

THE IMPLEMENTATION OF DIGITALIZED TEACHER MANAGEMENT IN A PRIVATE HIGHER VOCATIONAL INSTITUTION OF SANYA CITY IN CHINA

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ARTICLE HISTORY

Received: 5 June 2026

Revised: 8 June 2026

Published: 26 June 2026

ABSTRACT

This study explored the implementation status, existing problems, and improvement suggestions of digitalized teacher management in a private higher vocational institution in Sanya City. Adopting a mixed research method, questionnaires were distributed to 162 teachers, and semi-structured interviews were conducted with five managements. The investigation was carried out from five dimensions: Digitization of Management Concept, Technical Infrastructure and Support Mechanism, Data Governance System, Evaluation and Incentive Mechanism, and Industry-Education Integration Mechanism. The results showed that the overall level of digitalized teacher management was high (3.70). Digitization of Management Concept scored the highest (3.92), while Industry-Education Integration Mechanism scored the lowest (3.51). Interviews further revealed prominent problems including formalized management concepts, fragmented data, formalistic evaluation mechanisms, insufficient technical support, and inadequate industry-education integration. This study suggests that private vocational institutions should optimize management concepts, improve data governance, refine evaluation and incentive mechanisms, upgrade technical support, and deepen industry-education integration. The findings provide practical references for optimizing digitalized teacher management and improving management effectiveness in private vocational institutions.

Keywords: Digitalized Teacher Management, Private Higher Vocational Institution, Sanya

CITATION INFORMATION: Junbo, y., & Lertamornsak, G. (2026). The Implementation of Digitalized Teacher Management in A Private Higher Vocational Institution of Sanya City in China. *Procedia of Multidisciplinary Research*, 4(6), 20.

INTRODUCTION

Global digital transformation is profoundly reshaping social and educational development worldwide, guiding educational governance toward data-driven, intelligent, and refined models (Sendrea & Grecea, 2025). In China, educational digitalization has been established as a national strategy to promote educational modernization and high-quality development (Xi, 2022). As an important regional development engine, the Hainan Free Trade Port prioritizes the digital economy and modern service industries. Sanya, as its core city, has placed great emphasis on cultivating digitally skilled talents, which has driven local vocational institutions to advance digital governance construction (Sanya Municipal Bureau of Education, 2025). Private higher vocational institutions, as important providers of applied talents, play a key role in regional development, yet they face challenges in digital transformation due to limited resources and flexible operational models (Shen et al., 2025). Digitalized teacher management, as a core component of educational digitalization and educational governance reform, refers to the systematic application of digital technologies and data platforms throughout the whole-process teacher management, covering teacher recruitment, training, evaluation, incentives, and professional development (Dahyanti, 2025). Driven by national digital strategies and regional development demands, improving the quality of digitalized teacher management has become a key priority for private higher vocational institutions in Sanya. This study takes a private higher vocational institution in Sanya as a case. It systematically explores the implementation status, existing problems, and guidelines of digitalized teacher management from five dimensions: digitization of management concept, data governance system, evaluation and incentive mechanism, technical infrastructure and support mechanism, and industry-education integration mechanism. The research aims to provide practical references for similar private vocational institutions to optimize digitalized teacher management and improving management effectiveness in private vocational institutions.

1.1 Research Objective

(1) To study the implementation of digitalized teacher management in a private higher vocational institution of Sanya in China.

(2) To propose guidelines for the implementation of digitalized teacher management in a private higher vocational institution of Sanya in China.

1.2 Research Significance

First, this study contributes to research on digitalized teacher management in private higher vocational institutions. By focusing on Digitization of management concept, Data governance system, Evaluation and incentive mechanism, Technical infrastructure and support mechanism, and Industry-education integration mechanism, this study helps clarify the implementation status and existing problems of digitalized teacher management in private higher vocational institutions. It also enriches the localized research on digital governance in higher vocational education.

Second, this study contributes to the practice of optimizing digitalized teacher management in private higher vocational institutions. By analyzing the existing problems in a private higher vocational institution in Sanya, it provides practical guidelines for improving digitalized teacher management from the five dimensions mentioned above. The findings can serve as a reference for similar private higher vocational institutions to promote digital transformation and enhance teacher management effectiveness.

LITERATURE REVIEW

2.1 Core Concept

Based on existing researches on digital transformation and teacher governance, digitalized teacher management is more than the application of big data, cloud computing and intelligent platforms. It refers to the systematic restructuring of teacher governance procedures with digital tools (Liu & Liang, 2024).

