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DIGITAL LEADERSHIP MODEL FOR ADMINISTRATORS IN THE NEW ERA OF ART UNIVERSITIES IN SHENYANG CITY UNDER LIAONING PROVINCE

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Abstract

The objectives of this research were: (1) To determine the components and indicators of the digital leadership for administrators in the new era of art universities in Shenyang City under Liaoning Province; (2) To propose the digital leadership model for administrators in the new era of art universities in Shenyang City under Liaoning Province.

The research was mixed methodology research, including qualitative research and quantitative research. The population of the study included 1,505 administrators and teachers from four art universities in Shenyang under Liaoning Province, People's Republic of China. The sample group would select by using proportional stratified random sampling. The sample size was determined by the G*Power program version 3.1.9.2, totally at least 307 administrators and teachers. The instruments used for collecting data were a semi-structured interview form, a five-point rating scale questionnaire, and Focus Group Discussion form. A total of 9 key informants were interviewed. Descriptive statistics and Confirmatory Factor Analysis were used to perform data analysis by using statistical software as well as the content analysis was employed.

The research findings revealed that; (1) The components and indicators of the digital leadership for administrators in the new era of art universities in Shenyang City under Liaoning Province were 5 components and 17 indicators: digital literacy, digital ability,

resource allocation, organization and mobilization, and Professional development; and (2) The digital leadership model for administrators in the new era of art universities in Shenyang City under Liaoning Province, had a good fit with the empirical data. (X2/df=1.354, GFI=0.943,AGFI=0.924, NFI=0.959,IFI=0.989, TLI=0.987, CFI=0.989, RFI=0.951, RMSEA=.034).

Keywords: Digital leadership Model, New era, Art universities, Shenyang City, Liaoning Province

Introduction

The 21st century is a new era of rapid growth of digital information. Mobile networks, social networks, e-commerce, etc. have expanded the application scope of the Internet. China is accelerating the layout of the digital economy in an all-round way. The 2022 National Education Work Conference proposed "implementing the strategic action of digital education". This is not only a general trend of international economic development, but also an inevitable requirement for the integration and iteration of information technology and education. In the digital economy era marked by the widespread use of data elements and digital technologies, the digital transformation of higher education faces rare opportunities and severe challenges. Zhong, B. L. (2023), (2023) Promote educational reform in the intelligent era, build an integrated digital education service system, promote the construction of digital campuses, promote the deep integration of information technology and education and teaching, and enhance network security protection capabilities. Promote new educational infrastructure, relying on the Liaoning Provincial Education Resources Public Service Platform, Vocational Education Management and Service Platform, and Undergraduate Teaching Management Platform of Higher Education Institutions, build a large "Internet + Education" platform. The significance of digitalization, that is, the process of converting information into digital storage formats, has become the power of digital resources, promoting innovation and dissemination, and creating new ways of interaction, communication, and business cooperation.

Digital leadership is an important concept that has gradually emerged in recent years. Based on the sorting and analysis of existing "digital leadership" related literature, it is found that the current research on digital leadership is mainly focused on the application practice of digital technology in the leadership field of specific industries (Zhang, S. H,2018), while

there are relatively few related studies on digital leadership in the arts. The research level is relatively single. This research uses mixed research methods to measure through quantitative research, combined with qualitative research methods for analysis, and analyzes and summarizes the impact of managers' digital leadership on Liaoning Province. The promoting role and development significance of education management of Shenyang University of Arts. Based on this, this study, based on the combing of relevant literature, takes Liaoning Higher Art University as the basic scope, explores the basic connotation of digital leadership in Liaoning Higher Art University, analyzes the constituent elements and implementation indicators of digital leadership in Liaoning Higher Art University, preliminarily constructs a digital leadership model for art universities. It is hoped that this study will have a certain reference significance for the digital transformation and development of China's higher art universities, and also provide some guidance and suggestions for educational managers to realize their self-value during the digital transformation period.

