MEDIATING EFFECTS OF TEACHERS' SELF-EFFICACY ON RELATIONSHIP BETWEEN ADMINISTRATORS' INFORMATIZATION LEADERSHIP AND TEACHERS' INFORMATIZATION ABILITY IN HIGHER VOCATIONAL COLLEGES IN PINGDINGSHAN CITY HENAN PROVINCE

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Abstract

The objectives of this research were : (1) To examine the components of administrators' informatization leadership, teachers' informatization ability, and teachers' self-efficacy. (2) To propose a model of the mediating effect of teachers' self-efficacy on the relationship between administrators' informatization leadership and teachers' informatization ability in higher vocational colleges in Pingdingshan City Henan Province, the People's Republic of China. (3) To study the direct and indirect effects of administrators' informatization leadership on teachers' informatization ability and teachers' self-efficacy. This research adopted a quantitative research method. Through proportional stratified random sampling, 339 teachers were selected from a total population of 2,452 teachers across four higher vocational colleges in Pingdingshan City, Henan Province.

The research results were found that : (1) Administrators' informatization leadership included 4 components: informatization literacy ability, informatization planning ability, informatization management ability and informatization evaluation ability. Teachers' informatization ability included 5 components: informatization awareness and attitude, informatization knowledge and skills, informatization implementation ability, teaching research and development ability, and vocational practice ability. Teachers' self-efficacy, included 3 components: teaching strategy efficacy, classroom management efficacy, student engagement efficacy; (2) The proposed SEM fit the empirical data well: relative Chi-square = 2.883 (less than 3), CFI = 0.983 and TLI = 0.977 (both more than 0.95), SRMR = 0.032 (below 0.05). Although RMSEA = 0.075 (< 0.08), it remained within the acceptable range; and (3) administrators' informatization leadership and teachers' informatization ability have a statistically significant indirect effect on teachers' informatization ability through teachers' self-efficacy.

Keywords : Administrators' Informatization Leadership, Teachers' Informatization Ability, Teachers' Self-Efficacy, Higher Vocational Colleges.

Background and significance of the problem

In the context of digital transformation and integration with the knowledge economy, teachers' informatization ability has emerged as a crucial determinant of talent cultivation quality in higher vocational institutions. National policies, including the Education Informatization 2.0 Action Plan (Ministry of Education of the People's Republic of China , 2012) and China Education Modernization 2035 (The Central Committee of the Communist Party of China & The State Council, 2019), explicitly prioritize the enhancement of teachers' digital literacy and institutional informatization leadership as key strategic objectives.

In higher vocational education, administrators' informatization leadership is central to improving teachers' informatization ability through strategic planning, resource allocation, and governance coordination. Effective integration of information technology with pedagogy also depends on teachers' capabilities in instructional design, implementation, and evaluation within technology-enhanced environments (Paetsch, 2023).

Bandura (1977) defined self-efficacy as individuals' beliefs in their ability to organize and implement action plans to attain specific goals. In educational settings, teacher self-efficacy directly affects instructional innovation, commitment, and professional engagement (Tschannen-Moran, et al., 1998). Teachers with higher ICT self-efficacy show greater confidence and initiative in integrating digital technologies into teaching, thus significantly improving their informatization competence (Šabić, et al., 2022; Paetsch, 2023).

Despite the recognized importance of teacher self-efficacy, research on its mediating role between administrators' informatization leadership and teachers' informatization ability remains limited in Chinese higher vocational education, especially empirical studies on vocational colleges in Pingdingshan, Henan Province. This research constructs a structural equation model involving administrators' informatization leadership, teacher self-efficacy and teacher informatization competence, focusing on testing the mediating effect of self-efficacy. The results can provide theoretical and practical references for higher vocational colleges in Pingdingshan and similar regions, promoting informatization reform and the quality of vocational education.

Research objectives

The objectives of this study were as follows:

1. To examine the components of administrators' informatization leadership, teachers' informatization ability, and teachers' self-efficacy.

