

# Al Ilmu Article Writing Guidelines: Journal Islamic Education Literature Review on Digital-Based Islamic Education Learning Planning through the TPACK Framework: Implications for Information Technology Literacy and Learning

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## ABSTRACT

*The integration of information and communication technology (ICT) in Islamic Religious Education (PAI) necessitates a systematic approach to lesson planning. This article reviews literature on digital-based PAI lesson planning through the Technological Pedagogical Content Knowledge (TPACK) framework, emphasizing the synergy of technological, pedagogical, and Islamic content knowledge. Analyzing 25 academic sources from 2005 to 2025, the study explores how TPACK supports curriculum design, teaching strategies, and evaluation in PAI. A case study on developing a Semester Lesson Plan (RPS) for the 2-credit course Information Technology Literacy and Learning in the PAI undergraduate program illustrates TPACK's application. Findings indicate that TPACK enables educators to design effective, Islam-aligned learning, despite challenges like the digital divide and educators' technological literacy. Research gaps exist regarding advanced technologies like artificial intelligence (AI) and virtual reality (VR) in PAI. Recommendations include curriculum development and teacher training to enhance information technology literacy in PAI.*

## INTRODUCTION

Islamic Religious Education (PAI) plays a critical role in fostering moral character, theological understanding, and the practice of Islamic law within society. With the rapid advancement of digital technology, integrating information and communication technology (ICT) into PAI has become essential to enhance accessibility, quality, and student engagement in the learning process (Al-Amin, 2020; Arifin, 2021). However, challenges such as the digital divide, the accuracy of Islamic content, and educators' readiness and technological literacy pose significant barriers to optimizing ICT use in PAI (Nugroho, 2021).

The Technological Pedagogical Content Knowledge (TPACK) framework provides a holistic approach by integrating technological, pedagogical, and Islamic content knowledge. This enables educators to master both content and teaching methods while effectively incorporating technology to support meaningful and contextual learning

(Mishra & Koehler, 2006; Koehler & Mishra, 2009). TPACK has been widely adopted as a theoretical foundation for technology-based education, including PAI (Hidayat, 2022). Previous studies emphasize the importance of balancing content knowledge (CK), pedagogical knowledge (PK), and technological knowledge (TK) to create effective and relevant learning experiences (Muhtadi, 2019).

Innovative teaching strategies, such as blended learning, flipped classrooms, and project-based learning, have been successfully implemented in PAI with TPACK support (Garrison & Vaughan, 2008; Bergmann & Sams, 2012). Despite these advancements, research gaps remain, including limited studies on TPACK's application to advanced technologies like artificial intelligence (AI) and virtual reality (VR), insufficient evaluation of affective domains related to moral development, and limited teacher training in comprehensive TPACK mastery (Susanti, 2023; Zainuddin, 2023). This article aims to provide a comprehensive literature review on digital-based PAI lesson planning through the TPACK framework, mapping relevant theories, concepts, and findings. Additionally, it illustrates TPACK's practical application through a case study on developing a Semester Lesson Plan (RPS) for the *Information Technology Literacy and Learning* course in the PAI undergraduate program. The review seeks to offer recommendations for curriculum development and teacher training to effectively enhance digital literacy in PAI.

## **METHODOLOGY**

This study employs a qualitative approach through a systematic literature review to collect, evaluate, and synthesize findings from relevant academic sources on digital-based PAI lesson planning using the TPACK framework (Dick et al., 2015). Literature searches were conducted on international and national databases, including Google Scholar, Scopus, JSTOR, and local repositories. Keywords used included "TPACK PAI," "digital PAI learning," "information technology literacy," and "Islamic lesson planning," covering publications from 2005 to 2025 (Rahman, 2021). Selection criteria encompassed articles in Indonesian and English that addressed TPACK, digital literacy, and lesson planning in the context of PAI. From the screening process, 25 sources were selected for in-depth analysis (Susilo, 2022). Data analysis was conducted thematically, grouping the literature into four main themes: TPACK's theoretical foundation, TPACK components in PAI lesson planning, implementation challenges, and TPACK-based teaching strategies. The analysis involved manual coding to identify thematic patterns, strengths, and weaknesses in each study (Arifin, 2021). The synthesized literature served as the basis for developing a case study on the Semester Lesson Plan (RPS) for the PAI undergraduate program, illustrating the practical application of TPACK in digital-based curriculum design (Ismail, 2020).

## **RESULTS AND DISCUSSION**

### **Literature Review Summary**

The TPACK framework developed by Mishra and Koehler (2006) is a primary foundation for technology integration in education. TPACK emphasizes the synergy among three core knowledge domains: content knowledge (CK), pedagogical knowledge (PK), and technological knowledge (TK) necessary for educators to design effective and relevant learning in the digital era (Koehler & Mishra, 2009). In the context of Islamic Religious Education, CK encompasses Islamic aspects such as creed, ethics, jurisprudence, and Islamic history that must be delivered authentically and contextually

(Muhtadi, 2019). Studies show that applying TPACK in IRE supports innovative strategies like blended learning, flipped classrooms, and project-based learning, which enhance learner engagement and understanding (Garrison & Vaughan, 2008; Bergmann & Sams, 2012). Digital tools such as Google Classroom, Canva, and digital Quran applications strengthen learning implementation while maintaining Islamic values (Sari, 2020). However, significant implementation challenges remain. The digital divide, especially in remote areas, restricts technology access (Nugroho, 2021). Educator ICT literacy is low, requiring intensive and ongoing training (Ismail, 2020). Validity and accuracy of Islamic content in digital media is critical to prevent misinformation and bias (Fauzi, 2023). Additionally, digital ethics such as plagiarism and misinformation need incorporation to build good digital character (Zainuddin, 2023). Evaluation tends to focus on cognitive domains, with affective and psychomotor domains—essential in religious education—receiving insufficient attention (Susilo, 2022). The use of advanced technologies like AI and VR in IRE is still minimal, presenting research and development opportunities (Susanti, 2023). Overall, TPACK holds significant potential to strengthen digital-based IRE learning planning and implementation. However, development in educator training, affective and psychomotor domain integration, and advanced technology use is necessary to meet contemporary challenges (Rahman, 2021).