Research Objectives

1. To determine the components and indicators of the digital leadership for administrators in new era of art universities in Shenyang City under Liaoning Province.

2. To propose the digital leadership model for administrators in new era of art universities in Shenyang City under Liaoning Province.

Research Hypothesis

The digital leadership model for administrators is fit with the empirical data

Review of Literature

Digital Leadership

The emergence of digital leadership can be traced back to the rapid development and widespread adoption of digital technologies, as well as the impact of digital transformation on the roles of organizations and leaders. With the swift progress of digital technologies, they were extensively applied across various industries, altering business models, communication methods, and management styles. This demanded that organizational managers possess digital leadership skills.

The concept of digital leadership was first introduced by a research team from the Massachusetts Institute of Technology (MIT). In the research, Westerman, G., Bonnet, D., &

McAfee, A. (2014) proposed the concept of digital leadership. They recognized that this concept encompasses the abilities necessary to leverage digital technologies for improving business processes, enhancing customer experiences, and driving innovation. They uncovered the key elements of digital transformation: factors in three aspects, namely digital capabilities, leadership competencies, and cultural change. They constructed a systematic theoretical model of digital leadership, enabling leaders to understand how to realize business transformation and innovation through digital technologies, and providing strategic guidance for enterprises' transformation in the digital era. This research laid the foundation for the development of the digital leadership theory.

So far, scholars at home and abroad have not reached a unified definition of digital leadership. Domestic scholar Tan, H. J. (2016) defined the concept of digital leadership in his research. He believed that digital leadership refers to a leader's ability to understand and apply digital technologies, as well as the ability to formulate and implement strategies in the digital context. This kind of leadership not only involves the technical aspect but also encompasses cultural and organizational changes. It also involves how they enhance the efficiency and competitiveness of an organization through these technologies. Liu, S. (2022) further developed the concept of digital leadership based on this. She defined digital leadership as the digital transformation ability that organizational managers should possess, requiring leaders to have digital vision, digital thinking, the ability to use digital tools, and the ability to make data - driven decisions. She emphasized that leadership promotes organizational change and innovation through the application of digital technologies and data resources to achieve strategic goals. Their research provided a theoretical basis for studies related to digital leadership.

The characteristics of digital leadership manifested in different organizational activities vary. Managers in different management positions also need different digital leadership capabilities to complete organizational work. Therefore, the capabilities demonstrated by digital leadership in different scenarios are different and need to be adjusted according to the development needs of the organization. For example, the research of Tan, H. J. (2016) and Liu, S. (2022) was based on the context of leaders' personal characteristics. Yang, X. M. (2016), on the other hand, emphasized the characteristics of digital leadership in the context of social influence in her research. The study found that digital leadership had a huge and profound impact on promoting cooperation and exchanges in higher education, driving the

development of higher education towards personalization, and accelerating the global sharing of high - quality higher education resources. She believed that the digital leadership of university leaders included four dimensions: digital global vision, digital culture construction, building a digital management platform, and digital resource sharing. Based on these four dimensions, she constructed a theoretical model of digital leadership, which promoted the characteristic development and quality improvement of higher education. All these brought new challenges to university reforms and leadership work.

With the continuous development and improvement of the digital leadership theory, the content covered by relevant research theories became more and more comprehensive. Ji, D., & Guo, Z. (2023) had their own unique insights into the research of digital leadership theory during the digital transformation period. They introduced digital thinking, digital technologies, digital team building, digital analysis, and digital evaluation management into quality management and constructed a quality management model. Based on the multi - level perspectives of self - development, team development, and organizational development, this model proposed that the development content of leadership included many aspects such as self - cultivation, task - handling, subordinate development, team cohesion, organizational management, and performance management. They emphasized that promoting the digital transformation of an organization was an issue that every Chief Quality Officer must deeply consider, verifying the importance of theoretical research on digital leadership.

Research Methodology

Researchers adopted a mixed research method, including qualitative research and quantitative research.

