

Digital Leadership and Organizational Climate in Higher Vocational and Technical Colleges in Guangzhou, China: The Mediating Effects of Organizational Support on Teachers' Work Performance

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ABSTRACT

The ongoing digital transformation has significantly reshaped leadership practices and organizational environments in vocational education institutions in China. In major metropolitan areas such as Guangzhou, higher vocational and technical colleges are increasingly required to integrate digital technologies into teaching, institutional management, and teacher professional development. Within this context, digital leadership and organizational climate have emerged as critical determinants of teachers' work performance. However, empirical evidence explaining how these organizational factors influence performance-particularly through organizational support mechanisms-remains limited in vocational education settings. This study aims to examine the direct and indirect effects of digital leadership and organizational climate on teachers' work performance, with organizational support conceptualized as a mediating variable. A quantitative research design was employed using survey data collected from teachers in public higher vocational and technical colleges in Guangzhou, China. Stratified random sampling was used to ensure proportional representation across institutions. Data were analyzed using Confirmatory Factor Analysis (CFA) to validate the measurement model, followed by Structural Equation Modeling (SEM) to test the hypothesized relationships. The results indicate that both digital leadership and organizational climate have significant positive direct effects on teachers' work performance. In addition, organizational support was found to partially mediate the relationships between digital leadership and teachers' work performance, as well as between organizational climate and teachers' work performance. These findings suggest that leadership practices and organizational environments are more effective in enhancing teacher performance when they are translated into tangible and perceived institutional support. The study contributes to the literature by providing empirical evidence on the mediating role of organizational support and offers practical implications for strengthening digital leadership and support systems in vocational education.

Keywords: Digital leadership, Organizational climate, Organizational support, Teachers' work performance, Higher vocational colleges

ภาวะผู้นำดิจิทัลและบรรยากาศองค์กรในวิทยาลัยอาชีวศึกษาและเทคนิคขั้นสูงในเมืองกว่างโจว

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บทคัดย่อ

การเปลี่ยนผ่านสู่ยุคดิจิทัลได้ส่งผลอย่างมีนัยสำคัญต่อรูปแบบภาวะผู้นำและสภาพแวดล้อมขององค์กรในสถาบันอาชีวศึกษาในประเทศจีน โดยเฉพาะในเขตเมืองขนาดใหญ่ เช่น เมืองกว่างโจว ซึ่งวิทยาลัยอาชีวศึกษาและเทคนิคขั้นสูงถูกคาดหวังให้บูรณาการเทคโนโลยีดิจิทัลเข้าสู่การจัดการเรียนการสอน การบริหารจัดการองค์กร และการพัฒนาวิชาชีพครูอย่างเข้มข้น ภายใต้บริบทดังกล่าว ภาวะผู้นำดิจิทัลและบรรยากาศองค์กรจึงเป็นปัจจัยสำคัญที่ส่งผลต่อประสิทธิภาพการปฏิบัติงานของครู อย่างไรก็ตาม งานวิจัยเชิงประจักษ์ที่อธิบายกลไกความสัมพันธ์ของปัจจัยด้านองค์กรดังกล่าวต่อผลการปฏิบัติงาน โดยเฉพาะบทบาทของการสนับสนุนจากองค์กรในฐานะตัวแปรส่งผ่าน ยังมีอยู่อย่างจำกัดในบริบทของอาชีวศึกษาการวิจัยนี้มีวัตถุประสงค์เพื่อศึกษาผลกระทบทั้งทางตรงและทางอ้อมของภาวะผู้นำดิจิทัลและบรรยากาศองค์กรที่มีต่อประสิทธิภาพการปฏิบัติงานของครู โดยกำหนดให้การสนับสนุนจากองค์กรเป็นตัวแปรส่งผ่าน การวิจัยใช้ระเบียบวิธีเชิงปริมาณ โดยเก็บรวบรวมข้อมูลจากครูในวิทยาลัยอาชีวศึกษาและเทคนิคของรัฐในเมืองกว่างโจว ประเทศจีน ด้วยวิธีการสุ่มตัวอย่างแบบแบ่งชั้น เพื่อให้เกิดความเป็นตัวแทนของแต่ละสถาบัน การวิเคราะห์ข้อมูลดำเนินการโดยใช้การวิเคราะห์องค์ประกอบเชิงยืนยัน (Confirmatory Factor Analysis: CFA) เพื่อตรวจสอบความตรงของโมเดลการวัด และการวิเคราะห์สมการโครงสร้าง (Structural Equation Modeling: SEM) เพื่อทดสอบสมมติฐานการวิจัยผลการวิจัยพบว่า ภาวะผู้นำดิจิทัลและบรรยากาศองค์กรมีอิทธิพลทางตรงเชิงบวกอย่างมีนัยสำคัญต่อประสิทธิภาพการปฏิบัติงานของครู นอกจากนี้ การสนับสนุนจากองค์กรยังทำหน้าที่เป็นตัวแปรส่งผ่านบางส่วนในความสัมพันธ์ระหว่างภาวะผู้นำดิจิทัลกับประสิทธิภาพการปฏิบัติงานของครู รวมถึงระหว่างบรรยากาศองค์กรกับประสิทธิภาพการปฏิบัติงานของครูผลการศึกษาชี้ให้เห็นว่า แนวปฏิบัติด้านภาวะผู้นำและสภาพแวดล้อมขององค์กรจะสามารถยกระดับประสิทธิภาพการปฏิบัติงานของครูได้อย่างมีประสิทธิภาพมากยิ่งขึ้น เมื่อได้รับการสนับสนุนจากองค์กรทั้งในเชิงรูปธรรมและการรับรู้ของบุคลากรอย่างชัดเจน

