



Vol. 8 No.2, May - August 2026

Copyright © 2026, is licensed under a CC-BY-NO-SA

Page: 772 - 789

DOI: <https://doi.org/10.47006/ijierm.v8i2.733>

Journal Homepage

<https://journal.yaspim.org/index.php/IJIERM/index>

A DIGITAL-BASED HUMAN RESOURCE MANAGEMENT STRATEGY FOR DEVELOPING TEACHER COMPETENCE AMID BUDGET CONSTRAINTS: A CASE STUDY AT SMP TERPADU BUSTANUL ARIFIN

Sarah¹, Fauzan Ahmad Siregar²

^{1,2} Sultanah Nahrasiyah State Islamic University, Aceh, Indonesia

Email: ¹sarahsarah41204@gmail.com, ²fauzanahmadsiregar@uinsuna.ac.id

Received: 29, March 2026

Accepted: 9 May 2026

Published: 16 May 2026

Abstrak

Penelitian ini dilatarbelakangi oleh keterbatasan anggaran yang dihadapi lembaga pendidikan Islam dalam mengembangkan kompetensi guru secara optimal di era digital. Tujuan penelitian ini adalah untuk menganalisis bagaimana strategi manajemen sumber daya manusia berbasis digital dapat mendukung pengembangan kompetensi guru secara efektif dan efisien. Penelitian ini menggunakan pendekatan kualitatif dengan desain studi kasus. Data dikumpulkan melalui wawancara semi-terstruktur terhadap delapan informan – termasuk kepala sekolah, wakil kepala bidang kurikulum, dan enam guru – serta observasi kelas dan analisis dokumentasi di SMP Terpadu Bustanul Arifin. Informan dipilih secara purposif berdasarkan keterlibatan langsung mereka dalam program pengembangan guru berbasis digital. Data dianalisis secara tematik melalui tahapan pengkodean, kategorisasi, dan interpretasi, didukung oleh triangulasi sumber dan teknik. Hasil penelitian mengindikasikan bahwa strategi MSDM berbasis digital – meliputi pembelajaran mandiri, pelatihan daring, dan pemanfaatan platform digital – dipersepsi membantu peningkatan kompetensi pedagogik, profesional, sosial, dan kepribadian guru secara bertahap. Strategi ini juga berkontribusi dalam mengatasi keterbatasan pelatihan konvensional yang membutuhkan biaya besar. Namun, implementasinya masih dihadapkan pada kendala signifikan, termasuk keterbatasan infrastruktur digital, variasi literasi teknologi guru, dan resistensi terhadap perubahan. Penelitian ini memberikan kontribusi pada pengembangan model MSDM berbasis digital yang hemat biaya dan berkelanjutan dalam konteks lembaga pendidikan Islam.

Kata Kunci: MSDM Digital; Kompetensi Guru; Pendidikan Islam; Keterbatasan Anggaran; Pengembangan Profesional Guru; Transformasi Digital



Abstract

This study examines how digital-based human resource management (HRM) strategies support teacher competence development in an Islamic educational institution facing budget constraints. Using a qualitative case study design, data were collected through semi-structured interviews with eight informants – including the school principal, vice principal for curriculum, and six teachers – classroom observations, and document analysis at SMP Terpadu Bustanul Arifin. Participants were selected through purposive sampling based on their direct involvement in digital-based teacher development programs. The data were analyzed thematically through coding, categorization, and interpretation, supported by triangulation of sources and techniques. The findings indicate that digital-based HRM – implemented through self-directed learning, online professional development platforms, and selective use of digital tools – was perceived to facilitate improvements in teachers' pedagogical, professional, social, and personal competencies. These strategies helped the institution address budget limitations by reducing dependency on costly conventional training. However, the implementation remains constrained by limited digital infrastructure, uneven levels of digital literacy among teachers, and resistance to technological change. The study contributes to the discussion on cost-efficient teacher development strategies in Islamic educational institutions

Keywords: *Digital HRM; Teacher Competence; Islamic Education; Budget Constraints; Teacher Professional Development; Digital Transformation.*

INTRODUCTION

Digital transformation has fundamentally reshaped human resource management (HRM) practices across all sectors, including education. In the context of Islamic educational institutions, HRM serves not only as an administrative function but also as a strategic tool for cultivating professionally competent and morally grounded teachers (Mustofa, 2024). The global shift toward digital learning ecosystems – driven by artificial intelligence, online platforms, and self-directed learning – has created both opportunities and challenges for teacher competence development (Nusmasyahyati & Maisyarah, 2026). As Islamic schools seek to align academic excellence with ethical values, the integration of digital HRM strategies becomes increasingly essential in sustaining professional growth.