Qualitative Research

The researcher retrieved and sorted out relevant concepts, principles, and theories, and conducted a content analysis of the literature on digital leadership. This involved reviewing academic monographs, research papers, and journal articles from domestic and international sources. The purpose was to lay a theoretical foundation for the subsequent quantitative research. Subsequently, semi - structured interviews were carried out with 9 key informants from art universities in Shenyang City under Liaoning Province. These key informants were obtained through purposive sampling. The key informants were administrators from 4 different art universities in Shenyang City under Liaoning Province,

including 1 president, 5 deans, and 3 teaching directors. They all had 5 - 10 years of experience in art education management, held professional titles of associate professor or above, and had rich expertise in art education management. The purpose of the semi - structured interviews was to explore the components and indicators of the digital leadership for administrators in new era of art universities in Shenyang City under Liaoning Province. Through the qualitative research method, the researchers obtained rich and detailed information, determining the components and indicators of the digital leadership for administrators in new era of art universities in Shenyang City under Liaoning Province, and providing a theoretical basis for subsequent research.

Quantitative Research

After the qualitative research, the researcher designed a questionnaire, and the research entered the quantitative research stage. The population scope of this research included 1,505 administrators and professional teachers from 4 art universities in Shenyang City under Liaoning Province. The sample size was determined using the G*Power program, with a sample size of 307. Proportionate stratified random sampling was adopted to select the samples. The questionnaire consisted of three parts: Part 1: Basic information of the respondents. Part 2: Contained 26 indicator items of digital leadership (measured by a 5 - point Likert scale). Part 3: Suggestions and supplementary comments (open - ended). First, the data collected from the questionnaire were analyzed using descriptive statistics. This involved calculating percentages, means, and standard deviations to understand the characteristics and distribution of the sample. Then, confirmatory factor analysis (CFA) was conducted to verify the validity and reliability of the proposed digital leadership model for administrators in new era of art universities in Shenyang City under Liaoning Province.

Research Instruments

Qualitative research tools:the semi - structured interview form was used to collect insights into digital leadership from key informants. The researcher used various means to conduct interviews - including but not limited to telephone interview and online interview according to the actual situation of the informants. The interviews were in the form of open - ended discussions, allowing informants to freely express their views on the components and indicators of the digital leadership for administrators in new era of art universities

in Shenyang City under Liaoning Province. The semi - structured interview form was designed to explore their experiences, opinions, and suggestions, providing rich theoretical data for qualitative research and facilitating subsequent research by the researcher.

Quantitative research tools:the five - point Likert scale questionnaire was used for sample surveys to obtain quantitative data and verify the digital leadership model proposed in the research objective. The questionnaire covered indicator items related to different aspects of the digital leadership for administrators in new era of art universities in Shenyang City under Liaoning Province. Respondents were required to rate their level of agreement with the questionnaire items on a scale from 1 (strongly disagree) to 5 (strongly agree). This approach helped to accurately quantify the respondents' views on the implementation and effectiveness of the digital leadership of art universities administrators.

Data Collection

Qualitative data collection: theoretical data on digital leadership were collected from relevant research theories, literature, and periodicals. A comprehensive search was carried out on literature related to digital leadership. After the initial completion of theoretical data collection, the researcher got in touch with 9 key informants, indicating the intentions and objectives. Interview questionnaires were sent to them via mail and telephone, and they were given sufficient time to reply to the semi - structured interview questions. The researcher collected and organized the relevant content as the theoretical basis for qualitative analysis.

Quantitative data collection: the researcher designed a questionnaire and examined its validity. The validity of the questionnaire was evaluated using the item - objective congruence analysis method, and the evaluation results were collected. Twenty - four items had a relatively high degree of consistency with the corresponding indicator descriptions. Before the official distribution of the questionnaire, 30 relevant administrators and teachers were selected for a non - sampling test, and the test results were collected. The results showed that the questionnaire had good reliability. The researcher used the software program "Questionnaire star" to send out and collect 307 survey questions. All the questionnaires were valid and could be used for further data analysis.