2. To propose a model of the mediating effect of teachers' self-efficacy on the relationship between administrators' informatization leadership and teachers' informatization ability in higher vocational colleges in Pingdingshan City Henan Province.

3. To study the direct and indirect effects of administrators' informatization leadership on teachers' informatization ability and teachers' self-efficacy.

Conceptual Framework

This research established a conceptual framework to clarify the direct and mediating relationships among core variables. Based on this framework, a Structural Equation Model (SEM) was constructed to test the hypothesized relationships.

1. Administrators' Informatization Leadership (AIL) : Refers to vocational college administrators' strategic and execution abilities to guide and promote informational transformation. Including four components: (1) Informatization Literacy Ability (ILA), (2) Informatization Planning Ability (IPA), (3) Informatization Management Ability (IMA), and (4) Informatization Evaluation Ability (IEA).

2. Teachers' Informatization Ability (TIA) : Refers to comprehensive professional ability reflecting teachers' capacity to effectively integrate information technology into vocational teaching Including five components: (1)Informatization Awareness and Attitude (IAA), (2) Informatization Knowledge and Skills (IKS), (3)Informatization Implementation Ability (IIA), (4) Vocational Practice Ability (VPA), and (5) Teaching Research and Development Ability (RDA).

3. Teachers' Self-Efficacy (TSE) : Refers to teachers' beliefs in their ability to successfully perform teaching related tasks in educational settings. It includes three components: (1)Teaching

Strategy Efficacy (SE), (2) Classroom Management Efficacy (CME), and (3) Student Engagement Efficacy (SEE).

Research Hypothesis

H1: Administrators' informatization leadership has a direct effect on teachers' informatization ability.

H2: Administrators' informatization leadership has a direct effect on teachers' self-efficacy.

H3: Teachers' self-efficacy has a direct effect on teachers' informatization ability.

H4: Administrators' informatization leadership has an indirect effect on teachers' informatization ability through teachers' self-efficacy.

Research Methodology

Research Design

This research used a quantitative approach to examine the relationships among administrators' informatization leadership, teachers' informatization ability, and teachers' self-efficacy in higher vocational colleges. CFA assessed measurement instrument construct validity, and SEM examined direct and indirect variable relationships.

Population and Sample

The population was 2,542 full-time teachers from four higher vocational colleges in Pingdingshan City, Henan Province. G*Power determined the sample size (W=0.30, α=0.05, df=51, power=0.80 via chi-square test). Stratified random sampling selected 339 teachers as the sample.

Research Instruments

The data were collected through a questionnaire survey consisting of three parts: (1) demographics (gender, age, education, professional title, teaching experience); (2) a 5-point Likert scale (1 = strongly disagree, 5=strongly agree) measuring Administrators' Informatization Leadership, teachers' informatization ability, and Teachers' Self-Efficacy (items based on research objectives/theories). Five experts validated content (IOC = 0.60–1.00); overall Cronbach's alpha = 0.977 (excellent reliability); (3) open-ended questions on Administrators' Informatization Leadership and teachers' informatization practices.

Data Collection

Data were collected via a structured 5-point Likert scale questionnaire on Wenjuanxing. The final sample was 339 teachers from 4 higher vocational colleges in Pingdingshan City, Henan Province.

Data Analysis

Data were analyzed using descriptive (percentages, means, SD, skewness, kurtosis) and inferential (CFA, SEM) statistics.

Research Result

1. Demographic Information Analysis

Data were collected through questionnaires. Respondents' demographic characteristics are presented in Table 1.

