



Digital Teaching Readiness among Islamic Education Students: The Role of Competence, Self-Regulation, and Media Use

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DOI: <https://doi.org/10.61987/jemr.v5i5.2672>

ABSTRACT

Keywords:

Digital Competence,
Digital Media
Utilization, Digital
Teaching Readiness,
Learning Regulation

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This study aims to examine the influence of digital competence and learning regulation on digital teaching readiness through digital media utilization among preservice teachers in an Islamic teacher education program. A quantitative explanatory design was employed, involving 50 undergraduate students selected through a saturated sampling technique. Data were collected using closed-ended Likert-scale questionnaires and analyzed with Partial Least Squares-Structural Equation Modeling (PLS-SEM). The findings indicate that digital competence and learning regulation positively and significantly influence digital media utilization. Digital competence also has a positive and significant direct effect on digital teaching readiness, whereas learning regulation does not show a significant direct effect. Furthermore, digital media utilization significantly enhances digital teaching readiness but does not significantly mediate the relationships between digital competence, learning regulation, and digital teaching readiness. The structural model explains 26.6% of the variance in digital media utilization and 43.2% of the variance in digital teaching readiness. These findings imply that teacher education programs should prioritize strengthening students' digital competence and expanding meaningful digital media utilization to better prepare future teachers for effective digital teaching in contemporary educational environments.

Article History:

Received: April 2026; Revised: May 2026; Accepted: June 2026

Please cite this article in APA style as:

Nuryani, M., & Hidayat, T. (2026). Digital Teaching Readiness among Islamic Education Students: The Role of Competence, Self-Regulation, and Media Use. *Journal of Educational Management Research*, 5(5), 5304-5319.

INTRODUCTION

The rapid advancement of digital technology has fundamentally transformed educational practices and reshaped the competencies expected of future teachers. Beyond functioning as a technological innovation, digitalization has become an essential element in creating more flexible, interactive, and student-centered learning environments. As educational institutions

increasingly integrate digital platforms, learning management systems, multimedia resources, and online collaboration tools, prospective teachers are required to possess adequate digital capabilities to facilitate meaningful learning experiences. This transformation is particularly important because technology integration is closely associated with improved learning quality when supported by appropriate pedagogical strategies. Empirical evidence demonstrates that digital learning positively influences students' academic achievement, although its effectiveness depends on instructional design, educational context, and learner engagement (Koishybekova et al., 2025). Likewise, the use of instructional videos and educational games has been shown to significantly improve conceptual understanding and student participation in classroom activities (Silander et al., 2025). These findings indicate that digital technology is no longer an optional instructional supplement but a strategic educational necessity, making the investigation of factors shaping digital teaching readiness increasingly important for ensuring sustainable educational quality in the digital era.

Digital teaching readiness is theoretically grounded in the integration of technological, pedagogical, and self-regulated learning perspectives. The Technological Pedagogical Content Knowledge (TPACK) framework explains that effective technology integration depends on teachers' ability to combine technological knowledge, pedagogical knowledge, and content knowledge in a coherent instructional process (Mishra & Koehler, 2006). Complementing this perspective, the SAMR model proposes that educational technology should progress beyond merely substituting conventional teaching tools toward transforming learning experiences through innovative and interactive instructional practices (Puentedura, 2006). From the perspective of digital competence, the DigCompEdu framework emphasizes that educators require not only operational technological skills but also the capacity to evaluate digital resources, design technology-supported instruction, facilitate learners, and employ digital technologies responsibly in professional practice (Redecker, 2017). Furthermore, Self-Regulated Learning theory explains that students who effectively plan, monitor, and evaluate their learning activities are more capable of utilizing digital resources productively and adapting to technology-rich learning environments. Recent evidence further indicates that emerging technologies, including artificial intelligence and generative AI, increasingly require prospective teachers to strengthen their digital competence to support curriculum innovation and instructional quality (Guillén-Gámez et al., 2026). Collectively, these theoretical perspectives suggest that digital competence, learning regulation, and digital media utilization constitute complementary foundations for developing digital teaching readiness among future teachers.