Data Analysis

Qualitative data analysis: the researcher collected theoretical data through literature review and semi - structured interviews. The collected data, which were related to the digital leadership for administrators in new era of art universities in Shenyang City under Liaoning Province, that were organized and analyzed using qualitative analysis methods. This involved identifying the contents, concepts, components, and empirical indicators. Ultimately, through qualitative analysis, the components and indicators of the digital leadership for administrators in new era of art universities in Shenyang City under Liaoning Province were determined.

Quantitative data analysis: first, descriptive statistical methods were used to analyze the data of 307 respondents, including frequency, percentage, mean, and standard deviation. For example, basic information such as the respondents' gender, age, educational level, position level, professional title, and work experience was statistically analyzed. Frequencies and percentages were calculated to understand the distribution of the sample. The means and standard deviations of the indicators of the digital leadership model were also calculated. After the descriptive analysis, confirmatory factor analysis (CFA) was carried out. CFA was crucial for verifying the validity of the structural model of the digital leadership for administrators in new era of art universities in Shenyang City under Liaoning Province. Through confirmatory factor analysis, the researcher tested whether the model developed based on literature and theoretical data was consistent with the empirical data. Various goodness - of - fit indices, including chi-square, GFI (Goodness - of - Fit Index), AGFI (Adjusted Goodness - of - Fit Index), TLI (Tucker - Lewis Index), CFI (Comparative Fit Index), NFI (Normed Fit Index), and RMSEA (Root Mean Square Error of Approximation), all met the standards.

Research Results

The results of data analysis showed that the digital leadership model for administrators in new era of art universities in Shenyang City under Liaoning Province was highly consistent with empirical data. According to data analysis, the questionnaire had good validity and reliability, and each indicator item can well explain the content of the latent variable. Confirmatory factor analysis confirmed that the components determined in the model and the relevant indicators had a good fit, and the factor loading exceeded the standard value,

indicating that the observable variables were positively correlated with the relevant latent variables.

The research found that the digital leadership model for administrators in new era of art universities in Shenyang City under Liaoning Province, contained 5 components and 17 indicators. Each indicator can explain the relevant components. These indicators jointly promote the development of the digital leadership for administrators in new era of art universities in Shenyang City under Liaoning Province Details were as follows:

1. Digital Literacy (DL)

DL1: Strengthen the ability to apply digital technology and skillfully use digital technology to participate in digital management.

DL2: Actively participate in digital technology training and seminars, and introduce high-quality technical training courses.

DL5: Emphasize digital ethics and moral standards, and use digital content reasonably within the scope of the law.

2. Digital Ability (DA)

DA1: Improve digital planning capabilities and develop a long-term vision for the school.

DA2: Actively promote the digital transformation of schools and improve the ability to build digital campuses.

DA3: Improve the digital evaluation management system, establish an evaluation feedback mechanism, and enhance evaluation capabilities.

DA5: Ensure the safe use and dissemination of digital information, and improve digital security capabilities

3. Resource Configuration (RC)

RC1: Ability to mine high-quality digital resources

RC2: Actively promote resource integration and aggregation, and establish a digital resource library.

RC3: Reasonable allocation of resources based on the needs of digital transformation in the new era.

RC5:Carry out resource sharing and promote school resource exchange and development.

4. Organization and Mobilization (OM)

OM1: Establish a digital team, strengthen the team's digital competitiveness, and drive the school's digital transformation.

OM2: Mobilize teachers and students to participate in digital construction.

OM4: Actively organize campus cultural exchange activities to enhance the digital cultural atmosphere on campus.

5. Professional Development (PD)

PD2: Support interdisciplinary collaboration and communication to promote professional development.

PD3: Build a smart teaching platform and establish an auxiliary service system

PD5: Participate in joint practice training projects between schools and enterprises and introduce cutting-edge digital technologies.

