STRENGTHENING PEDAGOGICAL COMPETENCE THROUGH EDUCATIONAL HR MANAGEMENT: A CASE STUDY AT SMPN 1 KOTABARU

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Abstract

The rapid digitalization of education has reshaped pedagogical practices, requiring teachers to continually strengthen their competence in designing, implementing, and evaluating technology-integrated instruction. This study investigates the educational Human Resource Management (HRM) strategies used to enhance teachers' pedagogical competence in the digital era through a case study at SMPN 1 Kotabaru. Employing a qualitative approach with an exploratory case study design, data were collected from 12 informants, consisting of school leaders, HR development coordinators, and teachers. The data collection techniques included semi-structured interviews, participant observation, and document analysis. Data were analyzed using Miles and Huberman's interactive model, encompassing data reduction, data display, and conclusion drawing. The findings reveal that HRM strategies are operationalized through four core components: systematic competency needs mapping, practice-based modular training, continuous performance monitoring, and reflective post-training evaluation. Teachers perceive these strategies as supportive, particularly when training emphasizes applicability, collaboration, and contextual problem-solving. Institutional challenges include limited time allocation, resistance to technological changes, and inconsistent training continuity. Five success-inducing factors are identified: visionary leadership, collaborative school culture, reflective evaluation mechanisms, institutional policy support, and teachers' technological readiness. Theoretically, this study contributes to the discourse on strategic HRM in digital-era education, while practically offering guidance for policymakers and school leaders in designing adaptive and sustainable teacher development systems.

Keywords: *Educational HRM; Pedagogical Competence; Digital Era; Teacher Development; SMPN 1 Kotabaru*

A. Introduction

The rapid acceleration of digital transformation in education has introduced significant shifts in how learning is designed, delivered, and assessed. Digital platforms, interactive learning environments, and data-driven instructional tools increasingly shape classroom interactions and teacher decision-making. These developments require teachers to develop digital pedagogical competence that is technically adaptive and instructionally meaningful. Digital pedagogical competence is widely recognized as a multidimensional construct involving the ability to design learning activities, facilitate student-centered instruction, manage digital resources, and evaluate learning outcomes within technology-

integrated environments (Ilomäki et al., 2016; Redecker, 2017). Scholars further stress that effective digital pedagogy requires the integration of technological, pedagogical, and domain-specific knowledge, aligning with the principles of the Technological Pedagogical and Content Knowledge (TPACK) framework (Koehler & Mishra, 2009).

Despite its growing importance, digital pedagogical competence does not develop automatically. Empirical studies show that teachers' ability to integrate digital tools meaningfully depends on structured and sustained professional learning opportunities (Darling-Hammond et al., 2017; Gudmundsdottir & Hatlevik, 2018). Consequently, educational Human Resource Management (HRM) plays a crucial strategic role. HRM in schools extends beyond staffing and administration to encompass competency mapping, continuous professional development, performance monitoring, and reflective evaluation—components that are central in contemporary strategic HRM scholarship (Boon et al., 2018; Bush, 2018). From an organizational perspective, HRM systems must align teacher development processes with institutional goals to ensure that technological integration contributes to instructional improvement.

The need for strategic HRM interventions is particularly evident in Indonesian secondary schools. National reports highlight that Indonesian teachers exhibit substantial variation in digital readiness, with many lacking confidence and pedagogical fluency in technology-supported teaching (Kemendikbud, 2021). Empirical findings in Indonesian contexts further indicate that the integration of ICT in classroom practice remains inconsistent, often constrained by limitations in teacher competence, access, and pedagogical support (Hidayat et al., 2020; Purwanto et al., 2020). These challenges suggest that technological availability alone does not guarantee instructional quality; instead, schools require HRM strategies that directly address teacher learning needs and support sustained, context-specific pedagogical development. Research in Indonesian settings also indicates that teachers' beliefs, school leadership, and organizational culture significantly affect technology adoption (Tondeur et al., 2017; Trust & Whalen, 2020).

