Journal of Education and Learning Reviews, 1 (3): May-June 2024 ISSN: 3057-0387
Website: https://so19.tci-thaijo.org/index.php/JELS/about

Creating and Validating a Digital Leadership Model for University Teachers, Liaoning Province

Ntapat Woarapongpat
Center for Knowledge Transfer, Technology, Community Innovation, Entrepreneurship, Tourism and Education
Eastern Institute of Technology Suvarnabhumi (EITS), Thailand
E-mail: dr.thiwat@gmail.com RCID ID:https://orcid.org/0009-0008-3071-5249

Cai QiKun
Center for Knowledge Transfer, Technology, Community Innovation, Entrepreneurship, Tourism and Education
Eastern Institute of Technology Suvarnabhumi (EITS), Thailand
E-mail: ntapat.w@rsu.ac.th, RCID ID: https://orcid.org/0009-0005-3980-8335

Thutsapong Wongsawad
Thongsuk College, Thailand
E-mail: fonthai@hotmail.com, RCID ID: https://orcid.org/0009-0008-9333-0346

Received 20/03/2024	Revised 23/05/2024	Accepted 21/06/2024

Abstract

Background and Aims: In the era of digital transformation, digital leadership has emerged as a critical component of educators' ability to navigate and utilize data literacy in increasingly digitalized environments. University teachers, in particular, need digital leadership to adapt to advancements in technology and enhance their teaching and administrative skills. This study focuses on constructing and validating a digital leadership model specifically for university teachers in Liaoning Province. The research aims to identify the key components of digital leadership and develop a model that addresses the current and future needs of educators in this evolving landscape.

Methodology: The study employs a grounded theory approach to build a theoretical structure of digital leadership for university teachers. Field interviews with a diverse group of university educators were conducted to gather qualitative data. This data was then analyzed through a series of open, axial, and selective coding processes, allowing the identification of six key categories that form the foundation of digital leadership. These categories were then subjected to quantitative analysis using structural equation modeling (SEM) to assess the fit of the proposed model. Validation was achieved through iterative model testing and refinement, ensuring that the final model accurately represents the digital leadership characteristics of university teachers.

Results: The analysis revealed six key dimensions of digital leadership for university teachers:
Digital Leading Insight: The ability to foresee digital trends and incorporate them into teaching strategies.
Intelligent Teaching Organization: Effective integration of technology in teaching methods to enhance learning outcomes. Industry-Education Integration Promotion: Fostering collaborations between academia and industry to align educational practices with industry needs. Teacher Professional Development Learning: Ongoing self-improvement and learning to stay updated with technological advancements. Digital Cooperation and Communication Influence: Facilitating effective digital communication and collaboration within and across institutions. Digital Education Policy Decision-Making: Engaging in the formulation and implementation of digital policies in education. The model demonstrated a high degree of fit across all indices, confirming its validity as a framework for understanding digital leadership in the context of university educators.

Conclusion: The study provides a validated model of digital leadership for university teachers, highlighting six core competencies that educators must develop to succeed in the digital era. Recommendations for fostering digital leadership include offering leadership development training, optimizing blended learning environments, enhancing collaboration, driving organizational change, establishing incentive mechanisms, and promoting an integrated culture of industry-education collaboration. The results suggest that addressing these areas will significantly enhance the digital leadership capacity of university teachers in Liaoning Province, thereby improving educational outcomes in the digital age.

Keywords: College teachers; Digital leadership; Structural model; Lifting path

Introduction

In recent years, with the rapid growth of digital technology innovation and data application, more and more information technology has been introduced into the field of education. Artificial intelligence, blockchain, cloud computing, big data, and 5G communication technology have deeply integrated "Internet + education", and the construction and application of digital education resources in colleges and universities have become a hot topic. Teachers' digital leadership is an important guarantee for the

Citation: Woarapongpat, N., Cai, Q., & Wongsawad, T. (2024). Creating and Validating a Digital Leadership Model for University Teachers, Liaoning Province. Journal of Education and Learning Reviews, 1 (3), 1-10; DOI: https://doi.org/10.60027/jelr.2024.740

effective construction and successful application of digital educational resources. The Opinions of the Central Committee of the Communist Party of China and The State Council on Comprehensively Deepening the Reform of the Construction of Teachers in the New Era require that "teachers take the initiative to adapt to new technological changes such as information technology and artificial intelligence, and actively and effectively carry out education and teaching". The "Education Informatization 2.0 Action Plan" issued by the Ministry of Education calls for the launch of the "Artificial intelligence + teacher team construction action" to carry out training on improving the informatization teaching ability of college teachers (Ren et al, 2022).