Table 1: The demographics of the respondents (n = 339)

Level	Frequency	Percentage (%)
1. Gender		
Male	165	48.67
Female	174	51.33

2. Age		
Under 31 years old	74	21.28
31-40 years old	152	44.84
41-50 years old	88	25.96
Over 50 years old	25	7.37
3. Edu		
Bachelor	44	12.98
Master	264	77.88
Doctorate	31	9.14
4. Exp		
≤5 years	84	24.78
6-10 years	121	35.69
11-20 years	109	32.15
Over 20 years	25	7.37
5. Title		
Assistant Lecturer	74	21.83
Lecturer	139	41.00
Associate Professor	98	28.91
Professor	28	8.26

From table 1, the study surveyed 339 teachers from 4 higher vocational colleges in Pingdingshan City, Henan Province. Males comprised 48.67% and females 51.33%. Most were aged 31–40 (44.84%). Master's holders dominated (77.88%), while doctoral degree holders accounted for 9.14% and bachelor's degree holders 12.98%. Those with 6–10 years of teaching experience formed the largest group (35.69%), followed by 11–20 years (32.15%). Lecturers constituted 41.00%, associate professors 28.91%, assistant lecturers 21.83%, and professors 8.26%.

2. The result of objective 1

Administrators' Informatization Leadership (AIL) consisted of 4 components: Informatization Literacy Ability (ILA), Informatization Planning Ability (IPA), Informatization Management Ability (IMA), and Informatization Evaluation Ability (IEA).

Teachers' informatization ability (TIA) consisted of 5 components: Informatization Awareness and Attitude (IAA), Informatization Knowledge and Skills (IKS), Informatization Implementation Ability (IIA), Vocational Practice Ability (VPA), and Teaching Research and Development Ability (RDA).

Teachers' Self-Efficacy (TSE) consisted of 3 components: Teaching Strategy Efficacy (SE), Classroom Management Efficacy (CME), and Student Engagement Efficacy (SEE).

3. Results of Confirmatory Factor Analysis (CFA) for Research Objective 2

1) Descriptive Statistics of Main Variables

Data descriptive analysis on mean, standard deviation, Skewness and Kurtosis from the questionnaires, as the table 2.

Table 2: mean, standard deviation, Skewness and Kurtosis

Variable list	$\bar{x}$	S.D.	Sk.	Ku.	Level
AIL	3.641	1.151	-0.726	-1.289	High
ILA	3.671	1.210	-0.777	-1.143	High
IPA	3.593	1.233	-0.662	-1.346	High

IMA	3.643	1.169	-0.729	-1.328	High
IEA	3.687	1.230	-0.810	-0.996	High
TIA	3.564	1.198	-0.609	-1.481	High
IAA	3.556	1.284	-0.645	-1.318	High
IKS	3.580	1.230	-0.633	-1.381	High
IIA	3.589	1.237	-0.640	-1.447	High
VPA	3.525	1.274	-0.644	-1.304	High
RDA	3.541	1.302	-0.627	-1.323	High
TSE	3.461	1.226	-0.459	-1.523	Medium
SE	3.456	1.338	-0.534	-1.385	Medium
CME	3.485	1.315	-0.515	-1.459	Medium
SEE	3.440	1.307	-0.504	-1.437	Medium

As shown in Table 2, the mean values of all variables ranged from 3.440 to 3.687, indicating a relatively high level of agreement. Standard deviations ranged from 1.151 to 1.338, suggesting moderate response variability. Absolute values of skewness were all below 1 and kurtosis below 2, indicating that the data approximated a normal distribution. Thus, the basic assumptions for hypothesis testing in this study are satisfied.

2) The Correlations Between Latent Variables

Table 3 shows the correlations among first-order latent variables. All correlation coefficients were positive and significant at the 0.01 level. Strong correlations were found within each construct: components of Administrators' Informatization Leadership ranged from 0.858 to 0.942; Teachers' Informatization Ability from 0.807 to 0.978; and Teachers' Self-Efficacy from 0.786 to 0.809.

