as discomfort in sharing online (Fitriani, 2021). Prior studies suggest that BPjBL is most effective when the online phase is clearly linked to the project phase (Holen et al., 2020). The causal pattern emerging from this study indicates that successful implementation depends not only on teacher design but also on student collaboration and technological support. Teacher facilitation and access to digital tools were identified as key success factors. Consistent with Rahmatullah et al. (2021), teachers play a dual role: directing project management and guiding students in linking religious values with digital realities.

In conclusion, the implementation of BPjBL fosters active, creative, and communicative Islamic Religious Education. Students not only achieve academically but also demonstrate the ability to transmit religious messages in digital spaces. This aligns with the notion that BPjBL enhances digital literacy while cultivating essential 21st-century skills such as critical thinking, communication, and collaboration (Supriyanto et al., 2023). Therefore, BPjBL in IRE represents a

strategic effort to integrate religious values, digital competencies, and authentic experiences, making religious learning more meaningful and relevant for today's digital generation.

3. The Impact of *Blended Project-Based Learning* in Islamic Religious Learning

Research shows that BPjBL has significantly enhanced students' digital literacy. Students successfully produced digital products such as Islamic preaching videos, inspirational Islamic quotes, Canva-based mind maps, and cinematic videos published on YouTube and TikTok. Eighty percent of students reported that this learning approach improved their ability to access digital information via the internet, Google, and ChatGPT. Teachers also rated students' digital skills highly, citing examples such as their ability to create mind maps quickly and even assist senior teachers in using technology. Statistical analysis supported these findings, revealing that BPjBL had a significant positive effect on digital literacy of 71.2%. This evidence confirms that the BPjBL model not only supports project completion but also cultivates essential 21st-century digital competencies.

These findings align with research showing that integrating PjBL with digital technology improves skills in information searching, evaluation, and production (Guo et al., 2020). The implications of BPjBL are the development of dual competencies: digital literacy and mastery of religious values. Students become not only consumers but also producers of Islamic content disseminated through TikTok, YouTube, and other social media platforms. This makes religious learning more contextual and appealing to younger generations (Kusumawati et al., 2025). The role of BPjBL is to equip students with the ability to access, process, and publish information ethically, ensuring that Islamic values are present in the digital space (Ng, 2012). In line with Putrawangsa & Hasanah (2018), digital literacy in Islamic Religious Education entails the ability to search for information, reflect on values, and apply religious behavior in cyberspace. Thus, the impact of BPjBL is to prepare students for global challenges while maintaining their religious identity in a digital society.

Moreover, the findings highlight how BPjBL familiarizes students with technology use at every stage of learning—from planning and implementation to publication. This structure directly contributes to the development of sustainable digital skills. The positive effect of BPjBL on digital literacy stems from its requirement that students engage with technology throughout each project stage. From information gathering to content production and ethical dissemination, students consistently practice digital literacy. According to Holen et al. (2020), the effectiveness of PjBL increases when online theory is closely linked to real-life project practice. This explains why students reported significant improvements in their digital skills, supported by statistical results showing a 71.2% effect. The causal link suggests that the more actively students engage with digital media, the higher their digital literacy (Thomas, 2020). In the context of Islamic Religious Education, this structure not only enhances students' digital competence but also enables them to embody Islamic ethical values in cyberspace (Fitriani, 2021). Thus, the success of BPjBL in fostering digital literacy extends to students' social and spiritual development.

Overall, this study reinforces the literature demonstrating that BPjBL in Islamic Religious Education substantially improves digital skills while also supporting the internalization of religious values. Its success is influenced by factors such as effective technology integration, project relevance, and strong teacher–student collaboration. When these structures are maintained, BPjBL produces not only academic achievement but also a digitally literate and spiritually grounded young generation.

CONCLUSION

This study found that the application of Blended Project-Based Learning (BPjBL) in Islamic Religious Education (IRE) functions not merely as a method of delivering material but also as a transformative approach to enhancing students' digital literacy. A previously unexpected finding was that students showed greater enthusiasm and success during the project implementation stage than during the planning and publication stages. This highlights students' natural preference for hands-on, experiential learning. Despite the challenges of publishing their work on social media, students still managed to produce engaging and creative religious content, such as wedding ceremony simulation videos on YouTube and TikTok. This confirms that BPjBL strengthens not only cognitive aspects but also stimulates students' digital, social, and religious skills. BPjBL has thus proven effective as an integrative model that combines spiritual values with 21st-century competencies.

Theoretically, the results confirm prior findings that PjBL enhances 21st-century skills such as collaboration, creativity, and digital literacy (Thomas, 2020; Holen et al., 2020). However, this study contributes new insights by showing how the integration of PjBL in a blended format specifically strengthens Islamic Religious Education (IRE). Its novelty lies in positioning BPjBL as a pedagogical model that is not only relevant for general subjects but also highly effective for religious education. This research adds the important variable of digital literacy in a religious context, demonstrating that students can use technology to disseminate contextual Islamic messages. Thus, the study not only enriches the literature on PjBL and blended learning but also opens new pathways for interdisciplinary research linking religious education, digital technology, and 21st-century pedagogy.

The limitations of this study include its restricted scope, being conducted in a single high school, which limits the generalizability of the findings. Furthermore, student publications were mostly facilitated through class accounts rather than personal accounts, which restricted the analysis of individual impacts. Nevertheless, the study's strength lies in its mixed-methods approach, providing a comprehensive perspective through both quantitative and qualitative data, thereby enhancing the validity of the results. It also revealed students' affective dimensions of learning—an aspect rarely examined in previous studies. Future research should consider longitudinal studies across diverse schools and contexts to test the consistency of BPjBL's impact. Further exploration of teacher strategies for optimizing the digital publication phase is also recommended to ensure that Islamic Religious Education messages reach a wider digital audience.

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