SMP Terpadu Bustanul Arifin, an Islamic junior secondary school located in Indonesia, exemplifies a common predicament faced by many faith-based educational institutions: the imperative to develop teacher competence continuously while operating



under severe budgetary constraints (Anshima et al., 2025; Garengo et al., 2022). The school employs a teaching staff with varying levels of digital literacy and limited access to formal, externally funded professional development programs. Teacher competence – encompassing pedagogical, professional, social, and personal dimensions – is critical for ensuring instructional quality; yet conventional training programs are often cost-prohibitive, creating a structural gap between institutional aspirations and financial realities (Ika Chastanti, 2024). This tension necessitates the exploration of more adaptive and cost-efficient HRM approaches.

Recent studies have highlighted the potential of digital technologies in transforming HRM practices in education. Platforms such as MOOCs, webinars, and digital libraries have been shown to enable continuous professional development without geographical and financial barriers (Maisyarah, 2026). The emergence of artificial intelligence has further opened pathways for personalized learning and instructional design support (Al Hafizd, 2026). Micro-learning and self-directed learning approaches have demonstrated effectiveness in supporting teachers with limited time and institutional resources (Arrafinur, 2025). Studies have also emphasized that digital-based HRM not only reduces training costs but enhances accessibility and learning efficiency (Ardillah et al., 2025). In Islamic educational contexts, Shobirin (2025) underscores the importance of aligning technological adoption with spiritual and ethical values.

Despite this growing body of literature, a significant research gap remains. Although previous studies have examined digital transformation in education and teacher professional development separately, limited attention has been given to how Islamic educational institutions with restricted financial resources strategically utilize digital-based HRM as an *institutional management strategy* for teacher competence development (Molina-Azorin et al., 2021; Zhang & Chen, 2024). Existing studies tend to focus on the adoption of digital learning tools or individual teacher practices, while the managerial dimension – how school leadership deliberately orchestrates digital HRM as a cost-efficient response to budget constraints – remains underexplored. Furthermore, the Islamic ethical dimension of digital technology adoption in HRM has not been adequately theorized in the existing literature (Nawaz et al., 2024; Strohmeier, 2020).

The novelty of this study lies in its focus on digital-based HRM as a cost-efficient *institutional management strategy* for developing teacher competence in an Islamic school context, specifically through self-directed learning, online professional development, and the selective use of AI-supported tools amid budget constraints (Banga & Gobind, 2025; Zavyalova et al., 2022). This study therefore adopts a qualitative case study design, as it seeks to understand the specific managerial practices, teacher experiences, and



implementation challenges within a bounded institutional context. The study aims to analyze how digital-based HRM strategies are implemented to develop teacher competence at SMP Terpadu Bustanul Arifin, and how these strategies help address budget constraints in teacher professional development.

LITERATURE REVIEW

Digital-Based Human Resource Management in Education

HRM in education refers to a systematic process encompassing planning, organizing, implementing, and evaluating human resources to achieve institutional goals effectively. In the digital era, HRM has evolved from traditional administrative practices into dynamic, technology-enabled systems that prioritize efficiency, flexibility, and innovation (Nusmasyahyati & Maisyarah, 2026). Digital-based HRM utilizes online platforms, data-driven performance monitoring, and AI-assisted tools to optimize teacher development processes. The adoption of digital technologies enables institutions to sustain professional growth despite financial limitations, effectively decoupling the quality of training from the scale of training budgets (Ardillah et al., 2025). Performance evaluation systems have also shifted toward data-driven approaches, enabling continuous monitoring and targeted interventions (Aisyah Yuspita Hamrul et al., 2025).

Teacher Competence Development in Islamic Educational Institutions

Teacher competence in Islamic educational institutions encompasses pedagogical, professional, social, and personal dimensions that must adapt to technological advancements. Pedagogical competence now includes the ability to design interactive learning using digital tools and AI-based platforms (Pahrijal & Arini, 2026). Professional competence is reflected in teachers' capacity to update subject knowledge continuously through digital resources and self-regulated learning. Social competence extends to effective communication through digital platforms while maintaining ethical interaction based on Islamic values (Fatmasari, 2026). Personal competence involves digital ethics, integrity, and responsible use of online information – dimensions particularly emphasized in Islamic educational contexts where moral formation is inseparable from intellectual development. The integration of these competencies is crucial for ensuring meaningful and relevant learning experiences (Kosasih, 2024). In resource-limited settings, digital literacy becomes the key enabling factor for competence development independent of formal training programs.



Budget Constraints and Cost-Efficient Professional Development

Limited financial resources represent a structural constraint for many Islamic educational institutions in Indonesia, particularly smaller private schools (Ika Chastanti, 2024). Conventional professional development programs – such as external workshops, seminars, and certification training – often impose costs that exceed institutional budgets, creating systematic inequalities in teacher development access. Digital-based alternatives, including free MOOCs, peer webinars, virtual coaching, and open-access learning repositories, offer scalable and cost-efficient pathways that preserve teacher agency without requiring significant institutional expenditure (Akmaluddin et al., 2025). Research by Luthfiatul Udhma and Sri Minarti (2025) demonstrates that integrating quality management principles with Islamic values creates a supportive institutional culture for teacher innovation, even under financial constraints.