These components and indicators were crucial to the development of digital leadership for administrators in new era of art universities in Shenyang City under Liaoning Province. They played a key role in improving digital management, cultivating digital talents, building digital culture, and promoting the process of digital transformation. They constitute a digital leadership model for administrators in new era of art universities in Shenyang City under Liaoning Province and provided a useful reference for the digital transformation and development of administrators of art universities in Shenyang City under Liaoning Province.

Table 1 Model fitting index

Model fitting index									
Standardized	X2/df	GFI	AGFI	NFI	IFI	TLI	CFI	RFI	RMSEA
estimates	<3	>0.90	>0.90	>0.90	>0.90	>0.90	>0.90	>0.90	<0.08
Default model	1.354	0.943	0.924	0.959	0.989	0.987	0.989	0.951	0.034

The researcher tested the applicability of the data and model to see if the model used was reasonable. Referring to the research results of previous scholars, the goodness of fit of the research model and data in this research was tested. Several key indicators were consistent with the recommended values, indicating that the overall goodness of fit of the theoretical model in this research was good and the model was acceptable. Among

which X2/df <3, GFI, AGFI, TLI, and CFI were greater than 0.90 respectively, reaching the ideal standard, and RMSEA <0.08. It met the standard. The model consisted of 5 components and 17 indicators. The factor loading values of the components and indicators were all above 0.8, and the results showed that they were good. This showed that the settings of each component and indicator were reasonable and could well explain the latent variables.

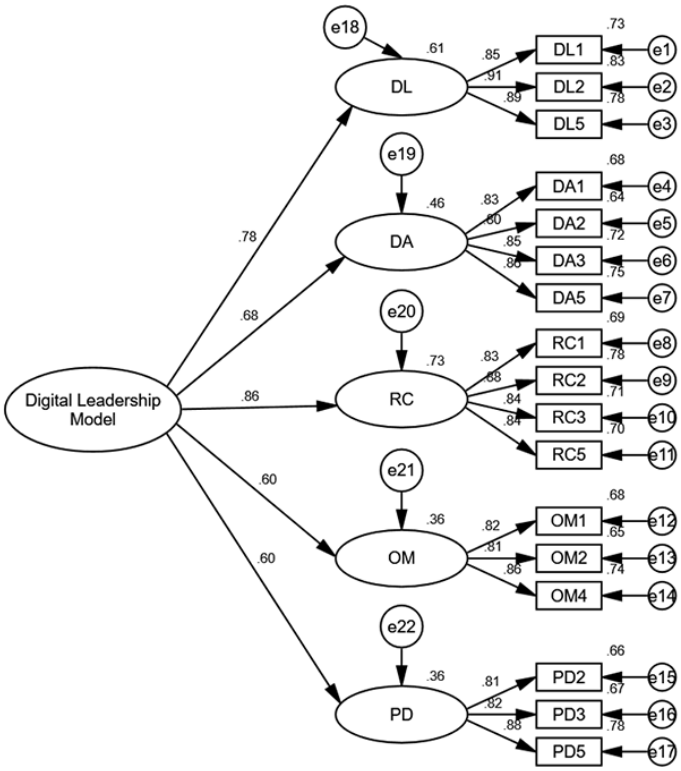


Figure 1 Digital Leadership Model for Administrators of Art Universities

Table 2 Shows the statistical values of the model

	Variate/ Item	STD. Estimate	R^2	S.E.	C.R.	P	CR	AVE
Digital Leadership Model	DL (0.779)							
	DL1	0.854						
	DL2	0.910	0.607	0.050	20.823	***	0.914	0.780
	DL5	0.885		0.048	20.059	***		
	DA (0.679)							
	DA1	0.827						
	DA2	0.800	0.461	0.059	16.018	***	0.902	0.698
	DA3	0.849		0.055	17.414	***		
	DA5	0.864		0.059	17.835	***		

Table 2 Shows the statistical values of the model (continued)