Despite the widespread integration of digital technologies into higher education, many preservice teachers remain inadequately prepared to

implement technology in pedagogically meaningful ways. The increasing availability of digital platforms, learning applications, social media, and artificial intelligence tools does not automatically translate into effective digital teaching practices. Instead, prospective teachers frequently encounter challenges related to selecting appropriate digital resources, integrating technology with instructional objectives, maintaining student engagement, and ensuring that technology use supports meaningful learning rather than merely replacing conventional teaching methods. These challenges are particularly critical in Islamic teacher education, where digital instruction must simultaneously achieve pedagogical effectiveness while preserving religious values, character formation, and ethical learning practices. Previous studies have also highlighted persistent barriers to technology integration, including limited institutional support, insufficient professional preparation, inadequate technological infrastructure, time constraints, privacy concerns, and uncertainty regarding the educational quality of digital content (Saiz-González et al., 2025; Wong, 2026). Furthermore, digital media require continuous critical evaluation because not every technological innovation contributes positively to learning outcomes (Pötzsch et al., 2023). Consequently, understanding the factors that shape digital teaching readiness has become increasingly important for preparing future teachers who can integrate digital technology effectively, critically, and pedagogically within contemporary educational environments.

Previous studies have consistently demonstrated that digital competence constitutes one of the primary determinants of effective technology integration in education. Rather than referring solely to technical proficiency, digital competence encompasses the ability to access, evaluate, create, communicate, and manage digital information while applying technology in pedagogically meaningful and ethically responsible ways (Redecker, 2017). Within higher education, students possessing stronger digital competence are more likely to engage actively with digital learning resources, develop technology-enhanced instructional materials, and utilize various digital platforms to support collaborative learning. Recent evidence indicates that media competence extends beyond technological operation to include content production, communication, aesthetics, and critical understanding of digital environments (Andrade-Vargas et al., 2024). Likewise, digital platforms such as Instagram have been shown to facilitate Islamic education through interactive features that encourage communication, content sharing, and learner engagement (Laily et al., 2022). Emerging technologies, including artificial intelligence and generative AI, further reinforce the necessity of advanced digital competence for curriculum planning and instructional innovation (Guillén-Gámez et al., 2026). Collectively, these studies suggest that digital competence substantially influences how prospective teachers utilize digital media, which ultimately contributes to the development of digital teaching readiness. Nevertheless, most existing studies

primarily emphasize technology utilization or learning outcomes, while the mechanisms through which digital competence translates into digital teaching readiness remain insufficiently explained.

Although previous studies have provided valuable insights into technology-enhanced learning, important conceptual and empirical gaps remain unresolved. Existing research has demonstrated that self-regulated learning positively influences students' acceptance of e-learning and their ability to manage digital learning environments (Barz et al., 2024). Likewise, studies have highlighted that digital well-being and self-regulation help students minimize digital distractions and promote reflective engagement in technology-supported learning (Biedermann et al., 2024; Bowles, 2024; Natakutoong et al., 2026). Other investigations have predominantly examined the effectiveness of digital media in improving learning outcomes or explored technology integration within Islamic education contexts (Koishybekova et al., 2025; Silander et al., 2025; Siregar et al., 2025; Azman et al., 2025; Setiyawan & Syamsuddin Nurul Iman, 2026; Ardhani et al., 2026). However, these studies generally investigate the variables independently and rarely explain how digital competence and learning regulation jointly contribute to digital teaching readiness through digital media utilization among preservice Islamic education teachers. Consequently, limited empirical evidence is available regarding the mediating role of digital media utilization in connecting individual competencies with professional teaching readiness. Addressing this gap represents the principal novelty of the present study by proposing and empirically testing an integrated structural model that simultaneously examines these relationships, thereby extending the current understanding of digital teacher preparation within contemporary teacher education.

Based on the preceding discussion, this study addresses the question of how digital competence and learning regulation influence digital teaching readiness through digital media utilization among preservice Islamic education teachers. Drawing upon the TPACK framework, DigCompEdu, and Self-Regulated Learning theory, this study argues that digital competence provides the technological and pedagogical foundation required to integrate digital technologies into instructional practice, while learning regulation enables prospective teachers to manage, monitor, and optimize their learning experiences in technology-rich environments. Furthermore, digital media utilization is expected to function as a behavioral mechanism through which these individual capabilities are translated into practical teaching readiness. Accordingly, this study hypothesizes that digital competence and learning regulation positively influence digital media utilization and digital teaching readiness, and that digital media utilization mediates these relationships. The findings are expected to contribute theoretically by extending the integration of digital competence, self-regulated learning, and technology integration frameworks into a

comprehensive structural model of digital teaching readiness. Practically, the results are anticipated to provide empirical evidence for improving teacher education curricula through strengthening digital competence, fostering self-regulated learning, and promoting meaningful digital media utilization to prepare future teachers for effective technology-enhanced instruction in the digital era.