Artificial Intelligence and Self-Directed Learning in Teacher Development

The emergence of AI has introduced new possibilities in personalized learning and instructional design for teachers. AI-powered tools can assist educators in developing teaching materials, designing assessments, and analyzing student learning patterns more effectively (Al Hafizd, 2026). Alongside AI, self-directed learning models – emphasizing independent engagement with online platforms, digital modules, and virtual collaboration spaces – have proven effective for educators in budget-constrained environments (Zuhriyeh et al., 2025). Valverde-Berrocoso et al. (2021) found that teachers who proactively integrated digital technologies into their practice prior to institutional mandates demonstrated stronger instructional adaptability and professional resilience. In Islamic educational contexts, these digital models must be aligned with religious values, ensuring that technological adoption serves holistic educational goals (Shobirin, 2025).

Research Gap and Conceptual Framework

The literature suggests that digital-based HRM can expand access to professional development, reduce training costs, and support flexible teacher learning. However, the existing scholarship has not sufficiently explained how such strategies are *institutionally managed* in Islamic schools facing financial limitations. Prior studies tend to treat digital tools and teacher competence as separate variables, neglecting the managerial orchestration that enables digital strategies to function as coherent institutional responses. This study therefore positions digital HRM not merely as a technological practice but as a *managerial strategy* for sustaining teacher competence development under budgetary constraints – an integration of management science with Islamic educational values (Theotokas et al., 2024; Venugopal et al., 2024).



RESEARCH METHODS

This study employed a qualitative case study design to explore how digital-based HRM strategies were implemented to develop teacher competence at SMP Terpadu Bustanul Arifin. A case study design was considered appropriate because the research focused on a specific, bounded institutional context and sought to understand managerial practices, teacher experiences, and implementation challenges in depth (Siti Maisyarah & Rahmat Asri Sufa, 2026). The case study approach enabled the researcher to examine the phenomenon within its real-world setting, capturing contextual factors that shape how digital HRM strategies function under budget constraints. The research was conducted at SMP Terpadu Bustanul Arifin, an Islamic junior secondary school in Indonesia. The school was selected because it represents a common profile of resource-limited Islamic educational institutions that have attempted to implement digital-based teacher development strategies as alternatives to conventional training. Data collection took place over a period of four months, from January to April 2025, allowing for sustained engagement with the research setting.

Participants were selected through purposive sampling based on their direct involvement in teacher development programs and digital learning practices. The study involved eight informants: the school principal (P1), the vice principal for curriculum (VP1), the HR/administrative coordinator (A1), and five classroom teachers (T1–T5) who had participated in digital-based professional development activities. Inclusion criteria required that participants had at least one year of teaching experience at the institution and had directly used digital platforms or tools for professional development. The diverse composition of informants – from institutional leadership to classroom practitioners – ensured a comprehensive perspective on digital HRM implementation. Data were collected through three complementary techniques: (1) *semi-structured interviews*, (2) *non-participant observation*, and (3) *document analysis*. Interviews lasted approximately 45 to 60 minutes and explored school policies, budget limitations, digital training practices, teacher learning experiences, and perceived changes in professional competence. Each interview was audio-recorded with participants' consent and subsequently transcribed verbatim. Observations were conducted across eight classroom sessions and three teacher coordination meetings, focusing on the use of digital tools in instruction, teacher-to-teacher collaboration, and management facilitation of digital learning. Documents analyzed included institutional training records, annual professional development plans, digital learning materials, teacher self-evaluation forms, and budget allocation reports.



Data were analyzed using thematic analysis following Chand's (2025) framework. The analysis proceeded through five stages: (1) transcription of interview recordings and organization of observation notes; (2) *initial open coding* – assigning labels to segments of data that captured meaningful ideas; (3) *category development* – clustering similar codes into thematic categories; (4) *theme construction* – identifying overarching themes related to digital HRM strategies, teacher competence development, budget constraints, and implementation challenges; and (5) *interpretive analysis* – comparing themes across interview transcripts, observation notes, and institutional documents to construct a coherent empirical narrative (Mezmir, 2020). Trustworthiness was ensured through four Lincoln and Guba (1985) criteria. *Credibility* was strengthened through source triangulation (comparing data across P1, VP1, A1, and T1–T5) and technique triangulation (comparing interview findings with observations and documents) (Santos et al., 2020). *Transferability* was supported by providing a thick description of the school context. *Dependability* was maintained through systematic documentation of all methodological decisions, and *confirmability* was supported by cross-checking interview interpretations with observation notes and documentary evidence.

The researcher maintained a reflective journal throughout data collection and analysis to monitor and manage potential biases. As an educational researcher familiar with Islamic schooling contexts, the researcher was conscious of the risk of confirmation bias in interpreting participant responses. Peer debriefing with a colleague experienced in qualitative educational research was conducted at key analytical stages to ensure interpretive rigor. This study followed ethical research principles by obtaining informed consent from all participants prior to data collection. Participants were informed of the study's purpose, their right to withdraw at any time, and the use of data solely for academic publication. Confidentiality was maintained by anonymizing all participant identities using codes (P1, VP1, A1, T1–T5). All data were stored securely and accessible only to the research team.