Table 3 Correlation Matrix of All First-Order Latent Variables

Variables	Correlations											
	ILA	IPA	IMA	IEA	IAA	IKS	IIA	VPA	RDA	SE	CME	SEE
ILA	1											
IPA	.912**	1										
IMA	.885**	.858**	1									
IEA	.942**	.892**	.865**	1								
IAA	.217**	.217**	.217**	.217**	1							
IKS	.217**	.217**	.217**	.217**	.887**	1						
IIA	.217**	.217**	.217**	.217**	.978**	.895**	1					
VPA	.217**	.217**	.217**	.217**	.846**	.852**	.847**	1				
RDA	.217**	.217**	.217**	.217**	.855**	.861**	.862**	.807**	1			
SE	.225**	.225**	.225**	.225**	.253**	.253**	.253**	.253**	.253**	1		
CME	.225**	.225**	.225**	.225**	.253**	.253**	.253**	.253**	.253**	.809**	1	
SEE	.225**	.225**	.225**	.225**	.253**	.253**	.253**	.253**	.253**	.788**	.786**	1

$p < 0.05^{*}, {}^{*}p < 0.01.$

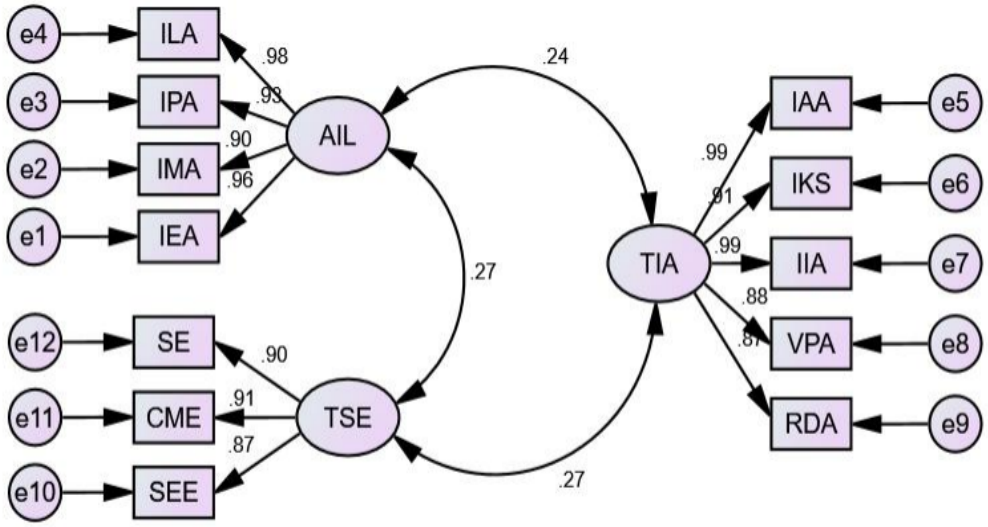
Table 4 indicates moderate correlations among the three second-order constructs (0.217–0.253). All values were well below the 0.80 threshold, showing no serious multicollinearity.

Table 4: Correlations Between AIL, TIA, and TSE

Latent Variables	AIL	TIA	TSE
AIL	1		
TIA	0.217**	1	
TSE	0.225**	0.253**	1

3) CFA Model specification

The standardized measurement model, including latent variables and their corresponding indicators.



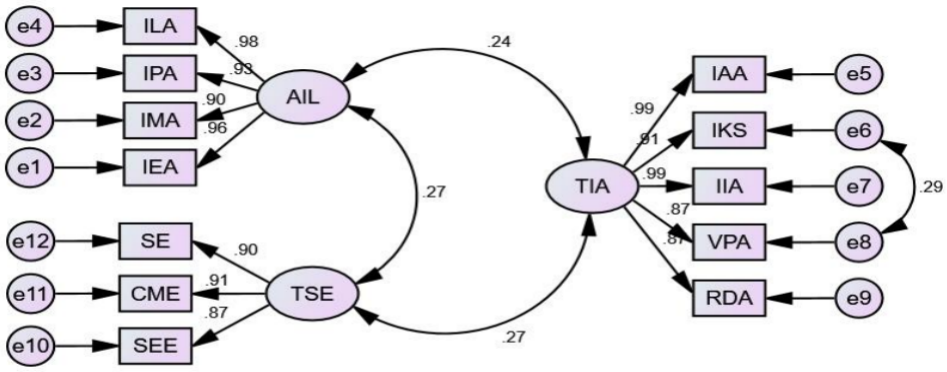
Chi-square=171.881, Df=51, CFI=0.978, TLI=0.971, SRMR=0.032, RMSEA=0.084

Figure 2 CFA Model (Unstandardized estimates)

The measurement model contained three second-order constructs: Administrators' Informatization Leadership (AIL), Teachers' Informatization Ability (TIA), and Teachers' Self-Efficacy (TSE).