Although previous research has explored teacher training and digital adoption during the post-pandemic transition, limited empirical studies have examined how school-level HRM systems strategically integrate competency mapping, modular training, performance monitoring, and reflective evaluation in non-emergency conditions. This gap underscores the need for research that investigates concrete HRM mechanisms within routine school contexts.

Accordingly, this study examines how HRM strategies at SMPN 1 Kotabaru are designed, implemented, and experienced in strengthening teachers' pedagogical competence in the digital era, and what enabling or constraining factors shape their effectiveness. The objectives are to (a) identify HRM strategies used to enhance teachers' digital pedagogical competence, (b) analyze teachers' perceptions of these strategies, and (c) examine supporting and inhibiting factors that influence their implementation.

Through an in-depth examination of SMPN 1 Kotabaru as an illustrative case, this study contributes to theoretical discussions on strategic HRM in education and offers practical recommendations for school leaders and policymakers seeking to design adaptive, reflective, and sustainable teacher development systems in the digital era.

B. Method

Research Design

This This study uses a qualitative descriptive design to investigate how HRM strategies strengthen teachers' pedagogical competence in the digital era. A qualitative descriptive approach is appropriate because it allows the researcher to present complex school-level processes in a clear, contextual, and narrative form (Creswell, 2014). Such an approach is particularly useful for exploring organizational dynamics that evolve over time and involve interactions among policies, practices, and individual experiences.

This design aligns with the perspective that qualitative inquiry helps researchers understand how meaning is constructed in institutional settings (Merriam & Tisdell, 2016). In this study, the qualitative descriptive design enables the reconstruction of HRM practices and the interpretation of teachers' experiences as naturally occurring processes rather than as isolated variables.

Data were obtained from three primary sources to support triangulation and deepen contextual understanding.

1. Institutional Documents

Documents such as HR planning records, teacher training reports, professional development guidelines, and school policy archives were analyzed. Institutional documents provide crucial evidence for tracing HRM strategies and organizational decisions over time, consistent with Yin's (2018) argument that documents are vital for reconstructing institutional processes in case study research.

2. Classroom and Training Observations

Participant observations were conducted during teacher training sessions and classroom practices to gain insight into actual implementation of pedagogical and technological strategies. Observational data allow the researcher to capture naturally occurring behaviors and interactions, consistent with qualitative fieldwork traditions (Merriam & Tisdell, 2016).

3. Semi-Structured Interviews

Interviews were conducted with 12 informants, consisting of the principal, vice principal for curriculum, HRM coordinator, ICT coordinator, and eight teachers. Semi-structured interviewing supports flexible and meaning-oriented exploration of participants' experiences (Kvale & Brinkmann, 2015). Interview questions focused on HRM practices, teachers' perceptions of competence development, and enabling and constraining factors.

Data Collection Procedures

Data collection was conducted through a systematic process to maintain consistency and rigor. First, institutional documents were collected and categorized based on HRM domains (competency mapping, training, performance monitoring, and evaluation). Second, observations were conducted and recorded using structured field notes aligned with Creswell's (2014) recommendation for systematic qualitative documentation. Third, interviews were conducted using criterion-based sampling to ensure that participants had direct involvement in HRM and digital pedagogy initiatives (Patton, 2015). All interviews were audio-recorded and transcribed verbatim for analysis.

Data Analysis

Data were analyzed using Miles, Huberman, and Saldaña's (2014) interactive model, which includes data reduction, data display, and conclusion drawing. Interview transcripts, observation notes, and documents were coded to identify meaningful segments related to HRM processes and pedagogical competence. Matrices and thematic charts were developed to visualize relationships between HRM strategies, teacher experiences, and contextual factors. Miles et al. (2014) emphasize that visual data displays help identify emerging patterns. The thematic analysis followed Braun and Clarke's (2006, 2019) six-phase framework: familiarization, coding, generating themes, reviewing themes, defining themes, and writing. Themes were generated inductively to ensure they emerged from the data rather than being imposed a priori (Braun & Clarke, 2019). Triangulation between interviews, observations, and documents allowed cross-validation of themes, enhancing analytical credibility (Yin, 2018).