คำสำคัญ: ภาวะผู้นำดิจิทัล, บรรยากาศองค์กร, การสนับสนุนจากองค์กร, ประสิทธิภาพการปฏิบัติงานของครู, วิทยาลัยอาชีวศึกษา

Introduction

In recent years, digital transformation has become a major force reshaping education systems worldwide. In China, national initiatives related to smart education, digital governance, and the modernization of vocational education have accelerated the integration of digital technologies across educational institutions (Al-Harbi et al., 2022). These developments are particularly evident in large metropolitan areas such as Guangzhou, where higher vocational and technical colleges play a critical role in preparing a skilled workforce aligned with the evolving demands of the digital economy. As digital technologies increasingly permeate teaching practices, learning processes, and institutional management, leadership approaches and organizational conditions within vocational colleges have undergone substantial transformation.

Within this evolving context, digital leadership has emerged as a key factor in enabling educational institutions to navigate ongoing digital change. Digital leadership extends beyond technical competence to include the articulation of a clear digital vision, the promotion of technology-enhanced pedagogy, and the cultivation of an organizational culture that supports innovation and continuous learning (Cortellazzo et al., 2019). In higher vocational and technical colleges where practice-oriented instruction and strong industry–education linkages are central effective digital leadership is essential for aligning institutional development with rapid technological advancement and labor market demands. At the same time, organizational climate represents an important contextual factor influencing teachers' professional experiences and work performance.

Organizational climate refers to shared perceptions among organizational members regarding leadership practices, communication patterns, management systems, and collegial relationships within an institution. A positive organizational climate can foster trust, collaboration, and professional commitment, which are particularly important in vocational education settings characterized by high workloads, continuous curriculum adaptation, and increasing expectations for digital integration.

In addition, organizational support constitutes a critical mechanism through which leadership practices and organizational climate translate into individual performance outcomes. Teachers' perceptions that their institution values their contributions and supports their professional well-being can enhance motivation, reduce resistance to change, and facilitate the adoption of innovative teaching practices. In the context of digital transformation, organizational support such as access to technological resources, professional development opportunities, and socio-emotional support plays a vital role in mitigating technostress and strengthening teachers' adaptive capacity.