### **Case Study: TPACK Application in RPS**

The case study of the Semester Learning Plan (RPS) development for the Information Technology and Learning Literacy course (2 credits) in the IRE undergraduate program demonstrates practical TPACK application (Ministry of Religious Affairs RI, 2022). The RPS includes 16 meetings, covering lectures, practicum, quizzes, assignments, and exams, employing various learning technologies. In CK, topics like digital ethics and jurisprudence of worship based on sharia sources are central (Hidayat, 2022). PK is applied via discussions, projects, and interactive quizzes to promote active learning (Pratama, 2022). Technologies used include Google Classroom, Canva, and Kahoot to support digital literacy (Sari, 2020). The interaction of technology and content (TCK) is seen in using digital Quran apps to reinforce recitation (Ismail, 2020). The flipped classroom approach (TPK) enhances practicum effectiveness (Bergmann & Sams, 2012), while pedagogy-content integration (PCK) is realized in discussions on digital manners containing Islamic values (Arifin, 2021). The synergy of all three (TPACK) is embodied in major assignments creating IRE learning media combining technology, pedagogy, and Islamic content (Susilo, 2022). Assessment uses rubrics evaluating CK (IRE content relevance), TK (technology function), PK (pedagogical creativity), and TPACK (integration synergy) (Rahman, 2021). Although technology is simple, the RPS design balances technology and Islamic values well. Blended learning is considered an effective solution to digital divides despite infrastructure limitations restricting advanced technology use (Garrison & Vaughan, 2008).

### **Discussion and Implications**

The TPACK framework is widely recognized as a crucial foundation in digital-based IRE learning planning (Mishra & Koehler, 2006). This approach enables educators to synergistically integrate technology, pedagogy, and Islamic content, ensuring learning is effective, relevant, and aligned with Islamic Sharia values (Koehler & Mishra, 2009). TPACK addresses digital era challenges such as technology access disparity and low ICT

literacy among educators and learners (Nugroho, 2021). TPACK-based strategies like blended and project-based learning enhance access and student engagement (Pratama, 2022). Blended learning, combining face-to-face and online modalities, offers flexibility especially in areas with limited technology infrastructure (Garrison & Vaughan, 2008). Meanwhile, project-based learning fosters active learner involvement in creatively and critically developing Islamic content while honing technology and collaboration skills (Thomas, 2000). However, key barriers include limited structured and continuous training for educators to master integrated technology, pedagogy, and content knowledge (Ismail, 2020). Many IRE teachers struggle to use learning technologies effectively, necessitating comprehensive professional development (Susanti, 2023).

Second, current TPACK-based learning evaluation focuses mostly on cognitive aspects, neglecting affective and psychomotor domains critical in religious education. IRE demands development and accurate assessment of character (affective) and worship skills (psychomotor) to truly shape learner behavior per Islamic values (Muhtadi, 2019). Third, despite using simple tools like Canva, Google Classroom, and digital Quran apps, literature reveals limited utilization of advanced technologies such as AI and VR. These technologies can provide more interactive, immersive, and personalized learning experiences, signaling a need for intensified research and development (Zainuddin, 2023). The RPS case study demonstrates that even simple technologies can positively impact learning if well-integrated with Islamic content and pedagogical strategies (Hidayat, 2022).

## CONCLUSION

The TPACK framework is a robust and relevant theoretical foundation for digital-based PAI lesson planning (Mishra & Koehler, 2006). By integrating technological, pedagogical, and Islamic content knowledge, it enables educators to design effective learning experiences that align with religious values and meet digital-era demands (Koehler & Mishra, 2009). The literature highlights TPACK's support for innovative strategies, such as blended learning and project-based learning, which enhance access, engagement, and the creative development of Islamic content (Garrison & Vaughan, 2008; Pratama, 2022; Thomas, 2000). The RPS case study illustrates TPACK's practical application, demonstrating that simple technologies can be impactful when well-integrated with Islamic content and pedagogy (Sari, 2020). However, challenges such as the digital divide, limited teacher training, and insufficient evaluation of affective and psychomotor domains persist (Nugroho, 2021; Susilo, 2022). Further exploration of advanced technologies like AI and VR is needed to enhance PAI learning (Zainuddin, 2023). Recommendations include integrating TPACK into PAI curriculum design to balance Islamic content, innovative pedagogy, and digital technology, with digital literacy as a core competency (Kementrian Agama RI, 2022). Intensive, ongoing teacher training should cover learning technologies, digital pedagogy, and contextual Islamic content integration (Arifin, 2021). Evaluation systems should assess cognitive, affective, and psychomotor domains using digital portfolios, observations, and self-reflection (Susilo, 2022). Research and application of AI and VR should be promoted to create interactive, personalized, and immersive learning experiences (Zainuddin, 2023). Finally, Islamic-based digital ethics education should be integrated to foster responsible digital citizenship, addressing copyright, privacy, and misinformation prevention (Rahman, 2021).

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