Trustworthiness

To ensure rigor, the study employs Lincoln and Guba's (1985) trustworthiness criteria:

1. Credibility: Achieved through triangulation of interviews, observations, and documents.
2. Dependability: Supported by maintaining a detailed audit trail documenting analytic decisions.
3. Confirmability: Ensured using reflexive notes to minimize researcher bias and ground all interpretations in the data.
4. Transferability: Strengthened by providing thick descriptions of school context, HRM processes, and professional development systems.

C. Finding and Discussion

1. Finding

The The findings of this study reveal four major thematic patterns that explain how educational Human Resource Management (HRM) strategies at SMPN 1 Kotabaru have contributed to strengthening teachers' pedagogical competence in the digital era. These thematic patterns emerged through systematic coding and cross-case comparison of data

obtained from interviews, observation, and document analysis. Each theme represents an integrated depiction of the school's HRM practices as experienced by teachers, school leaders, and internal training coordinators.

Systematic Mapping of Competency Needs

The first major theme highlights the school's structured approach to identifying digital pedagogical needs. The HR division conducts an annual competency audit that integrates three data sources self-assessment, peer review, and principal evaluation. Informants described the mapping process as comprehensive because it examines not only teachers' technical abilities but also their instructional design skills, classroom technology management, and readiness to adopt new platforms.

Interview data show that teachers were asked to assess their proficiency across several indicators, including digital lesson planning, online formative assessment, integration of multimedia learning resources, and classroom management in hybrid or online settings. These self-assessments were then compared with peer review feedback and principal evaluations, creating a triangulated understanding of competence gaps. Teachers consistently stated that this mapping process prevented the school from implementing "generic" training that lacked relevance. Instead, HR officers used diagnostic results to rank priority areas and categorize teachers into target groups (beginner, intermediate, advanced). Several teachers noted that this allowed the school to avoid redundant training sessions, making professional development "more targeted, efficient, and responsive to actual classroom challenges." Document analysis confirmed that the results of the competency audit directly informed the design of the following semester's training modules.

Overall, the systematic mapping of needs functioned as the foundation of all subsequent HR interventions, ensuring that training activities aligned with teachers' real pedagogical demands in the digital era.

Practice-Based Modular Training Programs

The second theme concerns the school's shift toward modular, practice-oriented training that emphasizes skill mastery over theoretical understanding. The HR division developed a series of short workshop modules focusing on key digital tools such as Google Classroom, Quizizz, Canva for Education, learning analytics dashboards, and video-based instructional media. Each module required teachers to complete hands-on tasks, such as designing a digital lesson plan, creating an online quiz, or producing multimedia learning content.

Interview data indicate that teachers found the modular format particularly effective because it allowed them to learn at their own pace while addressing concrete classroom needs. Many described the training as "immediately applicable" due to its emphasis on modeling, guided practice, and peer feedback. Teachers were frequently paired in small groups to solve classroom scenarios, exchange strategies, and practice tool-based integration.

Observation data further revealed that the training environment encouraged experimentation. Teachers were seen collaborating actively during workshops, testing features of digital platforms, and refining their outputs with support from facilitators. Several teachers reported increased confidence after the training, noting that they were better able to design interactive lessons and differentiate instruction using digital media. The modular training model also incorporated follow-up assignments that required teachers to apply workshop content in real classroom settings. These assignments were later reviewed during evaluation meetings, reinforcing learning and encouraging a cycle of continuous improvement.

Continuous Performance Monitoring and Reflective Evaluation

The third theme shows that the school implements continuous supervision mechanisms that go beyond traditional classroom observation. Monitoring is conducted through a combination of scheduled classroom observations, digital teaching portfolios, and monthly feedback sessions involving supervisors and HR coordinators. Teachers consistently emphasized that the supervision system was "supportive rather than punitive." Observations aimed to identify strengths and areas for improvement, focusing on lesson flow, student engagement strategies, digital assessment usage, and integration of multimedia learning resources. Supervisors provided detailed feedback using structured rubrics aligned with the school's digital pedagogy standards.