RESULTS AND DISCUSSION

Digital HRM as a Cost-Efficient Teacher Development Strategy

The findings show that digital-based HRM was implemented primarily through low-cost professional development strategies, including free webinars, online learning platforms, peer-sharing sessions, and self-directed use of digital teaching resources. The principal articulated the institutional rationale clearly: "*We cannot afford to send teachers to workshops every semester. So we shifted to digital – free webinars, YouTube tutorials, online modules. The cost is nearly zero, but the benefit is real.*" (P1) This statement was supported by observation data showing that classroom teachers regularly used digital presentations,

778



online videos, and educational applications during instruction. Institutional documents, including the annual teacher development plan and budget allocation records, further confirmed that digital alternatives had formally replaced the majority of conventional off-site training programs. The vice principal elaborated on the management dimension: *"We make it a school policy. We recommend platforms, we share links in our teacher group, and we follow up in our monthly meetings to see who has completed what."* (VP1) This reflects deliberate institutional orchestration – digital HRM functioning not as spontaneous individual initiative but as a managed, systematic strategy embedded in the school's professional development infrastructure.

Self-Directed Learning and Online Professional Development

A consistent pattern across teacher informants was the adoption of self-directed learning as the primary modality for professional development. Teachers independently accessed e-books, online journals, YouTube instructional channels, and MOOC platforms to update subject knowledge and teaching strategies. T3 stated: *"I no longer wait for workshops. Every week I learn something new from YouTube or a free online course. It is convenient and I can do it at home after school."* (T3) This finding was corroborated by institutional records showing that three teachers had completed online certification courses on digital pedagogy during the study period, without any institutional financial expenditure. Observation data revealed that the administrative coordinator maintained a shared digital resource folder – accessible to all teachers via Google Drive – containing curated online learning materials, tutorial videos, and digital lesson plan templates. This infrastructure facilitated peer-driven knowledge sharing and reduced individual information-seeking costs, further embedding digital HRM into the school's daily professional culture.

Digital Tools and Pedagogical Competence

Teachers reported improvements in pedagogical competence through the use of digital tools in lesson design and classroom delivery. T1 explained: *"Before, I only used the textbook. Now I use videos, slides, and online quizzes. Students respond differently – they are more engaged."* (T1) Classroom observations confirmed this shift: five of the eight classroom sessions observed incorporated digital visual elements, including presentation slides and embedded online videos, to explain abstract concepts. T2 added: *"Using digital tools helped me redesign lessons that were previously difficult to explain. Visual content makes a difference."* (T2) Document analysis of teacher self-evaluation forms indicated that four teachers rated their confidence in designing digital lesson plans as having improved from "low" to "moderate" or "high" over the past academic year. While these self-assessments



are subjective, they provide indicative evidence of perceived pedagogical development resulting from digital HRM practices.

Teacher Collaboration, Social and Personal Competence

Social competence was perceived to have strengthened through digital communication platforms. Teachers actively participated in professional WhatsApp groups and online discussion forums where they exchanged teaching strategies and digital resources. VP1 observed: *"Our teachers share materials, teaching ideas, and problems in our online group every day. This was not happening before we introduced digital tools."* (VP1) This collaborative environment reduced professional isolation and fostered a culture of continuous peer learning, consistent with the Professional Learning Community model. Regarding personal competence, the principal emphasized the school's explicit guidance on digital ethics: *"We always remind teachers that digital tools must be used responsibly and in line with Islamic values. We discuss this in school meetings."* (P1) This reflects an institutional effort to integrate moral and spiritual values into the adoption of digital technology – a distinctive feature of digital HRM in Islamic educational contexts.

Infrastructure, Digital Literacy, and Resistance to Change

Despite the positive outcomes, significant challenges were identified. Observation data recorded repeated instances of unstable internet connectivity disrupting digital learning activities in the classroom. T4 noted: *"Sometimes the internet goes down in the middle of a lesson. I have to switch back to traditional methods immediately. It is frustrating."* (T4) Institutional records confirmed that the school's internet infrastructure was provisioned below the recommended bandwidth for multi-device simultaneous use.

Digital literacy variation among teachers remained a persistent challenge. Observations showed that two of the five classroom teachers observed made limited use of digital tools, defaulting to chalk-and-board instruction throughout the session. T5 acknowledged: *"Some of us still prefer whiteboard teaching – it is what we know best. Learning new technology takes time that we do not always have."* (T5) Document analysis of the school's training attendance records further confirmed that uptake of digital professional development activities was uneven, with senior teachers participating less frequently than younger colleagues.