AIL was measured by four dimensions with standardized loadings of 0.90–0.98; TIA comprised five dimensions with loadings of 0.88–0.99; TSE included three dimensions with loadings of 0.87–0.91. All factor loadings were significant and above the 0.70 threshold, supporting convergent validity (Hair, et al., 2019).

The correlations among the three higher-order constructs were moderate (r = 0.24–0.27) and below the 0.80 threshold, indicating acceptable discriminant validity without severe multicollinearity (Fornell and Larcker, 1981). Overall, the measurement model possessed sufficient validity for further structural analysis.



Chi-square=144.136, Df=50, CFI=0.983, TLI=0.977, SRMR=0.032, RMSEA=0.075

Figure 3 CFA Model (Standardized estimates)

4) Model validity and reliability analysis

(1) Measurement Model Fit

Confirmatory factor analysis (CFA) evaluated the measurement model, which showed satisfactory fit: χ^2 = 144.136, df = 50, χ^2/df = 2.883. CFI = 0.983 and TLI = 0.977 (both > 0.95), indicating excellent incremental fit; SRMR = 0.032 (< 0.05), showing minimal residual discrepancies. RMSEA = 0.075, slightly exceeding 0.05 but within the acceptable range (< 0.08) (Hu and Bentler, 1999; Hair, et al., 2019). Overall, the measurement model had adequate global fit.

(2) Reliability and Convergent Validity

All factor loadings were significant at p < 0.001, ranging from 0.878 to 1.051 (> 0.70), indicating satisfactory indicator reliability (Hair, et al., 2019). Composite reliability (CR) and average variance extracted (AVE) assessed construct reliability and convergent validity (Fornell and Larcker, 1981). As shown in Table 5, CR values (0.920–0.971) and AVE values (0.794–0.892) exceeded the 0.70 and 0.50 thresholds, respectively, confirming adequate internal consistency and convergent validity.

Table 5 Composite Reliability (CR), Average Variance Extracted (AVE), and Discriminant Validity (Fornell–Larcker Criterion)

Factors	CR	AVE	AIL	TIA	TSE
AIL	0.971	0.892	0.945		
TIA	0.969	0.863	0.237	0.928	
TSE	0.920	0.794	0.268	0.274	0.891

(3) Discriminant Validity

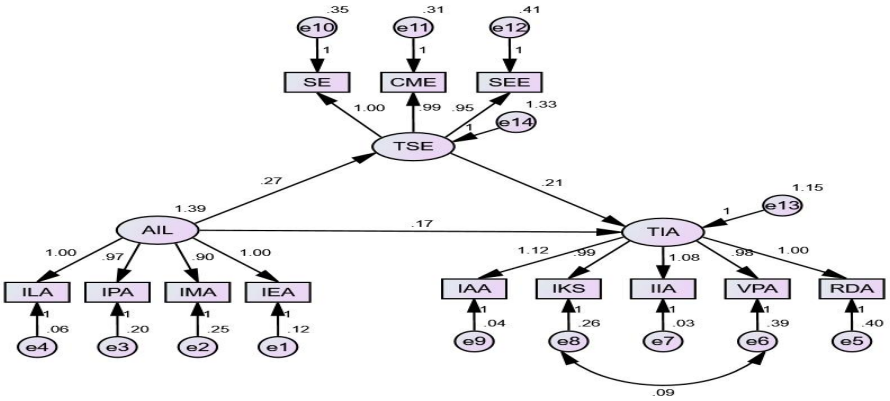
Discriminant validity was tested using the Fornell–Larcker criterion. The square root of AVE for each construct was greater than its inter-construct correlations, supporting distinctiveness among latent variables (Fornell and Larcker, 1981). Overall, the measurement model showed satisfactory reliability and validity, suitable for subsequent structural model analysis.