Despite growing scholarly attention to digital leadership, organizational climate, and teacher performance, existing research has several limitations. First, prior studies have predominantly focused on general higher education contexts, with limited attention to higher vocational and technical colleges. Second, these constructs have often been examined in isolation, resulting in a fragmented understanding

of their interrelationships. Third, empirical evidence integrating digital leadership, organizational climate, and organizational support within a comprehensive structural framework remains scarce, particularly in rapidly digitalizing vocational education contexts. Furthermore, the mediating role of organizational support in linking leadership and organizational factors to teachers' work performance has not been sufficiently examined.

To address these gaps, this study empirically tests a structural model examining the direct and indirect effects of digital leadership and organizational climate on teachers' work performance, with organizational support conceptualized as a mediating variable. By focusing on higher vocational and technical colleges in Guangzhou, China, the study provides context-specific empirical evidence and contributes to a more integrated understanding of how leadership and organizational conditions shape teacher performance in digitally transforming vocational education systems.

Objectives

1.To develop and propose a structural model examining the effects of digital leadership and organizational climate on teachers' work performance in higher vocational and technical colleges in Guangzhou, China, with organizational support serving as a mediating variable.

2.To investigate the direct effects of digital leadership and organizational climate on teachers' work performance in higher vocational and technical colleges in Guangzhou, China.

3.To examine the mediating role of organizational support in the relationships between digital leadership and teachers' work performance, and between organizational climate and teachers' work performance in higher vocational and technical colleges in Guangzhou, China.

Methodology

Research Design

This study employed a quantitative research design using a cross-sectional survey to examine the relationships among digital leadership, organizational climate, organizational support, and teachers' work performance in higher vocational and technical colleges in Guangzhou, China. Structural Equation Modeling (SEM) was utilized as the primary analytical technique to test the proposed conceptual framework, including both direct and indirect (mediating) effects.

Population and Sample

The target population comprised full-time teachers working in public higher vocational and technical colleges in Guangzhou, China. A stratified random sampling technique was employed to ensure proportional representation across institutions and academic departments.

The final sample consisted of $N = 420$ respondents, which satisfies recommended sample size requirements for SEM analysis. The sample size was deemed adequate based on commonly accepted

criteria, including minimum sample-to-parameter ratios and statistical power considerations for structural modeling.

Research Instrument

Data were collected a structured questionnaire developed based on established theoretical frameworks and prior empirical studies. The instrument consisted of five sections:

demographic information, digital leadership, organizational climate, organizational support, and teachers' work performance.

All items were measured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Content validity was assessed by a panel of experts using the Index of Item–Objective Congruence (IOC), with all items meeting acceptable thresholds. A pilot study was conducted to evaluate the clarity and reliability of the instrument. Internal consistency reliability was assessed using Cronbach's alpha coefficients, all of which exceeded the recommended threshold of 0.70.

Data Collection Procedure

Data were collected through self-administered questionnaires distributed to teachers with the support of institutional administrators. Participation was voluntary, and respondents were informed about the purpose of the study, the confidentiality of their responses, and their right to withdraw at any time.

Both online and paper-based survey formats were employed to maximize response rates, depending on institutional accessibility and preferences.

Data Analysis

Data analysis was conducted in several stages. First, descriptive statistics were used to summarize respondents' demographic characteristics. Second, Confirmatory Factor Analysis (CFA) was performed to assess the measurement model, including construct validity, convergent validity, and discriminant validity. Convergent validity was evaluated using factor loadings, composite reliability (CR), and average variance extracted (AVE), while discriminant validity was assessed using the Fornell–Larcker criterion.

Third, Structural Equation Modeling (SEM) was employed to test the hypothesized relationships among digital leadership, organizational climate, organizational support, and teachers' work performance. The mediating effects of organizational support were examined using the bootstrapping method with 5,000 resamples to obtain bias-corrected confidence intervals.