RESEARCH METHODS

This study employed a quantitative approach with an explanatory research design to examine the causal relationships among digital competence, learning regulation, digital media utilization, and digital teaching readiness. The explanatory design was selected because it enables the testing of theoretically derived hypotheses and the examination of direct and indirect relationships among latent variables within a structural model. This approach is appropriate for investigating the predictive mechanisms underlying digital teaching readiness and for providing empirical evidence regarding the proposed conceptual framework. The study was conducted in the Islamic Religious Education Study Program at a private higher education institution in Indonesia. The research site was selected purposively because the study program prepares prospective Islamic education teachers who are expected to integrate digital technologies into future teaching practices, making it a relevant context for examining digital teaching readiness. The research population consisted of all fourth- and sixth-semester undergraduate students, totaling 50 respondents. Since the population size was relatively small and entirely accessible, a saturated sampling technique was employed, allowing all members of the population to participate in the study.

Data were collected using a structured questionnaire with a five-point Likert scale ranging from strongly disagree to strongly agree. The questionnaire was designed to measure four latent constructs: digital competence as the first independent variable, learning regulation as the second independent variable, digital media utilization as the mediating variable, and digital teaching readiness as the dependent variable. The measurement indicators were adapted from established theoretical frameworks and previous empirical studies to ensure conceptual consistency and construct validity. The digital competence construct assessed participants' abilities to access, evaluate, create, and utilize digital technologies effectively, whereas learning regulation measured students' capacity to plan, monitor, and evaluate their own learning processes. Digital media utilization captured the extent to which students employed digital technologies for academic and instructional purposes, while digital teaching readiness reflected their preparedness to integrate digital media into future teaching practices. Prior to large-scale data collection, the questionnaire was

reviewed to ensure the clarity, relevance, and appropriateness of each measurement item.

Data analysis was conducted using descriptive statistics and Partial Least Squares–Structural Equation Modeling (PLS-SEM). Descriptive statistics were used to summarize respondents' characteristics and describe the distribution of responses for each research variable. PLS-SEM was employed because of its suitability for predictive research involving multiple latent constructs and mediation analysis with relatively small sample sizes. The measurement model was evaluated through outer loading, Average Variance Extracted (AVE), Cronbach's alpha, composite reliability, Fornell-Larcker criterion, Heterotrait-Monotrait ratio (HTMT), and Variance Inflation Factor (VIF) to assess convergent validity, discriminant validity, reliability, and multicollinearity. Subsequently, the structural model was evaluated using R-square, f-square, path coefficients, t-statistics, p-values, total effects, and specific indirect effects. Statistical significance was determined through the bootstrapping procedure. The trustworthiness of the quantitative findings was ensured by establishing construct validity and internal consistency reliability through the measurement model evaluation, thereby confirming that the research instrument accurately and consistently measured the intended constructs before testing the hypothesized relationships.

RESULTS AND DISCUSSION

Results

Respondent Characteristics

The study involved 50 undergraduate students enrolled in the Islamic Religious Education Study Program. All fourth- and sixth-semester students were included in the study using a saturated sampling technique. Of the total respondents, 30 students (60%) were in the fourth semester and 20 students (40%) were in the sixth semester. The inclusion of students from these two academic levels ensured that respondents had experienced teacher education courses and digital learning activities relevant to the investigated constructs.

Table 1. Respondent Characteristics

Semester	Frequency	Percentage (%)
Fourth Semester	30	60.0
Sixth Semester	20	40.0
Total	50	100.0

Descriptive Statistics

Descriptive statistics were calculated to describe respondents' perceptions

of digital competence, learning regulation, digital media utilization, and digital teaching readiness. As presented in Table 2, Digital Teaching Readiness obtained the highest mean score ($M = 3.69$), followed by Digital Competence ($M = 3.54$), Learning Regulation ($M = 3.41$), and Digital Media Utilization ($M = 3.37$). These findings indicate that respondents generally reported favorable perceptions across all research constructs.