4. Results of Structural Equation Modeling (SEM) for Research Objective 3

1) Model evaluation

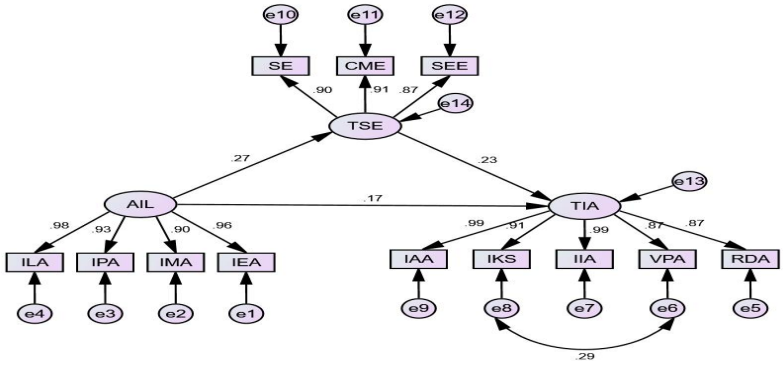
The present study develops a Structural Equation Model (SEM) to examine the relationships among Administrators' Informatization Leadership (AIL), Teachers' Informatization Ability (TIA), and Teachers' Self-Efficacy (TSE) in higher vocational colleges in Pingdingshan City Henan Province. The results of reliability, convergent validity, and discriminant validity assessments satisfied the recommended criteria for measurement quality. These findings

indicate that the measurement model demonstrates adequate psychometric properties and is suitable for subsequent structural path analysis. The structural model was estimated using AMOS. Goodness-of-fit indices showed acceptable overall fit, so the proposed structural relationships among AIL, TIA, and TSE were further examined using the validated measurement framework.



Chi-square=144.136, Df=50, CFI=0.983, TLI=0.977, SRMR=0.032, RMSEA=0.075

Figure 4 Structural Equation Model (Unstandardized Estimates)



Chi-square=144.136, Df=50, CFI=0.983, TLI=0.977, SRMR=0.032, RMSEA=0.075

Figure 5 Structural Equation Model (Standardized Estimates)

Table 6 Fit indices of the structural model

Measure	Estimate	Threshold	Interpretation
CMIN	144.136	--	--
DF	50	--	--
CMIN/DF	2.883	1-3 Excellent, 3-5 Acceptable	Excellent
CFI	0.983	>0.95 Excellent, >0.9 Acceptable	Excellent
TLI	0.977	>0.95Excellent, >0.9 Acceptable	Excellent
SRMR	0.032	<0.05 Excellent, <0.08 Acceptable	Excellent
RMSEA	0.075	<0.05 Excellent, <0.08 Acceptable	Acceptable
Pclose	0.000	>0.05	Not Estimated

Table 6 presents the structural equation model's goodness-of-fit indices. The chi-square to degrees of freedom ratio (CMIN/DF = 2.883) is less than 3, indicating acceptable model fit (Kline, 2016).

For incremental fit indices, the Comparative Fit Index (CFI = 0.983) and Tucker–Lewis Index (TLI = 0.977) both exceed the 0.95 threshold, signifying good fit (Hu and Bentler, 1999).

Regarding absolute fit indices, the Standardized Root Mean Square Residual (SRMR = 0.032) is well below 0.08, and the Root Mean Square Error of Approximation (RMSEA = 0.075) is below 0.08, both indicating good and acceptable fit respectively (Hair, et al., 2019).

Collectively, these results confirm satisfactory model fit, validating the structural model for subsequent path analysis and hypothesis testing.

2) Path Analysis and Hypothesis Testing

The structural path coefficients were examined to determine the direct and indirect effects among the latent constructs. Path coefficients, critical ratios, and significance levels for each hypothesized relationship are reported in Table 7.