Model fit was evaluated using multiple goodness-of-fit indices, including chi-square divided by degrees of freedom (χ^2/df), Goodness-of-Fit Index (GFI), Adjusted Goodness-of-Fit Index (AGFI), Comparative Fit Index (CFI), Tucker–Lewis Index (TLI), Root Mean Square Residual (RMR), and Root Mean Square Error of Approximation (RMSEA). All indices were assessed against commonly accepted threshold values.

Conceptual Framework

This study proposes a conceptual framework to examine the relationships among digital leadership, organizational climate, organizational support, and teachers' work performance in higher vocational and technical colleges in Guangzhou, China. The framework is grounded in educational leadership theory, organizational behavior theory, and perceived organizational support theory, which collectively explain how leadership practices and organizational conditions influence individual performance outcomes within digitally transforming educational institutions.

In the proposed model, digital leadership and organizational climate are specified as exogenous variables representing key organizational and leadership factors. Digital leadership reflects institutional leaders' capacity to articulate a clear digital vision, promote technology-enhanced teaching and learning, and foster an innovation-oriented organizational culture. Organizational climate represents teachers' shared perceptions of leadership practices, communication patterns, management systems, and collegial relationships within their institutions.

Organizational support is conceptualized as a mediating variable that captures teachers' perceptions of the extent to which their institution values their contributions and supports their professional well-being. This includes both instrumental support—such as access to technological resources and professional development—and socio-emotional support, including recognition, fairness, and care for employee well-being. The framework assumes that effective digital leadership and a positive organizational climate enhance perceived organizational support by creating supportive policies, resource availability, and transparent management practices.

Teachers' work performance is defined as the endogenous outcome variable, encompassing instructional effectiveness, curriculum development, applied research, and engagement with industry and community partners. These dimensions reflect the core mission of higher vocational and technical education.

The framework posits that digital leadership and organizational climate exert both direct and indirect effects on teachers' work performance. Specifically, organizational support functions as a mediating mechanism through which leadership practices and organizational conditions translate into improved performance outcomes. This integrated framework provides a comprehensive explanation of how leadership, organizational context, and support systems interact to influence teacher performance in the context of digital transformation.

Conceptual Model Structure

Digital Leadership → Organizational Support

Organizational Climate → Organizational Support

Organizational Support → Teachers' Work Performance

Digital Leadership → Teachers' Work Performance

Organizational Climate → Teachers' Work Performance

Figure X. Conceptual framework illustrating the direct and mediating effects of digital leadership and organizational climate on teachers' work performance through organizational support.

Direct Effects

Digital Leadership and Organizational Support

Digital leadership plays a critical role in shaping organizational practices and resource allocation in educational institutions. Leaders who demonstrate strong digital capabilities are more likely to provide adequate technological infrastructure, professional development opportunities, and strategic guidance, which enhance teachers' perceptions of organizational support.

H1: Digital leadership has a significant positive effect on organizational support. Organizational Climate and Organizational Support A positive organizational climate characterized by trust, open communication, and collaborative relationships fosters a supportive working environment. Such conditions enhance teachers' perceptions that their institution values their contributions and cares about their well-being.

H2: Organizational climate has a significant positive effect on organizational support. Digital Leadership and Teachers' Work Performance Digital leadership enables the effective integration of technology into teaching and learning processes, thereby improving instructional quality and professional effectiveness. Leaders who promote innovation and digital competencies can directly enhance teachers' work performance.

H3: Digital leadership has a significant positive effect on teachers' work performance. Organizational Climate and Teachers' Work Performance A supportive and positive organizational climate contributes to higher levels of motivation, job satisfaction, and professional commitment among teachers, which in turn enhances their performance.

H4: Organizational climate has a significant positive effect on teachers' work performance. Organizational Support and Teachers' Work Performance According to perceived organizational support theory, employees who perceive higher levels of support from their organization are more likely to reciprocate through improved performance. Organizational support provides both the resources and psychological conditions necessary for effective job performance.