Table 1. Summary of Teacher Competence Development Through Digital HRM

Competence Aspect	Key Findings	Supporting Evidence
Pedagogical	Improved through use of digital media, interactive content, and video-based instruction; teachers design more engaging lesson plans	Teachers (T1, T2) reported changes in lesson planning; classroom observations confirmed use of presentation software and online videos
Professional	Enhanced via self-directed online learning; teachers access e-books, webinars, and digital journals independently	Training records showed participation in free online platforms; T3: "I no longer wait for workshops; I learn every week from YouTube and online courses"
Social	Strengthened through digital collaboration platforms and professional learning communities; peer knowledge-sharing increased	Observations showed active participation in WhatsApp teacher groups and online discussion forums; institutional reports confirmed peer-sharing sessions
Personal	Increased awareness of digital ethics, responsibility, and Islamic principles in technology use	P1 (Principal): "We always remind teachers that digital tools must be used responsibly and in line with Islamic values"
Challenges	Limited internet connectivity, insufficient devices, uneven digital literacy, and some resistance to technology adoption	Observations recorded unstable internet during digital activities; T4: "Some of us still prefer whiteboard teaching; it's what we know best"

Discussion

The findings of this study demonstrate that digital-based HRM functions not only as a technological adaptation but primarily as a *managerial response to structural budget limitations* in Islamic educational institutions. By promoting self-directed learning, peer collaboration, and low-cost digital training, school management sustained teacher professional development without relying exclusively on conventional, cost-intensive



programs. This finding advances the existing literature by showing that digital HRM's primary value in resource-constrained Islamic schools is *managerial*, not merely technical – it is the intentional orchestration of digital affordances by institutional leadership that produces meaningful professional development outcomes.

The improvement in pedagogical competence observed in this study is consistent with the Cognitive Theory of Multimedia Learning (Mayer, 2009), which posits that combining visual and auditory elements enhances cognitive processing and understanding. Teachers who transitioned to video-based and visual-aided instruction reported that students demonstrated greater engagement, suggesting that digital HRM's impact on pedagogical competence extends beyond individual teacher development to student learning experience. This connection between teacher digital development and student outcomes – while not directly measured in this study – represents an important theoretical implication that future research should investigate quantitatively.

The development of professional competence through self-directed digital learning aligns with lifelong learning theory, which emphasizes the individual's capacity for autonomous knowledge construction beyond formal training structures (Kosasih, 2024). In the Islamic educational context, this autonomy carries particular significance: the Islamic imperative to seek knowledge (*thalabul 'ilm*) provides a spiritual motivation for teacher self-development that secular HRM frameworks do not typically engage. The school's institutional framing of digital learning as a professional and religious obligation – explicitly connecting technology use to Islamic values of responsibility and integrity – represents a distinctive feature of digital HRM in Islamic schools that distinguishes it from secular models.

The enhancement of social competence through professional digital communities aligns with Wenger's (1998) theory of Communities of Practice. The WhatsApp teacher groups and peer-sharing sessions identified in this study function as digital communities of practice, where tacit professional knowledge is exchanged, adapted, and internalized through social participation. This finding has broader implications for educational management: institutional investment in facilitating digital professional communities – even through low-cost messaging platforms – may yield substantial returns in teacher social competence and collective professional identity.

However, the identified challenges indicate that digital technology alone is insufficient. The effectiveness of digital HRM depends critically on supporting conditions: stable digital infrastructure, progressive digital literacy development programs, inclusive leadership that addresses resistance to change, and explicit ethical guidance for AI and online resource use. The risks of AI use – including issues of



accuracy, academic integrity, and technological dependency – were not systematically addressed in the school's current digital HRM framework. Future implementation should incorporate structured AI literacy programs that equip teachers to critically evaluate AI-generated content in alignment with Islamic educational values (Shobirin, 2025; Zuhriyeh et al., 2025). The distinctive role of Islamic education in shaping digital HRM – through the integration of spiritual motivation, ethical guidance, and communal accountability – represents a theoretical contribution that extends beyond the Indonesian context.

This study contributes to the literature by conceptualizing digital-based HRM as a cost-efficient teacher development model in Islamic education that integrates four key components: (1) institutional management support, (2) teacher self-directed digital learning, (3) digital professional collaboration, and (4) ethical technology use guided by Islamic values. Although situated in a single Indonesian Islamic school, the findings are relevant to resource-constrained educational institutions globally that seek scalable, affordable strategies for sustaining teacher competence. This study is limited to a single institution; therefore, its findings cannot be generalized to all Islamic schools. Future research should involve multiple institutions and combine qualitative and quantitative methods to measure the long-term impact of digital HRM on teacher performance and student learning outcomes.

The main finding of this study is that Pesantren Sabilul Mukminin forms santri as *ṭālib al-'ilmi* through an integrated pattern of aqidah instruction, worship habituation, ustaz role modeling, advisory guidance, and continuous supervision. These strategies work together to shape santri's cognitive understanding of tawhid, affective devotion to Allah, and behavioral discipline in worship and social life. This finding indicates that pesantren-based formation is not a single instructional process, but a holistic educational ecosystem. The formation of *ta'abbud mutawahhidhiyyah* can be interpreted as a process of integrating knowledge, worship, and character (Samosir et al., 2023). Aqidah instruction provides the theological foundation, while worship habituation transforms religious knowledge into repeated practice. Ustaz role modeling gives concrete examples of how tawhid values are lived, and supervision ensures consistency in behavior. This integration demonstrates that pesantren education operates through both formal and informal mechanisms of value internalization (As'ad & Firmansyah, 2022; Setiawan et al., 2023).