In July 2021, the Notice of the Department of Higher Education of the Ministry of Education on the Pilot construction of Virtual Teaching and Research Rooms stressed that colleges and universities should rely on virtual teaching and research rooms to carry out extensive education and teaching research and exchange activities, comprehensively improve teachers' teaching and education ability, and focus on enhancing teachers' ability to deeply integrate modern information technology with education and teaching. Lay a solid foundation for improving the quality of personnel training [3]. The formation of the knowledge economy society and the ubiquity of digital technology have changed the ways of teachers' interpersonal communication and the contents of their teaching and scientific research work, prompting teachers to make digital transformations in the aspects of information access, integration of knowledge structure, choice of teaching mode, industry participation and integration, personal learning mode, policy formulation, and management, etc. Driven by innovation and the evolution of digital technology, The development of teacher digital leadership has become an important part of leading the educational transformation in the digital age. (Jogezai et al, 2023).

Research Problems

Despite the growing emphasis on digital transformation in education, there remain significant gaps in understanding the role of teachers' digital leadership in effectively integrating technology into pedagogical practices. Several challenges hinder the development and implementation of digital education resources, including:

Insufficient Digital Leadership Training: Many educators lack access to comprehensive training programs that focus on digital leadership skills, limiting their ability to harness the full potential of emerging technologies in teaching and learning environments.

Variability in Digital Resource Adoption: The integration of digital tools and resources across educational institutions varies widely, often influenced by factors such as institutional support, infrastructure, and individual teacher readiness, which can create disparities in student learning experiences.

Resistance to Technological Change: Resistance to the adoption of new technologies among some educators, whether due to unfamiliarity, fear of obsolescence, or perceived complexity, remains a major barrier to digital transformation in teaching methodologies.

Assessment and Evaluation Challenges: Evaluating the effectiveness of digital education resources and their impact on student outcomes is complex, especially in contexts where standardized metrics do not adequately capture the dynamic and interactive nature of digital learning environments.

Sustainability and Scalability of Digital Solutions: Ensuring that digital solutions are sustainable and scalable across different institutions and educational contexts remains a critical issue, as technological advancements continue to evolve rapidly, sometimes outpacing institutional capacities for adaptation.

This research seeks to address these problems by investigating how teacher digital leadership can be developed and leveraged to overcome these barriers, ensuring the successful and equitable implementation of digital educational resources in higher education.

Objectives

1. To construct a theoretical model of digital leadership for university teachers in Liaoning Province.
2. To identify the key components of digital leadership necessary for effective teaching in a digitalized educational environment.

Citation: Woarapongpat, N., Cai, Q., & Wongsawad, T. (2024). Creating and Validating a Digital Leadership Model for University Teachers, Liaoning Province. Journal of Education and Learning Reviews, 1 (3), 1-10; DOI: https://doi.org/10.60027/jelr.2024.740

3. To validate the proposed model through empirical research using grounded theory and quantitative analysis.

4. To provide recommendations for improving the digital leadership skills of university educators.

Literature Review

Digital leadership is an important concept that has gradually emerged in recent years. Based on the review and analysis of the existing literature on "digital leadership", it is found that the current research on digital leadership mainly focuses on the application practice of digital technology in the leadership field of specific industries, such as digital economy transformation, enterprise team management, and digital governance of government departments.