Digital teaching portfolios, which include lesson plans, multimedia materials, screenshots of classroom activities, and samples of online assessments, served as a reflective archive of teachers' progress. Teachers stated that portfolios motivated them to improve the quality of their digital materials because they knew these would be reviewed periodically. Monthly feedback forums further strengthened the culture of reflection. These sessions allowed teachers to discuss challenges, share successful strategies, and collaboratively problem-solve issues such as managing student behavior in hybrid settings, designing engaging digital tasks, or improving assessment reliability. Many teachers felt that these discussions were "critical for refining pedagogical decision-making" and fostering a professional community rooted in continuous growth.

Institutional Challenges and Enabling Factors

The final theme addresses both the challenges and facilitating conditions that shaped the implementation of HRM strategies. Despite the school's structured and well-planned approach, several challenges emerged.

First, teachers reported limited time allocation for professional development due to teaching schedules and administrative responsibilities. Some found it difficult to fully engage in training modules during peak academic periods. Second, the school faced uneven technological readiness, especially among senior teachers who initially lacked confidence in navigating digital platforms. Third, the continuity of certain training programs was inconsistent, with some initiatives not receiving long-term follow-up due to resource constraints.

Despite these obstacles, five enabling factors played a crucial role in the success of the HRM initiatives:

1) Visionary Leadership: The principal's commitment to digital transformation provided clear direction and consistent motivation for teachers.
2) Collaborative School Culture: Teachers often relied on peer mentoring and informal coaching, creating a supportive learning environment.
3) Institutional Policy Support: School regulations formally integrated digital pedagogy standards into performance expectations, ensuring alignment across departments.
4) Reflective Evaluation Mechanisms: Continuous monitoring and feedback helped maintain momentum and encouraged teachers to view professional development as an ongoing process.
5) Teachers' Openness to Technological Adaptation: Most teachers demonstrated willingness to experiment with new tools and adjust their instructional strategies in response to student needs.

Together, these enabling factors allowed the HRM strategies to produce meaningful improvements in teachers' pedagogical competence, even within the constraints of real-world school dynamics.

2. Discussion

The The discussion interprets the findings of this study using contemporary theories from educational Human Resource Management (HRM), digital pedagogy, and professional learning. The analysis examines how the four themes competency mapping, modular training, continuous monitoring, and institutional factors align with or diverge from established theoretical constructs such as Strategic HRM (SHRM), TPACK, adult learning theory (andragogy), and digital transformation frameworks in school leadership.

Strategic Competency Mapping and Digital Pedagogical Needs

The finding that the school conducted systematic competency audits aligns closely with the Strategic HRM perspective, which emphasizes alignment between organizational goals and workforce capabilities (Boxall & Purcell, 2022). In SHRM, needs analysis is the first step in creating targeted development pathways. The school's integration of self-evaluation, peer review, and principal assessment demonstrates a data-driven approach consistent with recent educational HRM studies in Indonesia and Southeast Asia (Arif, 2023; Suriansyah et al., 2023).

From a pedagogical perspective, this mapping reflects the TPACK framework (Technological Pedagogical and Content Knowledge). Identifying gaps in lesson design, multimedia integration, and online assessment corresponds to the "technological–pedagogical intersection" highlighted by Koehler et al. (2022). The mapping process thus functions as a structural mechanism for identifying which TPACK components require strengthening among teachers.

This finding also aligns with adult learning theory, which states that adult learners perform best when training is problem-centered, relevant, and aligned with real-life needs

(Knowles et al., 2020). By diagnosing specific skill gaps, the school ensured that teachers experienced training as meaningful and authentic.

Effectiveness of Practice-Based Modular Training Programs

The study found that modular, hands-on workshops significantly increased teachers' confidence in integrating digital tools. This aligns with empirical research demonstrating that practice-based, scaffolded training is more effective for building digital pedagogy than theoretical lectures (Wulandari et al., 2025; Chai, 2021).

According to the TPACK framework, digital competence is best developed through iterative practice in real classroom contexts (Koehler et al., 2022). The modular training design aligns with this, as teachers created actual lesson plans, multimedia materials, and digital assessments during the workshops. This is consistent with studies showing that "learn-by-doing" models enhance technology self-efficacy and increase transfer to actual teaching (Trust & Whalen, 2021). Moreover, the inclusion of peer mentoring reflects principles of adult learning and social constructivist professional development, where collaboration accelerates competence development (Bates & Morgan, 2022). Teachers' positive experiences feeling more confident and supported align with research showing that collaborative training fosters a culture of innovation and shared learning.