H5: Organizational support has a significant positive effect on teachers' work performance. Mediating Effects The Mediating Role of Organizational Support Organizational support is expected to function as a key mechanism linking leadership and organizational conditions to performance outcomes. Digital leadership and organizational climate may enhance teachers' work performance indirectly by strengthening perceived organizational support.

H6: Organizational support mediates the relationship between digital leadership and teachers' work performance.

H7: Organizational support mediates the relationship between organizational climate and teachers' work performance.

Results

Objective 1: To develop and validate the structural model

The results of the measurement model assessment indicated satisfactory construct validity and reliability. Confirmatory Factor Analysis (CFA) showed that all observed variables loaded significantly on their respective latent constructs, with standardized factor loadings ranging from 0.69 to 0.86 ($p < 0.001$). Composite reliability (CR) values ranged from 0.79 to 0.84, and average variance extracted (AVE) values ranged from 0.53 to 0.64, indicating adequate convergent validity. Discriminant validity was also established, as the square roots of AVE exceeded the inter-construct correlations.

Fit Indices	Recommended Criteria	Obtained Value	Interpretation
χ^2/df	< 5.00	3.11	Acceptable
GFI	≥ 0.90	0.941	Good fit
AGFI	≥ 0.90	0.913	Good fit
CFI	≥ 0.90	0.949	Good fit
TLI	≥ 0.90	0.935	Good fit
RMR	≤ 0.08	0.015	Good fit
RMSEA	≤ 0.08	0.066	Acceptable

The overall structural model demonstrated a good fit with the empirical data. As presented in Table 1, all goodness-of-fit indices met the recommended thresholds ($\chi^2/df = 3.11$, GFI = 0.941, AGFI = 0.913, CFI = 0.949, TLI = 0.935, RMR = 0.015, RMSEA = 0.066). These findings confirm that the proposed structural model is appropriate for explaining the relationships among digital leadership, organizational climate, organizational support, and teachers' work performance.

The overall structural model exhibited a good fit with the empirical data. The fit indices indicated that the proposed model was consistent with the observed data ($\chi^2/df = 3.11$, GFI = 0.941, AGFI = 0.913, CFI = 0.949, TLI = 0.935, RMR = 0.015, RMSEA = 0.066). These results confirm that the proposed structural model is appropriate for explaining the relationships among digital leadership, organizational climate, organizational support, and teachers' work performance in higher vocational and technical colleges in Guangzhou, China.

Objective 2: To examine the direct effects of digital leadership and organizational climate on teachers' work performance

The results of the structural model are presented in Table 2. Digital leadership had a significant positive effect on organizational support ($\beta = 0.619$, $p < 0.001$), while organizational climate also significantly influenced organizational support ($\beta = 0.281$, $p < 0.001$).

In addition, digital leadership exerted a significant positive direct effect on teachers' work performance ($\beta = 0.215$, $p < 0.05$), and organizational climate also had a significant positive effect ($\beta = 0.163$, $p < 0.01$). Organizational support demonstrated a strong positive effect on teachers' work performance ($\beta = 0.345$, $p < 0.001$).

Hypothesis	Path	β (Standardized)	p-value	Result
H1	Digital Leadership $\rightarrow$ Organizational Support	0.619	< 0.001	Supported
H2	Organizational Climate $\rightarrow$ Organizational Support	0.281	< 0.001	Supported
H3	Digital Leadership $\rightarrow$ Teachers' Work Performance	0.215	< 0.05	Supported
H4	Organizational Climate $\rightarrow$ Teachers' Work Performance	0.163	< 0.01	Supported
H5	Organizational Support $\rightarrow$ Teachers' Work Performance	0.345	< 0.001	Supported

These findings support Hypotheses H1–H5. Together, digital leadership and organizational climate explained a substantial proportion of variance in teachers' work performance ($R^2 = 0.47$), indicating moderate explanatory power.