Variate/ Item	STD. Estimate	R^2	S.E.	C.R.	P	CR	AVE
RC (0.857)							
RC1	0.828	0.734				0.910	0.717
RC2	0.881		0.057	18.758	***		
RC3	0.842		0.049	17.538	***		
RC5	0.836		0.056	17.350	***		
OM (0.603)							
OM1	0.822	0.363				0.869	0.688
OM2	0.806		0.065	15.158	***		
OM4	0.859		0.069	15.973	***		
PD (0.601)							
PD2	0.811	0.362				0.876	0.703
PD3	0.818		0.066	15.512	***		
PD5	0.884		0.068	16.493	***		

From the results of the overall confirmatory factor analysis and the second-order model output in the above table, it can be seen that the standardized factor loading value of each measurement item in the questionnaire was greater than 0.5, which met the standard, and the standard error value of each item was also less than the standard range of 0.5, indicating that each measurement item could well explain the dimensional structure in which it belong, thus proving that the questionnaire of this study had good validity. The combined reliability CR values were 0.914, 0.902, 0.910, 0.869, and 0.876, and the CR values were all above 0.7. The AVE values were 0.780, 0.698, 0.717, 0.688, and 0.703, and the AVE values were all greater than 0.5, which was the general standard. The above results showed that the combined reliability and convergent validity of the various variable components and measurement indicators of the questionnaire set in this research met the theoretical requirements. The consistency and validity were relatively ideal.

Conclusion, Discussion and Recommendations

Conclusion

The research to propose the digital leadership for administrators in new era of art universities in Shenyang City under Liaoning Province, investigate and analyze the current status of the digital leadership for administrators in new era of art universities in Shenyang City under Liaoning Province, construct a digital leadership for administrators in new era of art universities in Shenyang City under Liaoning Province.

This research adopts a mixed research method combining qualitative research and quantitative research. Confirmatory factor analysis (CFA) was used to evaluate the validity and reliability of the conceptual model. The main experts were selected through purposive sampling. The key informants included 9 experts with senior educational management experience (presidents, deans, department heads and teachers), who provided many effective suggestions to the researcher.

Discussion

According to the research results, the researcher found that the digital leadership model for administrators in new era of art universities in Shenyang City under Liaoning Province could be constructed through five important components. Including: digital literacy, digital ability, resource configuration, organization and mobilization, and professional development. The researcher will discussion as follows:

Component 1: Digital Literacy

The findings found that digital literacy is a key component of digital leadership, who distinguished between digital natives and immigrants and emphasized that individuals need to had digital literacy skills to thrive in the digital age. In the context of the University of the Arts, managers with strong digital literacy can better manage digital resources, understand and implement digital trends, and make informed decisions. This study was consistent with the views of Orero-Blat, M. (2022), emphasizing the key role of digital literacy in bridging the capability gap of modern organizations. However, Liu, K. (2024) had a different interpretation of the view, and his research focuses on the perspective of equity and justice. He pointed out that K-12 schools in the United States face digital inequality issues, including unfair use of technology, exclusionary and punitive education using technology, and unfair social environment of school technology. School leaders play an important role in digital inequality issues.

Component 2: Digital Ability

Researchers believe that digital capabilities were an important part of managers' digital management qualities. Benitez, J. (2021) had similar views to this study. He believes that in the process of organizational digital transformation, digital technology and digital capabilities can help improve organizational performance. The results showed that improving digital capabilities had a positive impact on digital innovation, and digital innovation was crucial to organizational performance through mediating technology orientation and digital capabilities. Benitez, J. theoretically developed the concepts of digital leadership and platform digital capabilities and empirically analyzed the relationship between these two key capabilities and their impact on innovation performance, contributing to the research on leadership-related theories.