2. Construction of a digital leadership model for college teachers

Given the rapid digitalization of education, there is an urgent need to construct a digital leadership model tailored to college teachers. This model should encapsulate the unique challenges and opportunities that educators face in integrating technology into teaching, curriculum development, and institutional governance. Unlike traditional leadership, digital leadership in education requires a focus on technological proficiency, pedagogical innovation, and the ability to foster a digital learning culture among both students and faculty.

Key components of this digital leadership model might include:

Technological Proficiency: Teachers must not only be adept at using digital tools but also understand how to integrate these tools into their pedagogical practices to enhance student learning outcomes.

Pedagogical Innovation: Digital education leaders should pioneer new methods of teaching that leverage the interactivity and engagement potential of digital platforms, such as virtual classrooms, AI-driven personalized learning systems, and online collaborative tools.

Change Management: Like in other industries, educational leaders need to guide their institutions through technological changes, helping to build a culture that is open to digital innovation while addressing potential resistance from faculty and students.

Collaboration and Networking: A critical aspect of digital leadership for teachers involves facilitating collaborative networks among colleagues, both within and outside the institution, to share best practices and stay updated on the latest developments in educational technology.

This model aims to empower teachers to not only adapt to digital shifts but also to lead them, positioning educators at the forefront of educational innovation in the digital age.

Methodology

(1) Method selection and research object

In the past, the construction of teachers' information-based leadership model was mainly based on primary and secondary school teachers, and the research on digital leadership mostly focused on the development of digital leadership of managers of government functional departments and enterprise units (Worapongpat, 2023) while the research on digital leadership targeting university teachers was relatively lacking. Given the current research, the analysis of the components of digital leadership is still in the exploratory stage, and no effective research basis has been formed for reference. Therefore, based on the research idea of grounded theory, this research attempts to extract and summarize the structural elements of teachers' digital leadership from the bottom up and conducts an in-depth analysis of the structural elements and their relationships to construct a theoretical model.

The grounded theory requires researchers to construct theories from the bottom up through coded analysis and step-by-step induction of empirical data from research objects, rather than application or deduction of existing theories. Specifically, (Zhao et al (2021) based on the principle of purposeful sampling, 30 first-line college teachers with rich experience in online teaching and research in C City in Southwest China were interviewed, and the teachers' views and thoughts on some basic issues of digital leadership were explored, and the college teachers' understanding of the concept meaning of digital leadership and their understanding of the components of digital leadership were investigated (Worapongpat, 2023). At the operational level, the interview outline is determined according to the

Citation: Woarapongpat, N., Cai, Q., & Wongsawad, T. (2024). Creating and Validating a Digital Leadership Model for University Teachers, Liaoning Province. Journal of Education and Learning Reviews, 1 (3), 1-10; DOI: https://doi.org/10.60027/jelr.2024.740

factors influencing the process of teacher digital leadership and the impact of teacher digital leadership on teacher development, student learning, organization and collaboration, virtual team building, integration of industry and education, school reform and other core issues. Teachers are asked to describe the scene of the event, the tasks to be solved, the key actions to be taken, the results of the leadership event, and the impact of the event on themselves. Video interviews, telephone interviews, and on-site interviews are combined. Before each interview, interviewees were asked to describe the field of teachers' digital leadership and the transformation of teachers' roles and explain the status and characteristics of the influence generation process, including the incident occurrence context, problem-solving methods, and results in teaching and research work, and the resulting impact on teaching and research, teamwork, policy decisions, and other aspects. In the pre-interview, 6 teachers were selected to test the interview scenarios, and the rationality of the interview outline was verified. Meanwhile, the interview content was coded to verify the effectiveness of the interview outline. (Li et al, 2023).

(2) Data collection and sorting

In this paper, the NVivo10.0 analysis tool is used to transcode the interview recording text, to form text text.

(3) Analysis of the elements of teacher digital leadership model

1. Numbers lead to insight

Digital leading insight mainly includes the ability to explore digital consciousness, the ability to advocate digital morality and ethics, and the ability to adapt to the digital environment.