Objective 3: To examine the mediating role of organizational support

The mediating effects of organizational support were tested using bootstrapping procedures. As shown in Table 3, organizational support significantly mediated the relationship between digital leadership and teachers' work performance ($\beta = 0.214$, $p < 0.001$), as well as between organizational climate and teachers' work performance ($\beta = 0.097$, $p < 0.05$).

Table 3 Indirect (Mediating) Effects of Organizational Support

Hypothesis	Path	β (Standardized)	p-value	Result
H6	Digital Leadership $\rightarrow$ Organizational Support $\rightarrow$ Teachers' Work Performance	0.214	< 0.001	Supported (Partial Mediation)
H7	Organizational Climate $\rightarrow$ Organizational Support $\rightarrow$ Teachers' Work Performance	0.097	< 0.05	Supported (Partial Mediation)

These results support Hypotheses H6 and H7, indicating partial mediation in both relationships. Furthermore, as presented in Table 4, the inclusion of organizational support increased the explained variance in teachers' work performance from $R^2 = 0.47$ to $R^2 = 0.52$, demonstrating that the mediating variable contributed additional explanatory power to the model.

Table 4 Explained Variance (R^2) of Endogenous Variables

Endogenous Variable	R^2	Interpretation
Organizational Support	0.48	Moderate explanatory power
Teachers' Work Performance	0.52	Moderate to high explanatory power

Furthermore, the indirect effect of digital leadership on teachers' work performance through organizational support was statistically significant ($\beta = 0.214$, $p < 0.001$), indicating partial mediation. Similarly, organizational climate had a significant indirect effect on teachers' work performance via organizational support ($\beta = 0.097$, $p < 0.05$). The mediating mechanism accounted for additional variance in teachers' work performance, increasing the explained variance of the outcome variable to $R^2 = 0.52$ in the full mediation model.

Table 5. Results of Confirmatory Factor Analysis (CFA)

Construct	Item	Loading	CR	AVE
Digital Leadership	DL1	0.72	0.82	0.56
	DL2	0.81		
	DL3	0.78		
Organizational Climate	OC1	0.69	0.79	0.53
	OC2	0.75		
	OC3	0.74		
Organizational Support	OS1	0.84	0.84	0.64
	OS2	0.79		
	OS3	0.77		
Teachers' Work Performance	TP1	0.86	0.83	0.60
	TP2	0.80		

Table 6. Path Coefficients of the Structural Model

Hypothesis	Path	β	SE	p-value	Result
H1	DL $\rightarrow$ OS	0.619	0.041	<0.001	Supported
H2	OC $\rightarrow$ OS	0.281	0.038	<0.001	Supported
H3	DL $\rightarrow$ TP	0.215	0.052	<0.05	Supported
H4	OC $\rightarrow$ TP	0.163	0.047	<0.01	Supported
H5	OS $\rightarrow$ TP	0.345	0.039	<0.001	Supported

Table 7. Indirect Effects (Bootstrapping Results)

Hypothesis	Indirect Path	β	95% CI	p-value	Mediation
H6	DL $\rightarrow$ OS $\rightarrow$ TP	0.214	[0.162, 0.278]	<0.001	Partial
H7	OC $\rightarrow$ OS $\rightarrow$ TP	0.097	[0.041, 0.153]	<0.05	Partial

Table 8. Explained Variance (R^2)

Variable	R^2	Interpretation
Organizational Support	0.48	Moderate
Teachers' Work Performance (Direct)	0.47	Moderate
Teachers' Work Performance (Full Model)	0.52	Moderate-High

Discussion

The findings of this study provide robust empirical support for the integrated role of digital leadership, organizational climate, and organizational support in shaping teachers' work performance within the context of vocational education undergoing digital transformation. The structural model demonstrated a satisfactory fit with the empirical data, confirming that teacher performance is best understood as a function of interrelated leadership and organizational factors rather than isolated influences.