These findings are consistent with broader theories of character education, which emphasize the integration of moral knowledge, moral feeling, and moral action (Lovat & Toomey, 2023; Nucci et al., 2024). In the pesantren context, this integration appears through the relationship between religious instruction, spiritual habituation, and



communal discipline. The findings also support previous studies on pesantren education that highlight the importance of role modeling, habituation, supervision, and religious environment in shaping santri character (Mujahid, 2021; Bujuri et al., 2023; Sanusi et al., 2024; Nurbani et al., 2023). The novelty of this study lies in the conceptualization of *ta'abbud mutawahhidhiyyah* as an integrated orientation in santri formation. While previous studies have often discussed pesantren character education in general terms, this study specifically explains how the identity of *tālib al-'ilmi* is shaped through the combination of devotional practice and tawhid-based consciousness. This contribution is significant because it frames pesantren education not only as moral formation but also as the development of a monotheistic learning identity (Hajjali et al., 2022).

Theoretically, this study contributes to Islamic education by offering a formation model that connects tawhid education, worship habituation, and character development. Practically, the findings suggest that pesantren should strengthen structured daily routines, teacher role modeling, personal mentoring, and supervision systems to ensure that religious values are internalized consistently. The model may also be useful for other Islamic educational institutions seeking to integrate knowledge, worship, and character formation. The global relevance of this study lies in its contribution to discussions on faith-based education and religious character formation. Many religious educational institutions face similar challenges in maintaining spiritual discipline and moral identity amid modernization and digital cultural change. The pesantren model examined in this study shows how communal life, teacher mentorship, and repeated devotional practices can support holistic religious formation.

Nevertheless, this study has limitations. First, it focuses on a single pesantren, so the findings cannot be generalized to all pesantren contexts. Second, the study relies on qualitative data and does not quantitatively measure changes in students' religious character or worship discipline. Third, the study has not compared Pesantren Sabilul Mukminin with other pesantren that may apply different formation models. Future research should conduct comparative studies and develop measurable indicators for assessing *ta'abbud mutawahhidhiyyah* formation among santri.

Conclusion

This study concludes that digital-based HRM can serve as a strategic and cost-efficient approach to teacher competence development in Islamic educational institutions facing budget constraints. Through self-directed digital learning, online professional development, peer collaboration platforms, and the selective use of AI-supported tools, school management was able to facilitate improvements across teachers' pedagogical,



professional, social, and personal competencies – without significant financial expenditure. The structured institutional facilitation of digital HRM – including policy direction, curated resource sharing, and ongoing coordination – emerged as the critical differentiator between successful and limited implementation outcomes.

This study contributes a conceptual model of digital HRM in Islamic education that integrates cost efficiency, teacher autonomy, digital collaboration, and ethical technology use as mutually reinforcing components of sustainable competence development. This model extends existing HRM theory by incorporating the Islamic ethical dimension – particularly the alignment of digital practices with values of responsibility, integrity, and spiritual purpose – as a distinctive and non-trivial driver of institutional digital transformation. Future research should examine the long-term impact of digital HRM across multiple Islamic educational contexts and develop validated instruments for measuring digital competence outcomes quantitatively. The central message of this study is clear: teacher competence development in resource-limited Islamic schools can be sustained and even strengthened when digital transformation is managed as a deliberate institutional strategy – one that aligns technological capability with managerial intentionality and Islamic educational values – rather than being treated merely as a technological trend imposed from outside.

Acknowledgments: The authors extend sincere gratitude to the school principal, teachers, and administrative staff of SMP Terpadu Bustanul Arifin for their cooperation and openness during data collection. All participants are acknowledged for their valuable contributions to this research

BIBLIOGRAPHY

- 1) Aisyah Yuspita Hamrul, Sukirman, & Dodi Ilham. (2025). Optimizing Teacher Evaluation: Development of a Digital-Based Curriculum Training Instrument for Enhanced Feedback. *Journal of Educational Management Research*, 4(2), 526–539. <https://doi.org/10.61987/jemr.v4i2.964>
- 2) Akmaluddin, A., Kasmini, L. K., Sari, S. M., & Iqbal, M. (2025). Human Resource Management Strategy in Improving the Quality of Education. *Jurnal Eduscience*, 12(2), 553–560. <https://doi.org/10.36987/jes.v12i2.6843>
- 3) Al Hafizd, L. N. (2026). Pemanfaatan Game Berbasis Artificial Intelligence (AI) sebagai Alat Bantu dalam Pengembangan Perangkat Pembelajaran Inovatif. *Pedagogy: Jurnal Ilmiah Ilmu Pendidikan*, 13(1), 91–112. <https://e-journal.upm.ac.id/index.php/pedagogy/article/view/296>