Continuous Performance Monitoring, Data-Driven Feedback, and Reflective Practice

The school's integrated monitoring system supports findings in contemporary HRM that emphasize continuous feedback loops as a driver of professional growth (Boxall & Purcell, 2022). Unlike traditional evaluation, which is summative and hierarchical, the school adopted a formative, dialogic model consistent with reflective supervision (Robandi et al., 2025). The use of digital portfolios matches global trends in teacher development, where evidence-based reflection strengthens professional identity and improves the quality of digital pedagogy (Dahlan, 2021; Net, 2024). Monthly feedback meetings foster reflective conversations, consistent with Schön's (2021) concept of "reflection-in-action," where practitioners refine their techniques through guided inquiry.

Data-driven monitoring also aligns with instructional leadership frameworks that emphasize the use of analytics to improve teaching behavior (Hallinger, 2020). This reinforces that pedagogical change requires ongoing dialogue, not one-off workshops.

Institutional Challenges and Enablers in HRM Implementation

The study found that although HRM strategies were effective, several constraints emerged time limitations, technological disparities, and inconsistent program continuity. These challenges mirror structural barriers frequently cited in digital transformation literature (Kurniawati, 2022; Prasetyo et al., 2020). However, the presence of enabling factors visionary leadership, collaborative culture, strong policy support, reflective evaluation mechanisms, and teacher openness reflects the systems approach to HRM, which argues that organizational change succeeds when structures, culture, and individual agency are aligned (Suriansyah et al., 2023). This aligns with Fullan's (2020) view that school transformation depends on leadership-driven coherence building.

Teachers' willingness to adapt reflects the growth mindset and digital resilience described in post-pandemic research, where teachers who engage in continuous learning are more capable of navigating technological change (Net, 2024).

Across the four themes, the findings collectively demonstrate that effective educational HRM in the digital era requires:

1. Strategic alignment, where competency mapping ensures training responds to real instructional needs (SHRM).
2. Pedagogical integration, where teachers develop TPACK through authentic, hands-on practice.
3. Reflective professional culture, supported by feedback loops, digital evidence, and collaborative learning.
4. Systemic leadership support, ensuring continuity, resource allocation, and shared norms.

These findings confirm previous studies showing that digital competence frameworks only become effective when embedded in coherent HRM structures (Trust & Whalen, 2021; Chai, 2021). The study expands the application of TPACK and Strategic HRM frameworks by demonstrating how they interact in real-school HR structures. It also contributes evidence that adult-learning-informed training models are essential for digital transformation in education. Schools should adopt diagnostic, modular, and reflective HRM systems to sustain digital pedagogy development. Strong leadership and collaborative culture are necessary to overcome resource and skill disparities. Challenges such as time constraints and uneven readiness indicate that HR interventions must incorporate differentiated training pathways and long-term sustainability planning.

E. Conclusion

This This study shows that teachers' pedagogical competence in the digital era is strongly shaped by the effectiveness of educational HRM. Strategic HRM practices such as competency-based planning, continuous professional development, and performance-focused supervision directly enhance teachers' ability to design digital lessons, utilize online resources, and facilitate interactive learning. Findings also indicate that competence growth results from the interaction of organizational support, digital infrastructure, leadership commitment, and teachers' intrinsic motivation. This pattern aligns with key frameworks in educational technology and HRM, including TPACK, adult learning theory, and strategic HRM, which emphasize collaborative, reflective, and goal-aligned learning environments. Practically, the study underscores the importance of systematic HRM strategies, including targeted digital training, coaching mechanisms, and data-informed evaluation. Theoretically, it demonstrates that digital pedagogical competence is an HRM-driven developmental process rather than a purely technological shift. The study's focus on a single school represents a limitation, pointing to the need for broader comparative research across diverse institutional contexts.

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