Table 7 Results of Structural Path Analysis

Relationship			Estimate	S.E.	C.R.	P	Label
TSE	<---	AIL	0.272	0.057	4.803	***	H2
TIA	<---	TSE	0.214	0.054	3.963	***	H3
TIA	<---	AIL	0.168	0.053	3.173	0.002	H1
IEA	<---	AIL	1.000				
IMA	<---	AIL	0.895	0.027	32.678	***	
IPA	<---	AIL	0.972	0.026	37.111	***	
ILA	<---	AIL	1.004	0.020	49.774	***	
VPA	<---	TIA	0.981	0.043	23.050		
IIA	<---	TIA	1.079	0.034	31.650	***	
IKS	<---	TIA	0.987	0.039	25.391	***	
SE	<---	TSE	1.000			***	
CME	<---	TSE	0.994	0.042	23.568	***	
SEE	<---	TSE	0.952	0.043	22.266		
IAA	<---	TIA	1.118	0.036	31.367	***	
RDA	<---	TIA	1.000			***	

From the statistics in Table 7, especially the standardized estimate factor loading (β), S.E., C.R., and p-value, this indicated that:

Administrators' Informatization Leadership had a significant positive effect on Teachers' Informatization Ability (β = 0.168, S.E. = 0.053, C.R. = 3.173, p = 0.002).

Administrators' Informatization Leadership had a significant positive effect on Teachers' Self-Efficacy (β = 0.272, S.E. = 0.057, C.R. = 4.803, p < 0.001).

Teachers' Self-Efficacy had a significant positive effect on Teachers' Informatization Ability (β = 0.214, S.E. = 0.054, C.R. = 3.963, p < 0.001).

Thus, the research hypotheses are supported as follows:

H1: Administrators' Informatization Leadership has a direct effect on Teachers' Informatization Ability, H1 was supported.

H2: Administrators' informatization leadership has a direct effect on teachers' self-efficacy, therefore, H2 was supported.

H3: Teachers' self-efficacy has a direct effect on teachers' informatization ability, therefore, H3 was supported.

3) Mediating effect

Table 8 examines the mediating effect of teachers' self-efficacy on the relationship between administrators' informatization leadership and teachers' informatization ability.

Table 8 Results of Mediation Effect Analysis

Parameter	Estimate	Lower	Upper	P	Hypothesis
AIL → TSE → TIA	0.058	0.029	0.101	.000	H4

Table 8 shows that the indirect effect of Administrators' Informatization Leadership on Teachers' Informatization Ability via Teachers' Self-Efficacy was 0.058. Its 95% confidence interval was 0.029–0.0101, excluding zero, with p = 0.000, indicating a highly significant effect. This confirms that Teachers' Self-Efficacy significantly mediates the relationship between Administrators' Informatization Leadership and Teachers' Informatization Ability, thus supporting Hypothesis H4.

Discussions

Discussion of Objective 1

The research examined administrators' informatization leadership (AIL), teachers' informatization ability (TIA), and teachers' self-efficacy (TSE). SEM analysis verified the model's reliability, validity, and excellent fit (χ^2/df = 2.883, RMSEA = 0.075, CFI = 0.983). Key findings:

As defined by Anderson and Dexter (2005) and Aesaert, et al. (2015), AIL consisting of informatization literacy ability, informatization planning ability, informatization management ability, and informatization evaluation ability.

TIA is conceptualized by Koehler and Mishra (2009) and UNESCO (2018) as teachers' competence in integrating information and communication technology into instruction, consisting of informatization awareness and attitude, informatization knowledge and skills, informatization implementation ability, vocational practice ability, and teaching research and development ability .

TSE is defined by Bandura (1997) and Tschannen-Moran, et al. (1998) as teachers' beliefs in their capability to influence student learning, consisting of teaching strategy efficacy (SE), classroom management efficacy (CME), and student engagement efficacy (SEE).