2. Intelligent teaching organization

The organizational power of smart teaching includes online teaching design ability, blended teaching implementation ability, digital information technology application ability, and academic assessment ability. It refers to the ability of teachers to set teaching objectives, design teaching processes, and implement activities in a smart teaching environment. Achieve the ability to unite teachers and students, create a good learning atmosphere, promote students' critical thinking development, and ability improvement, and achieve training goals. (Worapongpat & PhoSri, 2023).

3. Promoting force of integration of production and education

The promotion force of the integration of production and education mainly includes the ability of industrial docking and the ability of school-enterprise collaborative education.

4. Teacher professional development of learning ability

Teachers' professional development learning ability includes learning community connection ability, self-reflection and criticism ability, and output-oriented goal management ability.

5. Influence of digital cooperation and communication

The influence of digital cooperation and communication includes digital research collaboration ability, digital resource integration and analysis ability, the ability to assist and encourage team members, and the ability to independently solve problems and challenges.

6. Digital education policy decision-making ability

The decision-making power of digital education policy includes the implementation power of digital policy change, the creation ability of digital campus culture, and the resource allocation ability of digital teaching products.

3. verification and revision of digital leadership model for college teachers

To verify the scientificity of the digital leadership structure model of college teachers constructed in the earlier stage, this paper adopts a quantitative analysis method to analyze, verify, and revise the model. (Sheninger, 2019).

(1) Research tools

The first-level dimension of the questionnaire corresponds to the six main categories of qualitative analysis selective coding, namely, digital-leading insight, intelligent teaching organization, production-teaching integration promotion, teacher professional development learning, digital cooperation and communication influence, and digital education policy decision-making, while the second-level dimension corresponds to 43 minor categories of the main axis coding.

(2) Survey objects

There are 30 college teachers with relevant online teaching and scientific research experience in a university in C City, Southwest China, spanning 13 colleges and 55 departments such as the School

Citation: Woarapongpat, N., Cai, Q., & Wongsawad, T. (2024). Creating and Validating a Digital Leadership Model for University Teachers, Liaoning Province. Journal of Education and Learning Reviews, 1 (3), 1-10; DOI: https://doi.org/10.60027/jelr.2024.740

of Information, the School of Mechanical and Electrical Engineering, the School of Mathematics, and the School of Shipping.

(3) Research methods

The structural equation model method is used to fit the above theoretical model with the survey data.

(4) Data analysis

1） Questionnaire structure analysis

2） Questionnaire reliability analysis

3） Questionnaire validity analysis

Results and discussion

Worapongpat (2023) Based on qualitative and theoretical research, this study constructs the theoretical framework of digital leadership of university teachers and explores the designed model concretively through quantitative research methods. On the one hand, the structural model of digital leadership of university teachers is initially constructed, which includes six main categories, namely, digital leading insight, intelligent teaching organization, production-education integration promotion, teacher professional development learning, digital cooperation and communication influence, and digital education policy decision-making. On the other hand, to verify whether the digital leadership of college teachers constructed is reasonable, the research then conducts a questionnaire survey. Through the test method of reliability and validity, exploratory factor analysis, and confirmatory factor analysis, the analysis results show that the digital leadership model of college teachers has good rationality, reliability, and effectiveness. It is worth noting that the 6-dimensional digital leadership model of college teachers constructed by qualitative research in this paper is both interwoven and different from the teacher informatization leadership model constructed by previous research. It not only embodies the commonness of some connotation elements of teacher leadership but also reflects the characteristics of college teachers in digital leadership. With the development of the new leadership theory, the connotation of teacher leadership has changed from elite leadership in which teachers are selected to take formal leadership positions to growth-oriented leadership, focusing on the process of exerting teachers' influence in teaching, scientific research, peer leadership, and other aspects, and jointly creating distributed leadership of school culture. In the process of school reform and promoting education digital information, teachers need to assume more new roles and stimulate the internal driving force of education quality improvement. (Zhou, 2020).