First, digital leadership was found to exert a significant positive direct effect on teachers' work performance. This finding underscores the critical role of leadership in facilitating digital transformation within educational institutions. Leaders who articulate a clear digital vision, promote technology integration, and foster innovation-oriented organizational cultures can directly enhance teachers' instructional effectiveness and professional engagement. In the context of higher vocational education where alignment with industry demands and technological advancement is essential digital leadership functions as a strategic driver of performance improvement.

Second, organizational climate also demonstrated a significant positive effect on teachers' work performance. A positive organizational climate characterized by trust, open communication, and collaborative relationships enhances teachers' motivation, commitment, and effectiveness. This finding reinforces the view that teachers' perceptions of their work environment play a crucial role in shaping their professional performance, particularly in contexts marked by high workload demands and continuous adaptation to digital and industry-related changes.

More importantly, the results highlight the central mediating role of organizational support. Both digital leadership and organizational climate significantly predicted organizational support, which in turn exerted the strongest direct effect on teachers' work performance. This suggests that leadership practices and organizational environments influence performance outcomes primarily through the provision of tangible and perceived support mechanisms. Such mechanisms include access to digital resources, professional development opportunities, institutional recognition, and socio-emotional support.

Notably, the indirect effect of digital leadership on teachers' work performance ($\beta = 0.214$) was substantially stronger than that of organizational climate ($\beta = 0.097$). This indicates that leadership-driven support mechanisms may play a more influential role in enhancing teacher performance. One possible explanation is that digital leaders have a more direct impact on resource allocation, strategic prioritization, and the implementation of digital initiatives, thereby creating more immediate and visible support for teachers.

Overall, this study contributes to the existing literature by integrating leadership, organizational context, and support mechanisms into a unified explanatory framework. The findings extend prior research by demonstrating that organizational support is not merely an outcome of leadership and organizational climate, but a critical mediating mechanism through which these factors influence teachers' work performance in digitally transforming vocational education settings.

Recommendation

Practical and Policy Implications

Based on the empirical findings, several practical and policy implications can be derived to enhance teachers' work performance in higher vocational and technical colleges, particularly in the context of digital transformation.

Implications for Institutional Leadership and Policy

First, the significant direct and indirect effects of digital leadership suggest that institutions should prioritize the development of administrators' digital leadership competencies. Structured professional development programs focusing on strategic digital planning, data-informed decision-making, and innovation-oriented leadership are essential for effectively guiding institutional transformation.

Second, the positive effect of organizational climate highlights the importance of cultivating a supportive and collaborative work environment. Institutional leaders should promote participatory management practices, transparent communication, and professional collaboration to strengthen teachers' engagement and commitment.

Third, given the strong mediating role of organizational support, institutions should establish comprehensive support systems that address both instrumental and socio-emotional needs. This includes access to digital infrastructure, continuous professional development, technical assistance, and recognition mechanisms. The findings suggest that such support systems are critical in translating leadership practices and organizational conditions into improved performance outcomes.

Fourth, institutions should align teacher evaluation and career development systems with digital transformation goals. Incorporating digital competencies and innovative teaching practices into performance appraisal frameworks can encourage teachers to actively engage in digital pedagogy and continuous professional learning.

Implications for Teaching Practice and Professional Development

The findings indicate that teachers' work performance can be enhanced through sustained professional development in digital pedagogy. Training programs should extend beyond technical skills to include pedagogical integration of digital tools, blended learning design, and data-driven instructional strategies.

In addition, institutions should provide targeted support to mitigate technostress and resistance to change. Flexible training approaches, differentiated support, and well-being initiatives can help teachers adapt more effectively to digital transformation and maintain high levels of professional performance.

Implications for Future Research

Future research should adopt longitudinal and comparative designs to examine how the relationships identified in this study evolve across different institutional contexts and over time.

Furthermore, incorporating additional variables such as digital self-efficacy, job satisfaction, and technostress may provide a more comprehensive understanding of teacher performance in digitally transforming environments.

Finally, mixed-method approaches are recommended to capture deeper contextual insights into teachers' experiences, thereby enriching the interpretation of quantitative findings and supporting more nuanced theoretical and practical contributions.

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