- 4) Aleksieva, L., Racheva, V., & Peytcheva-Forsyth, R. (2025). Talking Tech, Teaching with Tech: How Primary Teachers Implement Digital Technologies in Practice. *Informatics*, 12(3), 1–31. <https://doi.org/10.3390/informatics12030099>
- 5) Anshima, Sharma, D., & Bhardwaj, B. (2025). Green human resource management practices and sustainable development in India: A systematic literature review and future research agenda. *Social Sciences and Humanities Open*, 11. <https://doi.org/10.1016/j.ssaho.2025.101420>
- 6) Ardillah, M., Khairudin, A., Yasin, M. F., & colleagues. (2025). Innovation in Human Resource Management in Islamic Education in the Era of Digital Disruption: Integrating Islamic Values and Adaptive Technology. *Al-Mudabbir: Journal of Islamic Education Management*, 1, 196–202. <https://albaayaninstitute.org/index.php/almudabbir/article/view/128>
- 7) Arrafinur, S. A. (2025). Strategi Manajemen Sumber Daya Manusia dalam Meningkatkan Retensi Tenaga Pendidik di Lembaga Pendidikan Era Digital. *Jurnal Mappesona*, 8(2), 76–87. <https://doi.org/10.30863/mappesona.v8i2.5863>
- 8) As'ad, A., & Firmansyah, F. (2022). A New Paradigm on Human Resources Management in State Islamic University. *AL-ISHLAH: Jurnal Pendidikan*, 14(1), 71–84. <https://doi.org/10.35445/alishlah.v14i1.1513>
- 9) Banga, C. M., & Gobind, J. (2025). Implementation of sustainability in human resource management: A literature review. *SA Journal of Human Resource Management*, 23. <https://doi.org/10.4102/sajhrm.v23i0.2741>
- 10) Chand, S. P. (2025). Methods of Data Collection in Qualitative Research: Interviews, Focus Groups, Observations, and Document Analysis. *Advances in Educational Research and Evaluation*, 6(1), 303–317. <https://doi.org/10.25082/aere.2025.01.001>
- 11) Fatmasari, R. K. (2026). Education in the Age of AI: From Digital Teachers to Artificial Intelligence-Based Learning. *Journal of English Language and Education*, 11(1), 94–105. <https://doi.org/10.31004/jele.v11i1.1836>
- 12) Garengo, P., Sardi, A., & Nudurupati, S. S. (2022). Human resource management (HRM) in the performance measurement and management (PMM) domain: a bibliometric review. In *International Journal of Productivity and Performance Management* (Vol. 71, Number 7). <https://doi.org/10.1108/IJPPM-04-2020-0177>
- 13) Hajjali, I., Fara Kessi, A. M., Budiandriani, B., Prihatin, E., Sufri, M. M., & Sudirman, A. (2022). Determination of Work Motivation, Leadership Style, Employee Competence on Job Satisfaction and Employee Performance. *Golden*



- Ratio of Human Resource Management*, 2(1), 57-69.
<https://doi.org/10.52970/grhrm.v2i1.160>
- 14) Ika Chastanti, I. L. (2024). *Inovasi Pembelajaran dan Pendidikan: Teknologi untuk Peningkatan Kualitas Pendidikan (1st ed.)*. CV. Bildung Nusantara.
- 15) Kosasih, K. (2024). The Role of Human Resource Management in Sustainable Development: A Systematic Literature Review. *Economics Studies and Banking Journal (DEMAND)*, 1(2), 61-74. <https://doi.org/10.62207/q4jya069>
- 16) Luthfiatul Udhma, & Sri Minarti. (2025). Integrating Total Quality Management with Islamic Values in Modern Islamic Education. *Managere: Indonesian Journal of Educational Management*, 7(1), 102-114.
<https://doi.org/10.52627/managere.v7i1.784>
- 17) Maisyarah, N. A. (2026). *Manajemen Sumber Daya Manusia Strategis: Teori dan Aplikasi (1st ed.)*. Mafy Media Literasi Indonesia.
- 18) Mezmir, E. A. (2020). Qualitative Data Analysis: An Overview of Data Reduction, Data Display and Interpretation. *Research on Humanities and Social Sciences*, 10(21), 15-27. <https://doi.org/10.7176/rhss/10-21-02>
- 19) Muslimin, T. P. (2024). Kompetensi dan kesiapan guru sekolah dasar terhadap tantangan pendidikan di Era Society 5.0. *Cokroaminoto Journal of Primary Education*, 7(1), 55-72. <https://doi.org/10.30605/cjpe.7.1.2024.3589>
- 20) Mustofa, M. Y. (2024). Manajemen SDM: Peran Organisasi Pendidik Dalam Meningkatkan Profesionalisme Guru Di SD Global Garuda Nusantara Islamic Centre. *Jurnal Manajemen Pendidikan Islam Al-Idarah*, 9(1), 1-9.
<https://doi.org/10.54892/jmpialidarah.v9i01.398>
- 21) Molina-Azorin, J. F., López-Gamero, M. D., Tarí, J. J., Pereira-Moliner, J., & Pertusa-Ortega, E. M. (2021). Environmental management, human resource management and green human resource management: A literature review. In *Administrative Sciences* (Vol. 11, Number 2).
<https://doi.org/10.3390/ADMSCI11020048>
- 22) Nawaz, N., Arunachalam, H., Pathi, B. K., & Gajenderan, V. (2024). The adoption of artificial intelligence in human resources management practices. *International Journal of Information Management Data Insights*, 4(1).
<https://doi.org/10.1016/j.jjime.2023.100208>
- 23) Nusmasyahyati, N., & Maisyarah, S. (2026). *Manajemen Sumber Daya Manusia Strategis: Teori dan Aplikasi (1st ed.)*. Mafy Media Literasi Indonesia.
- 24) Pahrijal, R., & Arini, R. E. (2026). The Influence of Teachers' Pedagogical Competence and the Use of Digital Technology on Islamic Education Learning