In the dimension of digital-leading insight, college teachers can recognize digital technology from the concept and are willing to use digital technology to serve students' development and improve their ability, attach importance to the role of data collection and analysis, maintain sensitivity to information, have the awareness of exploring the use of digital technology to solve problems, and can timely adjust themselves to keep up with the needs of teaching and scientific research in the digital era. At the same time, some teachers also proposed to pay special attention to digital security in the process of online teaching and research. Teachers need to understand the authorization rules of copyright of digital resources, respect the privacy information of students and teachers' team members, and take effective measures to protect sensitive information such as test scores, graduation projects, and thesis data generated in teaching. Prevent incidents such as information leakage and network infringement (Worapongpat et al, 2023).

In digital communication, teachers can take the initiative to guide students and colleagues to abide by digital technology ethics and network ethics, do a good job in self-speech management, and actively supervise students' online speeches and discussions to avoid negative public opinion impact on organizations and individuals caused by inappropriate remarks. (Zheng & Ong, 2023)

In the organizational dimension of smart teaching, college teachers can realize the changes brought by digital information technology in teaching, take students as the center and ability training as the orientation, and continuously improve teaching. In particular, young teachers are more likely to accept new digital media technologies to spread their influence in education and teaching. Some young teachers said that they would use their spare time to make short videos on TikTok, open WeChat public accounts, and register B stations to become "up masters" to spread knowledge and share learning

Citation: Woarapongpat, N., Cai, Q., & Wongsawad, T. (2024). Creating and Validating a Digital Leadership Model for University Teachers, Liaoning Province. Journal of Education and Learning Reviews, 1 (3), 1-10; DOI: https://doi.org/10.60027/jelr.2024.740

experiences, form closer ties with students, and exert their teaching influence. In the process of mixing online and offline teaching, the construction of a virtual teaching and research room, and the construction of a virtual simulation laboratory, young teachers have stronger participation and higher enthusiasm, while middle-aged teachers need to improve this aspect. They need to break through the previous teaching habits, update their ideas, and constantly learn and improve digital pheromone cultivation. Teachers adopt the mixed teaching mode to achieve "online resources, offline activities, assessment processes, and reflection basis", especially the objective teaching reflection supported by the big data teaching platform. The difficult points of the course are the knowledge points with high error rates in online answers, the video content played back by students in learning, and the opinions and comments of a large number of participants in online discussion areas, which are convenient for teachers to adjust teaching dynamically. (Worapongpat, 2023).

In the dimension of learning power of teachers' professional development, college teachers attach importance to their learning development, to encourage other teachers to exert their influence and pay more attention to the role of digital communication in the establishment of learning teacher organizations. Young teachers are more active and pay attention to various and fast digital learning methods, and middle-aged teachers also have learning demands and aspirations for improvement in the professional development of digital teachers. Especially in the development of problem awareness and critical thinking, the digital learning environment has promoted more flexible learning methods, and collaborative learning based on digital technology has become an important way of knowledge creation. Teachers pay more attention to the ability of individuals to actively use digital technology to cooperate, communicate, and share with others in the organization. When more and more online learning communities are established and connected to form learning networks, teachers are no longer limited by bureaucratic restrictions and qualification requirements, but flexibly use digital technology to investigate problems, collect and analyze data, and propose critical solutions. The emergence and diffusion of knowledge bring more possibilities for teachers' leadership. (Zeike et al, 2019).

In terms of the influence of digital cooperation and communication, there is a significant difference between science and engineering teachers and liberal arts teachers. Most of the science and engineering teachers form scientific research teams and pay attention to team building. Due to the nature of the discipline, liberal arts teachers mostly conduct independent research, and liberal arts team building needs to be strengthened. The application of digital information technology has broken through the boundaries of traditional organizations, increasing communication channels among members of organizations, synchronizing information acquisition, and visualizing communication contents. Meanwhile, along with knowledge sharing and information integration, conflicts of interest and relationship conflicts will occur among teams, and the breadth, depth, precision, and difficulty of cooperation have been greatly improved. In the team, teachers should establish a common vision and discourse system based on digitalization, focus on work problems and challenges with a proactive attitude, flexibly deal with conflicts, and strengthen the executive ability of digital communication and collaboration (Worapongpat, 2023).