Different from traditional management relying on manual work and scattered information, it highlights standardized data integration, open management procedures and data-driven decision-making covering the whole process of teacher management, career development, performance assessment and service guarantee. Against the background of educational digitalization, teacher management extends beyond daily personnel work, covering digital performance appraisal, career development monitoring, training demand assessment and industry-adaptive ability improvement (Subandi et al., 2024). Institutions can gather and analyze data on teaching work, scientific research, training attendance and school-enterprise cooperation via unified digital platforms, which elevates management efficiency and shifts governance mode from empirical judgment to evidence-based management.

For private higher vocational institutions with market-oriented operation and tight industrial connection, digitalized teacher management has distinctive practical value. Faced with assessment pressure, limited resources and industrial talent standards, it serves as an integrated governance framework consisting of digitization of management concept, data governance system, evaluation and incentive mechanism, technical infrastructure and support mechanism, as well as industry-education integration mechanism. These core components decide whether digital reform can bring substantial governance progress rather than mere technical update.

2.2 Theoretical Foundation

This study is based on Digital Governance Theory, Human Resource Management Theory, and the combination of Technology Acceptance Model and Organizational Change Theory. Digital Governance Theory emphasizes that educational institutions can optimize institutional operation, standardize data management, and improve overall governance efficiency through the integration of digital technology and institutional mechanisms (Kapesa, 2025; Hong, 2025). Human Resource Management Theory focuses on the significance of teacher performance evaluation, incentive design, and professional development in maintaining the sustainable development of educational organizations (MIHOC & MINA-RAIU, 2025; Kurniawanto et al., 2024). In addition, the Technology Acceptance Model and Organizational Change Theory highlight that the effective implementation of digital management depends on users' technological acceptance and adaptive adjustment of organizational structures and working procedures (Davis, 1989; Lu, 2024). These theories provide important theoretical support for the research on digitalized teacher management in private higher vocational institutions from five dimensions.

2.3 Related research

Many previous studies have discussed digital transformation and teacher management optimization in private higher vocational institutions. Domestic studies have gradually shifted from policy interpretation to practical governance exploration amid the advancement of educational digitalization, emphasizing the significance of digital management concepts and data-driven decision-making (Hua & Cheng, 2019; Jiang et al., 2020). Scholars have confirmed that standardized data governance, integrated data resources, and effective data service mechanisms are critical to improving the scientific level of educational management in vocational institutions (Feng & Li, 2021). In addition, existing domestic research highlights the importance of digital infrastructure construction, professional training, and incentive systems for promoting teachers' digital teaching capabilities (Yi & Xue, 2022; Feng, 2023; Si, 2024). Recent studies also point out that vocational education still faces insufficient industry-education integration and mismatched talent training structures amid digital transformation (Yang, 2025), and inadequate digital infrastructure restricts the sustainable development of teachers' digital teaching practice (Chen, 2025).

International studies have further enriched the theoretical and practical research on digitalized teacher management from the perspectives of data governance, institutional incentive mechanisms, industry-university collaboration, and technical support systems. Foreign scholars emphasize that data analytics and standardized data governance frameworks provide reliable

evidence for educational management decision-making and institutional digital reform (Bowers et al., 2019; Omar & Almaghthawi, 2020). Digital evaluation and incentive systems are proven to effectively track teachers' professional development and motivate long-term teaching improvement (Jarke & Breiter, 2021; Donaldson & Firestone, 2021). Furthermore, international research verifies that industry-education collaborative mechanisms and sound digital technical infrastructure are essential foundations for stabilizing institutional digital governance and supporting teacher development (Marijan & Gotlieb, 2021; Evans et al., 2023; Wu & Reyes, 2024; Carmo et al., 2025).

Overall, existing domestic and international studies have explored the dimensions of digitalized teacher management, including the digitization of management concept, data governance system, evaluation and incentive mechanism, technical infrastructure and support mechanism, and industry-education integration mechanism. These studies provide solid theoretical and practical references for this study to analyze the current situation and guidelines of digitalized teacher management in private higher vocational institutions.