Table 2. Descriptive Statistics

Variable	Mean	SD	Minimum	Maximum
Digital Competence	3.54	0.66	2.00	5.00
Learning Regulation	3.41	0.88	1.88	4.88
Digital Media Utilization	3.37	0.82	1.75	5.00
Digital Teaching Readiness	3.69	0.74	2.13	5.00

Measurement Model Assessment

The measurement model was assessed by examining indicator reliability, convergent validity, discriminant validity, and internal consistency reliability.

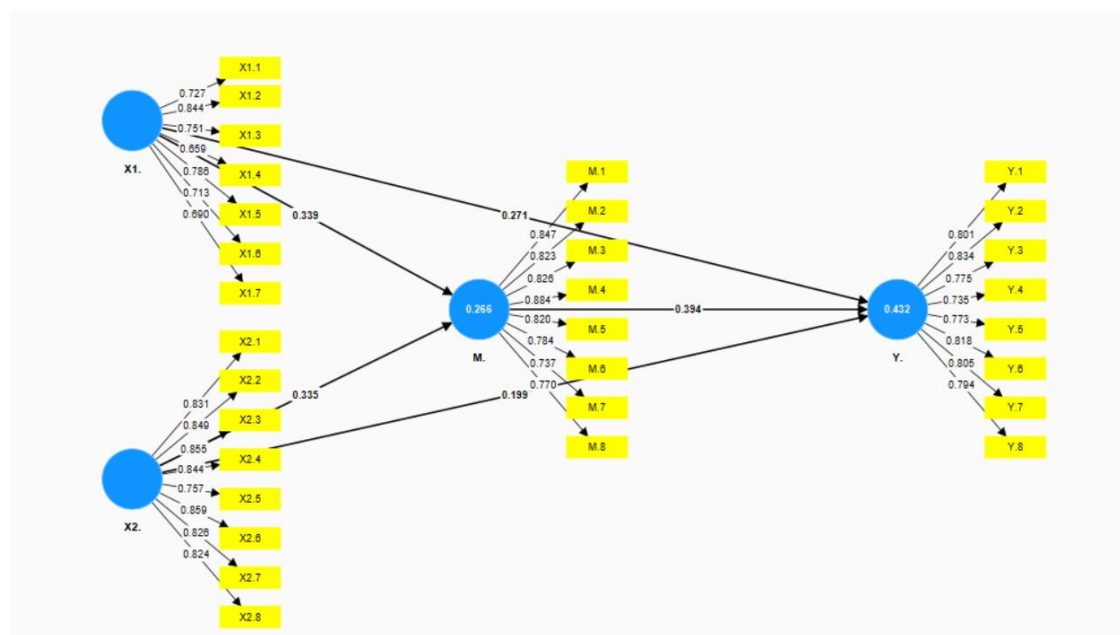


Figure 1. Measurement Model

All indicator loadings ranged from **0.659 to 0.884**, indicating satisfactory indicator reliability. Although two indicators of Digital Competence ($X1.4 = 0.659$ and $X1.7 = 0.690$) were slightly below the preferred threshold of 0.70, they exceeded the minimum acceptable value of 0.60 and were therefore retained. Construct reliability and convergent validity are presented in Table 3.

Table 3. Reliability and Convergent Validity

Construct	Loading Range	Cronbach's Alpha	Composite Reliability	AVE
Digital Competence	0.659–0.844	0.864	0.894	0.549
Learning Regulation	0.757–0.859	0.936	0.947	0.691
Digital Media Utilization	0.737–0.884	0.926	0.939	0.660
Digital Teaching Readiness	0.735–0.834	0.915	0.931	0.628

Cronbach's alpha values ranged from **0.864 to 0.936**, while Composite Reliability values ranged from **0.894 to 0.947**, exceeding the recommended threshold of 0.70. Likewise, all AVE values were greater than 0.50, confirming satisfactory convergent validity.