CFA and SEM analysis confirmed strong model reliability, with high factor loadings for AIL (IPA = 0.932), TIA (IKS = 0.910), and TSE (CME = 0.905).

Discussion of Objective 2

Hypothesis 1: Administrators' Informatization Leadership (AIL) positively affects Teachers' Informatization Ability (TIA) (estimate = 0.168, p = 0.002, correlation = 0.217). This is consistent with Anderson and Dexter (2005) and Aesaert, et al. (2015), who reported that digital leadership enhances instructional technology integration.

Hypothesis 2: Administrators' Informatization Leadership (AIL) positively affects Teachers' Self-Efficacy (TSE) (estimate = 0.272, p < 0.001, correlation = 0.225). This aligns with Leithwood and Jantzi (2008), who found that leadership strengthens teachers' efficacy beliefs.

Hypothesis 3: Teachers' Self-Efficacy (TSE) positively affects Teachers' Informatization Ability (TIA) (estimate = 0.214, $p < 0.001$, correlation = 0.253). This is supported by Bandura (1997) and Tschannen-Moran, et al. (1998), who demonstrated that efficacy beliefs predict instructional performance.

Discussion of Objective 3

Hypothesis 4: AIL indirectly affects TIA via TSE (estimate = 0.058, confidence interval = 0.029–0.101). Bandura (1997) and Tschannen-Moran, et al. (1998), indicate that contextual support enhances performance through efficacy beliefs.

Conclusion: The findings confirm that administrators' informatization leadership (AIL) and teachers' self-efficacy (TSE) significantly influence teachers' informatization ability (TIA), both directly and indirectly through the mediating role of TSE. Educational institutions should therefore strengthen digital leadership practices and enhance teachers' efficacy beliefs to improve teachers' informatization ability.

Recommendations

Based on the research's progress and data, future work will focus on the following:

From the Perspective of Administrators' Informatization Leadership

Administrators should strengthen strategic and systemic informatization leadership, shifting from project-driven management to ecosystem-oriented digital transformation. At the "Informatization 2.0" stage, leadership emphasizes intelligent empowerment and system integration (Zhu and Wei, 2018). Higher vocational colleges are advised to : (1) establish a cross-departmental informatization leading group headed by the principal; (2) formulate rolling development plans with clear annual targets, budgets, and performance indicators; (3) ensure stable annual funding for informatization teaching; and (4) promote school–enterprise collaboration to co-develop and update digital teaching resources.

From the Perspective of Teachers' Self-Efficacy

Teachers' self-efficacy is a key psychological determinant of informatization behavior. Positive feedback, role modeling, and technical support are major external sources of efficacy enhancement (Bandura, 1997; Tschannen-Moran, et al., 1998). Administrators should therefore: (1) establish timely feedback mechanisms for informatization teaching; (2) build professional learning communities and demonstration platforms to leverage peer modeling; and (3) cultivate a supportive culture that reduces technology-related anxiety and strengthens instructional confidence.

From the Perspective of Teachers' Informatization Ability

Teachers should continuously improve their technological integration competence. The TPACK framework highlights the integration of technological, pedagogical, and content knowledge as the core of effective digital teaching (Koehler, et al., 2009). Teachers are encouraged to participate in targeted training, engage in reflective practice to optimize instructional design, and take part in teaching competitions to promote capability development through practice.

From the Perspective of School System Construction

Institutional guarantees are fundamental to sustainable educational informatization (Ministry of Education of the People's Republic of China, 2012). Schools should incorporate informatization ability into professional evaluation and performance appraisal systems, strengthen incentive mechanisms, and improve digital infrastructure to provide stable platforms and resource support.

Recommendations for Further Research

Future studies should expand sampling beyond a single region to enhance external validity. Additional mediators (e.g., teacher motivation, perceived organizational support, innovation climate) may be introduced to construct more comprehensive models. Moreover, comparative research across different

institutional types would help clarify context-specific characteristics of teachers' informatization ability, particularly its practical orientation in higher vocational education.

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