2.4 Research Gap

Existing domestic and international studies have explored digitalized teacher management from multiple perspectives including the digitization of management concept, data governance system, evaluation and incentive mechanism, technical infrastructure and support mechanism, and industry-education integration mechanism, laying a solid theoretical foundation for this study; nevertheless, several prominent research gaps remain. Most existing studies concentrate on macro-level policy analysis and theoretical discussion of educational digitalization, while in-depth practical research on the institutional implementation and real operational problems of digitalized teacher management at the institution level is insufficient. In addition, relevant research mainly focuses on general higher education, with few targeted empirical studies exploring the digital teacher management dilemmas of private higher vocational institutions, which feature unique market-oriented operation and industry-oriented talent training characteristics. Furthermore, prior literature tends to separately examine single dimensions of digital transformation, lacking holistic multi-dimensional analytical frameworks that fully integrate the digitization of management concept, data governance system, evaluation and incentive mechanism, technical infrastructure and support mechanism, and industry-education integration mechanism. Meanwhile, current studies are predominantly theoretical and policy-oriented, with inadequate empirical research based on questionnaires, interviews and field investigations, resulting in insufficient practical evidence for optimizing digitalized teacher management in private vocational institutions. To fill these research gaps, this study takes a private higher vocational institution in Sanya as the research object and conducts empirical analysis on the current situation and existing problems of digitalized teacher management based on this five-dimensional analytical framework, aiming to provide practical references for the digital transformation of similar vocational institutions.

METHODS

3.1 Research Design

This study adopted a mixed research method to explore the current situation and existing problems of digitalized teacher management in a private higher vocational institution in Sanya. Quantitative research was used to collect data from faculty and administrative staff through questionnaires, while qualitative research was used to obtain in-depth practical information through semi-structured interviews. The mixed research method helps comprehensively grasp the overall operation status and practical difficulties of digitalized teacher management implementation.

3.2 Population and sample

The population of this study consisted of 280 teachers in a private higher vocational institution of Sanya City in China. The sample size included 162 teachers, which was determined by using

Krejcie and Morgan's sample size table (1970). Moreover, five key informants were selected through purposive sampling for semi structured interviews. The interviewees are managements with more than three years of working experience, who are responsible for concerning digitalized teacher management.

3.3 Research instruments

Questionnaire: A 5-level Likert scale questionnaire was designed to measure five core dimensions of digitalized teacher management at the selected private higher vocational institution in Sanya, including the digitization of management concept, data governance system, evaluation and incentive mechanism, technical infrastructure and support mechanism, and industry-education integration mechanism.

Semi-structured interview outline: The interview questions focused on practical problems and improvement suggestions related to the above five dimensions of digitalized teacher management, aiming to explore the implementation status, bottlenecks, and guidelines of digitalized teacher management in the institution.

3.4 Validity and Reliability

The Item Objective Congruence of the questionnaire ranged from 0.67 to 1.00, indicating good content validity. The questionnaire items were reviewed by three experts, including two off-campus professors specializing in educational management and one on-campus expert. In addition, a pilot study was conducted with 40 participants to examine the reliability of the questionnaire. The Cronbach's Alpha coefficient of the questionnaire was 0.919, indicating good reliability.

For the semi-structured interview, the questions were revised based on the supervisor's advice to guarantee clear expression, reasonable content and consistency with research objectives and conceptual framework. The interview questions were developed based on the five core dimensions related to digitalized teacher management.

3.5 Data Analysis

The researcher took all the received questionnaires to check the completeness of every questionnaire, and bring the obtained data for statistical analysis by using a computer to calculate statistical values with a statistical package.

RESULTS

4.1 Descriptive Statistical Results

Table 1 Results analysis of mean and standard deviation of the Implementation of Digitalized Teacher Management in a Private Higher Vocational Institution of Sanya City in China as an overview

The Implementation of Digitalized Teacher Management in a Private Higher Vocational Institution of Sanya City in China	n = 162		Interpretation
	$\bar{x}$	S.D.	
1. Digitization of Management Concept	3.92	0.50	high level
2. Data Governance System	3.68	0.52	high level
3. Evaluation and Incentive Mechanism	3.65	0.52	high level
4. Technical Infrastructure and Support Mechanism	3.75	0.51	high level
5. Industry-Education Integration Mechanism	3.51	0.55	high level
Total	3.70	0.52	high level

The overall mean score for digitalized teacher management at the private higher vocational institution in Sanya City was 3.70, at a high level.

Digitization of Management Concept achieved the highest rating (3.92), indicating that faculty members held positive perceptions of digitalized management awareness.

Technical Infrastructure and Support Mechanism ranked second (3.75), showing that the institution had established a basic digital foundation for daily teacher management.

Data Governance System placed third (3.68), indicating that basic data management practices were generally in place.

Evaluation and Incentive Mechanism came fourth (3.65), showing that digital evaluation frameworks were commonly applied in routine management.

Industry–Education Integration Mechanism was recorded the lowest (3.51), indicating relatively limited alignment between digital management and industry-oriented practices.