Discriminant validity was assessed using the Heterotrait–Monotrait Ratio (HTMT). All HTMT values were below the recommended threshold of 0.85, indicating that each construct was empirically distinct from the others. Furthermore, all Variance Inflation Factor (VIF) values were below 5.00, indicating the absence of multicollinearity among predictor constructs.

Structural Model Assessment

After confirming the adequacy of the measurement model, the structural model was evaluated.

The explanatory power of the model was assessed using the coefficient of determination (R^2). Digital Competence and Learning Regulation explained **26.6%** of the variance in Digital Media Utilization ($R^2 = 0.266$). Meanwhile, Digital Competence, Learning Regulation, and Digital Media Utilization jointly explained **43.2%** of the variance in Digital Teaching Readiness ($R^2 = 0.432$).

The effect size analysis indicated that Digital Media Utilization had a moderate effect on Digital Teaching Readiness ($f^2 = 0.200$). Digital Competence also demonstrated a moderate effect on Digital Media Utilization ($f^2 = 0.152$), whereas Learning Regulation showed a small-to-moderate effect ($f^2 = 0.149$). The direct effects of Digital Competence and Learning Regulation on Digital Teaching Readiness were relatively small ($f^2 = 0.109$ and 0.059 , respectively).

The model achieved an SRMR value of **0.093**, indicating an acceptable model fit for PLS-SEM. All VIF values remained below 5.00, suggesting that multicollinearity was not a concern in the structural model.

Table 4. Structural Model Assessment

Endogenous Variable	R^2	Adjusted R^2
Digital Media Utilization	0.266	0.234
Digital Teaching Readiness	0.432	0.395

Hypothesis Testing

The proposed hypotheses were tested using the bootstrapping procedure. The results are presented in Table 5.

Table 5. Hypothesis Testing

Hypothesis	Path	β	t	p	Decision
H1	Digital Competence → Digital Media Utilization	0.339	3.578	<0.001	Supported
H2	Learning Regulation → Digital Media Utilization	0.335	2.626	0.009	Supported
H3	Digital Competence → Digital Teaching Readiness	0.271	2.037	0.042	Supported
H4	Learning Regulation → Digital Teaching Readiness	0.199	1.447	0.148	Not Supported
H5	Digital Media Utilization → Digital Teaching Readiness	0.394	2.727	0.006	Supported
H6	Digital Competence → Digital Media Utilization → Digital Teaching Readiness	0.133	1.889	0.059	Not Supported
H7	Learning Regulation → Digital Media Utilization → Digital Teaching Readiness	0.132	1.532	0.126	Not Supported

The results indicate that four hypotheses (H1, H2, H3, and H5) were supported. Digital Competence significantly influenced Digital Media Utilization ($\beta = 0.339$, $p < 0.001$), while Learning Regulation also had a significant positive effect on Digital Media Utilization ($\beta = 0.335$, $p = 0.009$). Digital Competence showed a significant direct effect on Digital Teaching Readiness ($\beta = 0.271$, $p = 0.042$), whereas the direct effect of Learning Regulation on Digital Teaching Readiness was not statistically significant ($\beta = 0.199$, $p = 0.148$). In addition, Digital Media Utilization significantly influenced Digital Teaching Readiness ($\beta = 0.394$, $p = 0.006$). The mediation analysis further showed that Digital Media Utilization did not significantly mediate the effects of either Digital Competence ($\beta = 0.133$, $p = 0.059$) or Learning Regulation ($\beta = 0.132$, $p = 0.126$) on Digital Teaching Readiness.

Discussion

The findings demonstrate that digital competence constitutes the strongest determinant of digital teaching readiness among preservice Islamic Religious Education teachers. Digital competence was found to exert a significant direct influence on both digital media utilization and digital teaching readiness, indicating that students with higher levels of technological knowledge and skills are more capable of integrating digital resources into academic activities and preparing themselves for technology-enhanced teaching. This finding is

consistent with the Digital Competence Framework for Educators (DigCompEdu) proposed by Redecker (2017), which conceptualizes digital competence as a multidimensional construct encompassing not only technical proficiency but also the ability to select, evaluate, create, and pedagogically integrate digital resources into learning environments. Similarly, the finding supports the Technological Pedagogical Content Knowledge (TPACK) framework (Mishra & Koehler, 2006), which emphasizes that effective technology integration requires the intersection of technological, pedagogical, and content knowledge rather than technological skills alone. Recent empirical studies also reinforce this conclusion. Andrade-Vargas et al. (2024) reported that digital competence in higher education extends beyond operational skills to include communication, content production, ethical awareness, and critical media literacy, while Guillén-Gámez et al. (2026) argued that the rapid emergence of artificial intelligence and generative AI has increased the urgency of strengthening digital competence among future teachers. Therefore, the present findings provide further evidence that digital competence functions as a foundational capability enabling prospective Islamic Religious Education teachers to adapt to increasingly digital educational environments.