In terms of the promotion power of the integration of industry and education and the decision-making power of digital education policy, young teachers in universities and colleges have insufficient time to go to the front line of enterprises, are not closely integrated with the development of the industry, and need to improve their engineering practical ability, lack ways to improve their engineering practical ability, lack industrial background and experience, and rarely play a leadership role. Professors and associate professors do more horizontal projects and have a certain influence on the industry. It can bring cutting-edge information on industry development into the classroom, guide students to participate in scientific research projects by words and deeds, and have more leadership experience in team leadership, engineering practice, and project promotion. In addition, the survey found that professors and associate professors generally serve as department heads, professional leaders, and course construction leaders, and have more opportunities to participate in the development of digital policies. In terms of the decision-making power of education policy, ordinary front-line teachers are still not involved enough to have a clear understanding of the development plan for school digitalization. The school management department should give ordinary teachers more rights to speak in the decision-

Citation: Woarapongpat, N., Cai, Q., & Wongsawad, T. (2024). Creating and Validating a Digital Leadership Model for University Teachers, Liaoning Province. Journal of Education and Learning Reviews, 1 (3), 1-10; DOI: https://doi.org/10.60027/jelr.2024.740

making process, participate in school reform, and support and agree with the concept of digital development and change in the school. (Wang & Chu, 2023).

5. Suggestions and Prospects

The six abilities of college teachers complement, promote, and support each other. Digital teamwork plays an important role in teaching, scientific research, engineering practice, and social service, which further confirms that sharing and collaboration ability is the key to capacity building in teacher leadership development, which is the mainstream view of current teacher leadership theoretical research. Breaking through the individual role and behavior of teacher leadership and emphasizing collective responsibility and sharing is the development trend of contemporary theoretical research on teacher leadership. Having digital insights and digital thinking that are open to intersections, collaborative sharing, and quantitatively interconnected is key to the continued impact of the faculty team. At present, the Ministry of Education is vigorously promoting the construction of a virtual teaching and research room, with the help of digital information technology, to expand and supplement the original teaching and research room participants and teaching and research functions, on the relevant teaching, teaching, and research topics online joint research and discussion, will enhance the ability of teachers to deeply integrate digital information technology with education and teaching.(Xu et al, 2022)

Conclusion

In conclusion, the rapid integration of digital technologies in education has necessitated the development of digital leadership among college teachers. While much of the existing research on digital leadership focuses on other sectors such as corporate and government, there is an increasing recognition of its critical role in education. Teachers are now required not only to adapt to technological advancements but also to lead the transformation of teaching and learning practices in a digital age.

The construction of a digital leadership model tailored for educators is essential to address the unique challenges posed by educational environments. Such a model should emphasize technological proficiency, pedagogical innovation, change management, and the creation of collaborative networks to foster a culture of continuous learning and adaptation. By developing these competencies, teachers can effectively lead digital transformation, ensuring that educational institutions remain relevant and capable of preparing students for a technology-driven world.

Ultimately, the ability of teachers to serve as digital leaders will play a pivotal role in shaping the future of education, driving both the adoption of digital tools and the rethinking of traditional teaching methods. As educational institutions continue to face rapid technological changes, the cultivation of digital leadership will be crucial for ensuring the successful integration of digital education resources and improving the overall quality of education.

Recommendations

Based on the findings and discussions surrounding digital leadership for college teachers, several recommendations can be made to further enhance the development and application of digital leadership in education:

Implement Comprehensive Digital Leadership Training Programs: Institutions should invest in continuous professional development programs that focus on digital leadership. These programs should equip educators with the skills to use and integrate emerging technologies such as AI, big data, and cloud computing into their teaching practices. Moreover, training should emphasize both technical proficiency and leadership skills to ensure that teachers can lead digital transformations in their institutions.

Promote Collaborative Learning Environments: To foster digital leadership, institutions should encourage the creation of collaborative platforms where educators can exchange best practices, share experiences, and engage in peer mentoring. These networks will help build a community of practice that supports ongoing digital innovation in education.