4.2 Group Difference Results

There were differences in perceptions among teachers regarding Digitization of Management Concept, Technical Infrastructure and Support Mechanism, Data Governance System, Evaluation and Incentive Mechanism, and Industry–Education Integration Mechanism. Teachers with different working experience, educational backgrounds, and job responsibilities showed different perceptions toward the implementation of digitalized teacher management.

4.3 Interview Results

In-depth interviews revealed specific shortcomings in the implementation of digitalized teacher management.

Regarding Digitization of Management Concept, although overall awareness was positive, the concept remained relatively superficial and lacked in-depth understanding and practical integration into daily operations.

For Technical Infrastructure and Support Mechanism, while basic facilities were available, operational stability, technical response efficiency, and systematic training still needed to be strengthened.

Concerning Data Governance System, basic data collection existed, but problems such as fragmented information, inconsistent standards, and insufficient data security were prominent.

In terms of Evaluation and Incentive Mechanism, digital evaluation was widely used, yet the mechanism tended to be formalistic and lacked effective connection with teachers' professional development.

Regarding Industry–Education Integration Mechanism, the weakest dimension, digital linkage with industry was insufficient, and practical cooperation and resource sharing remained limited.

DISCUSSION

This study's findings show that digitalized teacher management in the sampled institution reached a high level overall, reflecting policy alignment and basic institutional readiness for educational digitalization. However, the dimension imbalance reveals a common pattern in private vocational institutions: strong surface-level adoption but weak substantive integration.

The highest score for Digitization of Management Concept (3.92) mirrors policy-driven awareness, yet the gap between awareness and practice points to top-level design limitations and weak operationalization in daily management. This aligns with prior research emphasizing that conceptual recognition alone cannot drive sustainable digital progress without systematic planning.

Technical Infrastructure (3.75) being second highlights adequate hardware investment, but training and support gaps reflect resource constraints typical of private institutions. While facilities exist, long-term maintenance and capacity-building remain insufficient.

Data Governance (3.68) and Evaluation Mechanism (3.65) both show structural weaknesses. Fragmented data and formalistic incentives indicate that digital tools have not yet become governance enablers, but remain administrative aids. This echoes studies on private institutions' tendency to prioritize routine tasks over developmental goals.

The lowest score for Industry–Education Integration (3.51) underscores the weak link between digital management and vocational education's applied mission. Despite industry-oriented positioning, digital collaboration and practical alignment remain underdeveloped.

Overall, the results confirm that digitalization awareness and infrastructure are relatively mature,

but practice, data, incentives, and industry linkage lag behind. This imbalance reflects the transitional stage of digital governance in private vocational institutions, where policy push outpaces institutional capacity. The findings support the view that effective digitalized teacher management requires moving from surface adoption to integrated, practice-driven governance.

SUGGESTIONS FOR IMPROVEMENT

6.1 Optimizing the Digitization of Management Concept

Raise the strategic priority of digital teacher management and avoid short-term orientation. Formulate long-term plans and integrate digital literacy into institutional development. Strengthen data-driven thinking and ensure policies are fully implemented with clear responsibilities and regular reviews.

6.2 Improving the Data Governance System

Implement unified top-level planning to break departmental information barriers. Standardize data collection and update rules, integrate fragmented resources, and build a sustainable maintenance system. Enhance data quality and support evidence-based decision-making.

6.3 Refining the Evaluation and Incentive Mechanism

Shift from routine-focused assessment to growth- and performance-oriented criteria. Simplify formal procedures and link digital performance to career development. Adopt diversified evaluation and flexible incentives to boost engagement and alignment with institutional goals.

6.4 Upgrading Technical Infrastructure and Support Mechanisms

Increase investment to upgrade digital platforms and optimize user experience. Provide regular targeted training and establish a dedicated technical team for timely support. Ensure stable operation, reduce risks, and offer reliable technical guarantees.

6.5 Deepening the Industry-Education Integration Mechanism

Build stable cooperation with quality enterprises and develop shared data platforms. Introduce real industrial cases and trends to enhance practical relevance. Bridge campus and industry to adapt digital management to market demands.

CONCLUSION

This study explored the implementation of digitalized teacher management at a private higher vocational institution in Sanya City. The findings reveal that the institution has established a sound basic framework for digitalized teacher management, with relatively mature Digitization of Management Concept and Technical Infrastructure and Support Mechanism. However, noticeable gaps persist across key dimensions, especially in Data Governance System, Evaluation and Incentive Mechanism, and Industry–Education Integration Mechanism. The study emphasizes the necessity of balanced development among these five core dimensions. It offers practical implications for optimizing digitalized teacher management and improving management effectiveness in private vocational institutions.

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Data Availability Statement: The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Conflicts of Interest: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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