Another important finding concerns the significant contribution of learning regulation to digital media utilization, although its direct influence on digital teaching readiness was not statistically significant. This pattern suggests that self-regulated learning primarily operates as an internal learning mechanism that encourages students to use digital technologies more purposefully, yet it does not automatically translate into readiness to teach in digital environments. These findings are consistent with self-regulated learning theory, which explains that learners who can set goals, monitor their progress, regulate motivation, and evaluate learning outcomes are generally more capable of engaging with digital learning resources effectively. Bowles (2024) emphasized that self-regulation becomes increasingly essential in digital learning environments because learners continuously encounter distractions arising from social media, entertainment platforms, and multitasking behaviors. Likewise, Barz et al. (2024) demonstrated that self-regulated learning positively predicts students' acceptance of e-learning technologies through perceived usefulness and ease of use. However, the insignificant direct relationship observed in this study indicates that digital teaching readiness requires competencies extending beyond personal learning management. Teaching readiness involves pedagogical decision-making, instructional design, classroom management, assessment strategies, and the ability to transform digital resources into meaningful learning experiences.

Consequently, self-regulated learning alone may be insufficient unless accompanied by practical teaching experiences and opportunities to integrate technology within authentic instructional contexts.

The findings further reveal that digital media utilization significantly predicts digital teaching readiness, confirming that frequent and meaningful engagement with digital technologies contributes substantially to the development of teaching preparedness. Students who regularly use digital media for searching academic resources, preparing instructional materials, collaborating with peers, creating presentations, and participating in online learning environments tend to demonstrate greater confidence in implementing technology-supported instruction. This finding aligns with the SAMR model developed by Puentedura (2006), which explains that technology integration evolves from simple substitution toward modification and redefinition of learning activities. The result also corresponds with recent evidence reported by Touche et al. (2025), who found that social media and digital platforms increasingly facilitate collaborative and student-centered learning in higher education. Within Islamic Religious Education, previous studies by Laily et al. (2022) and Melinda et al. (2024) similarly demonstrated that digital platforms and interactive learning media improve instructional quality and student engagement. Collectively, these findings suggest that digital teaching readiness is cultivated not merely through theoretical understanding of educational technology but through continuous opportunities to apply digital media in authentic pedagogical practices. Accordingly, teacher education institutions should prioritize experiential learning activities that encourage students to design, implement, and evaluate technology-supported instruction throughout their professional preparation.

The mediation analysis provides another noteworthy finding by demonstrating that digital media utilization did not significantly mediate the relationships between digital competence, learning regulation, and digital teaching readiness. Although both indirect relationships exhibited positive coefficients, the mediation effects failed to reach statistical significance. This result indicates that the development of digital teaching readiness cannot be explained solely through students' frequency of using digital media. Instead, readiness appears to emerge from a broader combination of technological competence, pedagogical capability, and authentic teaching experiences. This finding partially diverges from the assumptions underlying the TPACK and DigCompEdu frameworks, which generally propose that technological competence is translated into instructional readiness through technology

integration practices. One possible explanation is that respondents had already demonstrated relatively high levels of digital competence and digital teaching readiness, whereas digital media utilization remained at a moderate level. Consequently, digital media use may not yet have functioned as a sufficiently strong mechanism linking digital competence and learning regulation with teaching readiness. This interpretation is supported by Pötzsch et al. (2023), who argued that effective educational technology integration depends not only on technology access but also on the critical evaluation and pedagogical adaptation of digital media. Likewise, Saiz-González et al. (2025) emphasized that institutional support, technological infrastructure, professional training, and instructional opportunities remain essential prerequisites for transforming digital competence into effective teaching practices.