Enhance Institutional Support for Digital Integration: Higher education institutions need to provide adequate infrastructure and resources to support the digital transformation of teaching and learning. This includes providing access to cutting-edge digital tools, as well as technical and administrative support for teachers navigating the complexities of digital education.

Citation: Woarapongpat, N., Cai, Q., & Wongsawad, T. (2024). Creating and Validating a Digital Leadership Model for University Teachers, Liaoning Province. Journal of Education and Learning Reviews, 1 (3), 1-10; DOI: https://doi.org/10.60027/jelr.2024.740

Develop Clear Assessment Metrics for Digital Leadership: To evaluate the effectiveness of digital leadership among teachers, institutions should establish clear metrics and evaluation frameworks. These should assess not only technological adoption but also the impact of digital tools on student outcomes and teacher engagement with innovation.

Address Resistance to Technological Change: Institutions should proactively address the challenges associated with resistance to digital adoption. This can be done through awareness campaigns, open dialogues about the benefits of digital technologies, and the creation of support systems to assist educators who may feel overwhelmed by rapid technological change.

Encourage Policy Development to Support Digital Leadership: Policymakers at both institutional and national levels should support initiatives that promote the development of digital leadership in education. This includes creating policies that incentivize the use of digital technologies and ensure that educators are empowered to lead in the digital age.

Integrate Digital Leadership Concepts into Teacher Education Curricula: Future educators should be exposed to digital leadership concepts as part of their formal education. Teacher training programs need to include modules on the use of digital tools in pedagogy, change management, and leadership in technology-driven educational environments.

By implementing these recommendations, educational institutions can ensure that teachers are well-prepared to lead the digital transformation, ultimately improving the quality and effectiveness of teaching in a technology-enhanced learning environment.

Knowledge Contribution

From the study, creation, and validation of a digital leadership model for university teachers. Liaoning Province has found knowledge summarizing how it is.

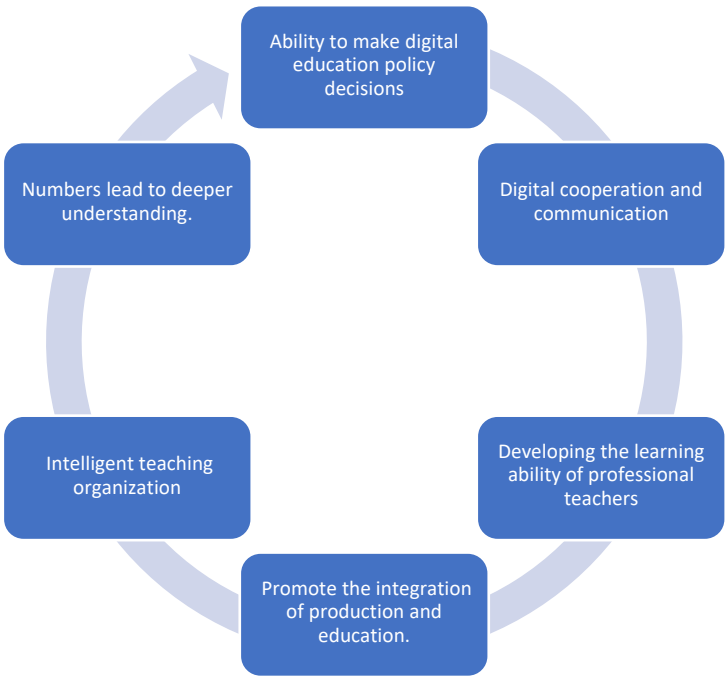

Figure 1: Components of the Teacher Digital Leadership Model

1. Most leading digital insights include the ability to explore digital consciousness. Ability to support digital morality and ethics and the ability to adapt to the digital environment.

2. The organizational power of Intelligent Teaching consists of the ability to design online instruction. Ability to lead integrated teaching Ability to apply digital information technology and the ability to evaluate academics Refers to the teacher's ability to set teaching goals. Design the teaching process and carry out activities in a smart teaching environment Achieve the ability to integrate teachers

Citation: Woarapongpat, N., Cai, Q., & Wongsawad, T. (2024). Creating and Validating a Digital Leadership Model for University Teachers, Liaoning Province. Journal of Education and Learning Reviews, 1 (3), 1-10; DOI: https://doi.org/10.60027/jelr.2024.740

and students. Create a good learning atmosphere Promote the development of critical thinking talent development and achieve the training goals of students

3. The promoting power of integrating production and education mainly includes the ability of industrial connectivity and the ability of joint education between schools and enterprises.