- Outcomes in Senior High Schools in East Java. *Journal of Islamic Education Research*, 4(02), 214–223. <https://doi.org/10.58812/wsshs.v4i02.2653>
- 25) Santos, K. da S., Ribeiro, M. C., de Queiroga, D. E. U., da Silva, I. A. P., & Ferreira, S. M. S. (2020). The use of multiple triangulations as a validation strategy in a qualitative study. *Ciencia e Saude Coletiva*, 25(2), 655–664. <https://doi.org/10.1590/1413-81232020252.12302018>
- 26) Samosir, H. E., Effiati Juliana Hasibuan, & Tappil Rambe. (2023). Prophet Communications in the Madinah Charter for Constructing A Multicultural Society. *Journal of Namibian Studies: History Politics Culture*, 33. <https://doi.org/10.59670/jns.v33i.546>
- 27) Setiawan, D., Rambe, T., & Lukitaningsih, L. (2023). Social Studies Material Design Based on Cultural Literacy as a Systemic Program for Developing Social Skills Competencies. *Randwick International of Education and Linguistics Science Journal*, 4(3). <https://doi.org/10.47175/rielsj.v4i3.809>
- 28) Shobirin, M. S. (2025). Integrating Islamic Values Into Digital Character Education: Managing Curriculum Innovation In The Era Of Education 5.0. *International Journal of Education Management and Religion*, 2(2), 141–161. <https://doi.org/10.71305/ijemr.v2i2.352>
- 29) Siti Maisyarah, & Rahmat Asri Sufa. (2026). *Riset Ilmiah Modern: Teori dan Praktik Metodologi Penelitian* (1st ed.). Ruang Karya Bersama.
- 30) Strohmeier, S. (2020). Digital human resource management: A conceptual clarification. *German Journal of Human Resource Management*, 34(3). <https://doi.org/10.1177/2397002220921131>
- 31) Theotokas, I. N., Lagoudis, I. N., & Raftopoulou, K. (2024). Challenges of maritime human resource management for the transition to shipping digitalization. *Journal of Shipping and Trade*, 9(1). <https://doi.org/10.1186/s41072-024-00165-0>
- 32) Valverde-Berrocoso, J., Fernández-Sánchez, M. R., Dominguez, F. I. R., & Sosa-Díaz, M. J. (2021). The educational integration of digital technologies preCovid-19: Lessons for teacher education. *PLoS ONE*, 16(8), 1–22. <https://doi.org/10.1371/journal.pone.0256283>
- 33) Venugopal, M., Madhavan, V., Prasad, R., & Raman, R. (2024). Transformative AI in human resource management: enhancing workforce planning with topic modeling. *Cogent Business and Management*, 11(1). <https://doi.org/10.1080/23311975.2024.2432550>
- 34) Yuniartin, T., Subaidah, S., Feriana, D., Arman, M., & Saepuloh, D. (2024). Evaluation of Islamic Education: Integrating Cognitive, Moral, and Spiritual



- Aspects Based on The Qur'an and Hadith. *Jurnal Pendidikan Agama Islam Indonesia (JPAAI)*, 5(4), 161–169. <https://doi.org/10.37251/jpaii.v5i4.1267>
- 35) Zavyalova, E., Sokolov, D., Kucherov, D., & Lisovskaya, A. (2022). The Digitalization of Human Resource Management: Present and Future. *Foresight and STI Governance*, 16(2). <https://doi.org/10.17323/2500-2597.2022.2.42.51>
- 36) Zhang, J., & Chen, Z. (2024). Exploring Human Resource Management Digital Transformation in the Digital Age. *Journal of the Knowledge Economy*, 15(1). <https://doi.org/10.1007/s13132-023-01214-y>
- 37) Zuhriyeh, S., Ali, M., & Hidayat, A. (2025). Digital Transformation of Islamic Education: An Artificial Intelligence-Based Teaching Module Development Study. *Edunesia: Jurnal Ilmiah Pendidikan*, 6(2), 1113–1126. <https://doi.org/10.51276/edu.v6i2.125>