Taken together, the present findings enrich the existing literature by demonstrating that digital teaching readiness is a multidimensional construct influenced by technological, behavioral, and pedagogical dimensions rather than by isolated individual factors. While digital competence directly strengthens both digital media utilization and teaching readiness, learning regulation primarily contributes by encouraging more purposeful engagement with digital technologies instead of directly improving instructional preparedness. Meanwhile, digital media utilization itself serves as an important experiential factor that enhances teaching readiness but is insufficient to fully explain the relationships among the investigated constructs. These findings therefore complement previous studies that have predominantly examined digital competence, self-regulated learning, or technology acceptance independently. By integrating these variables within a single structural model, this study offers a more comprehensive understanding of how future Islamic Religious Education teachers develop readiness to implement technology-enhanced instruction. Consequently, the study extends the application of the TPACK, DigCompEdu, SAMR, and self-regulated learning frameworks within the context of Islamic teacher education, an area that has received comparatively limited empirical attention.

From a practical perspective, the findings suggest that teacher education institutions should move beyond emphasizing technical digital literacy alone and instead establish learning environments that integrate digital competence, pedagogical practice, and reflective learning experiences. Strengthening digital competence should be accompanied by structured opportunities for students to design digital instructional materials, develop interactive learning resources, conduct technology-supported microteaching sessions, and evaluate digital

learning activities in authentic classroom contexts. At the same time, self-regulated learning should be fostered through project-based learning, collaborative assignments, reflective journals, and continuous formative feedback to help students develop independent learning habits while effectively managing digital distractions. Since digital media utilization significantly contributes to teaching readiness, integrating learning management systems, educational applications, artificial intelligence tools, and interactive multimedia into regular coursework would provide students with meaningful practical experiences before entering professional teaching practice. Such initiatives would enable preservice teachers not only to become competent technology users but also to develop the pedagogical confidence required to employ digital technologies effectively and ethically in future classrooms.

Overall, this study contributes theoretically by confirming the complementary roles of digital competence, self-regulated learning, digital media utilization, and digital teaching readiness within a unified conceptual framework. Unlike many previous studies that focused on direct relationships among these constructs, the present research simultaneously examined both direct and indirect pathways, thereby providing a more comprehensive explanation of the mechanisms underlying digital teaching readiness among preservice Islamic Religious Education teachers. The findings indicate that strengthening technological competence alone is insufficient unless supported by continuous pedagogical experiences and meaningful engagement with digital learning environments. Accordingly, this study highlights the importance of integrating technological, pedagogical, and self-regulatory competencies within teacher education curricula to prepare future educators for the rapidly evolving demands of digital education. These contributions offer both theoretical insights for advancing research on digital teacher preparation and practical recommendations for higher education institutions seeking to enhance the quality of teacher education in increasingly technology-driven learning environments.

CONCLUSION

This study demonstrates that digital teaching readiness among preservice Islamic Religious Education teachers is primarily shaped by digital competence and digital media utilization, while learning regulation contributes indirectly by enhancing students' engagement with digital media rather than directly influencing their readiness to teach in digital environments. These findings highlight that developing future teachers' readiness for digital instruction requires not only technical proficiency but also meaningful opportunities to

apply digital technologies within authentic pedagogical contexts. Theoretically, this study contributes to the literature by integrating the TPACK, DigCompEdu, SAMR, and Self-Regulated Learning frameworks into a single structural model, thereby providing a more comprehensive explanation of the mechanisms underlying digital teaching readiness in Islamic teacher education. The findings also extend previous research by demonstrating that digital media utilization does not significantly mediate the relationships between digital competence, learning regulation, and digital teaching readiness, suggesting that practical pedagogical experiences remain indispensable for translating technological capabilities into instructional preparedness. Practically, the results emphasize the importance of embedding technology-integrated teaching practices, digital content development, and reflective learning activities throughout teacher education curricula to strengthen future teachers' digital readiness. Nevertheless, this study is limited by its relatively small sample size and its focus on a single higher education context, which may restrict the generalizability of the findings. Future research is therefore encouraged to involve larger and more diverse samples across multiple institutions, incorporate additional determinants such as technological self-efficacy, institutional support, digital resilience, and artificial intelligence literacy, and employ longitudinal or mixed-method approaches to obtain a deeper understanding of how digital teaching readiness develops over time.

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