Component 3: Resource Configuration

The results of the research found that administrators resource configuration capabilities were crucial in digital leadership management. It aims to help leaders broke resource barriers, provide ideas for the development of education digitalization, and look forward to the application prospects of new technologies in the future. It had built a resource sharing mechanism covering shared entities, platform construction, and multiple models, and proposed a resource optimization allocation strategy based on big data, cloud computing, and blockchain. The findings were consistent with Deursen, Van's (2019) theory on digital resources, which emphasizes the importance of identifying and leveraging quality digital resources to reduce disparities in access and use. Who emphasized the importance of resource allocation strategies that align with institutional goals and the changing needs of students and faculty, suggesting that resource allocation should be guided by ongoing evaluation and feedback mechanisms to ensure relevance and validity. This study highlights the dynamic nature of resource management in digital leadership and the need for adaptive strategies.

Component 4: Organization and Mobilization

This was consistent with the research of Kampylis, P. (2015), proposed a model of leadership change that emphasizes the importance of mobilizing people and creating a sense of urgency. Kampylis emphasized the importance of participatory leadership in promoting faculty and students to participate in digital initiatives. In the management of university education, managers need to form digital teams, involve faculty and students in

digital construction, and organize cultural exchange activities to enhance the digital cultural atmosphere. Emphasizing the importance of creating opportunities for interdisciplinary cooperation and communication, it was believed that such initiatives can improve the efficiency of digital teams and promote innovation, and explores the role of organizational structure in supporting digital leadership, emphasizing that digital teams need to clarify roles, responsibilities and communication channels. Who believed that the formation of digital teams was the cornerstone of effective digital leadership and emphasizes the importance of forming diverse teams with complementary skills to promote digital transformation. Their research emphasized that successful digital teams required not only technical expertise, but also strong leadership, communication, and collaboration skills.

Component 5: Professional Development

The professional development component was essential for art university administrators to keep up with digital trends and improve their leadership capabilities. This was also supported by the research of Uzorka, A. (2023), who pointed out in his article that due to the emergence of a new normal in teaching, learning, and research, educators were increasingly required to embrace new technologies to improve opportunities for professional development. Research shows that in order to help faculty and staff take the lead in researching, integrating, and evaluating technology, leaders need to encourage interdisciplinary collaboration, build smart teaching platforms, and participate in joint practical training programs on and off campus, strengthen policy and leadership support, fair access to technology, and recognition, thereby enhancing professional capabilities. This finding was also in line with the trend of higher education to promote innovation and collaboration.

In summary, which was developed on the basis of theory and research, and is helpful for further research on the measurement and evaluation model of digital leadership skills indicators, and could be used as a guideline and suggestion for measuring the digital leadership training program of university administrators. The results could be used as a norm for the self-development of digital leadership of administrators and improved the digital transformation capabilities of educational leaders, which will further contribute to the improvement of overall education quality.

Recommendations

Recommendation for Policies Formulation

1. A special fund for improving digital literacy should be established to be used for digital technology training and the purchase of learning materials.

2. Incorporate digital planning into the school's strategic planning. When formulating long-term development plans, clarify the roles and responsibilities of administrative personnel and formulate digital development plans based on the characteristics of art education.

3. When formulating policies related to the administration of art universities, ensure that resources are allocated reasonably and effectively.

4. Spread digital cultural concepts through organizing cultural exchange activities to enhance the school's digital cultural heritage.

5. Formulate policies to support interdisciplinary cooperation, establish special funds, and promote the integration of art with science, technology, management and other disciplines.

Recommendation for Further Research

1. Focus on the special requirements of digital literacy compared with other fields in the context of art creation, art education management, etc.

2. Further refine the quantitative evaluation standards and develop evaluation tools to make the results of digital ability evaluation more scientific and comparable, and provide precise guidance for personnel selection, training and career development.

3. Explore the ecological development path of digital resource allocation and build a sustainable digital resource ecosystem.

4. Expand the scope of the subject of organization and mobilization, break the single mode dominated by administration, and build a diversified pattern of participation by teachers, students, alumni, parents and even the public.

5. Explore ways to establish an interdisciplinary knowledge exchange platform, a community of practice, and a project-based immersive learning experience.

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