4. Teachers' professional development learning abilities include the ability to connect to learning communities. Ability to self-reflect and critique and the ability to manage results-oriented goals.

5. The influence of digital collaboration and communication includes the ability to collaborate in digital research. Ability to integrate and analyze digital resources. Ability to help and support team members. and the ability to independently solve problems and challenges.

6. The decision-making power of digital education policy includes the power to implement digital policy changes. Ability to create a digital campus culture and the resource allocation capabilities of digital teaching products.

References

Jogezai, N. A., Koroleva, D., & Baloch, F. A. (2023). Teachers' digital competence in the post COVID-19 era: The effects of digital nativeness, and digital leadership capital. *Contemporary Educational Technology*, 15(4), ep466.

Li, S., Li, Y., & Lin, H. (2023). Research on sustainable teaching models of new business: A case study of Chinese university business school. Sustainability, 15(10), 8037.

Ren, L., Yang, F., Gu, C., Sun, J., & Liu, Y. (2022). A study of factors influencing Chinese college students' intention of using metaverse technology for basketball learning: Extending the technology acceptance model. *Frontiers in Psychology*, 13, 1049972.

Sheninger, E. (2019). *Digital leadership: Changing paradigms for changing times*. Corwin Press.

Wang, Z., & Chu, Z. (2023). Examination of higher education teachers' self-perception of digital competence, self-efficacy, and facilitating conditions: An empirical study in the context of China. *Sustainability*, 15(14), 10945.

Wang, Z., Worapongpat, N., & Zhang, L. (2024). Leadership according to the curriculum of teachers under the foundation of wisdom education: A case study of a primary school in Yinchuan, China. *International Journal of Multidisciplinary in Educational & Cultures Studies*, 2(1), 15–28.

Worapongpat, N. (2023). Administration music courses for sustainable success: A case study of Jiangling Town Central High School, Dazhou City. *UBRU International Journal Ubon Ratchathani Rajabhat University*, 3(2), 21–39.

Worapongpat, N. (2024a). Innovative leadership that influences becoming an innovative learning organization: Private universities in Bangkok. *UBRU International Journal Ubon Ratchathani Rajabhat University*, 4(2), 29–44.

Worapongpat, N. (2024b). Learning innovations in science and technology subjects by organizing learning in a cycle of inquiry. *Journal of Public and Private Issues*, 1(1), 21–32.

Worapongpat, N. (2024c). Personnel development of schools in Phaeng Sub-District Administrative Organization. *Journal of Public and Private Issues*, 1(1), 45–54.

Worapongpat, N., & Kumla, S. (2024). Participation in academic administration of educational personnel in Education Quality Development Network Group 7 under Maha Sarakham Primary Education Service Area Office 2. *Journal of Public and Private Issues*, 1(2), 94–106.

Worapongpat, N., & Nipapon, P. (2024). Administration of the student care and assistance system of schools under the office of Kamphaeng Phet Primary Educational Service Area 2. *Journal of Public and Private Issues*, 1(2), 134–144.

Worapongpat, N., & Sriaroon, S. (2024). Strategic leadership according to the four Brahmavihāra principles in the Chiang Mai Primary Educational Service Area Office 1. *Journal of Public and Private Issues*, 1(2), 107–117.

Xu, X., Kolletar-Zhu, K., Liu, J., Zhang, Y., & Cai, N. (2022). Development and validation of a PLE scale from the academic administrative perspective (PLES-AA) in tertiary education: A pilot study in China. *Plos One*, 17(8), e0272214.

Citation: Woarapongpat, N., Cai, Q., & Wongsawad, T. (2024). Creating and Validating a Digital Leadership Model for University Teachers, Liaoning Province. Journal of Education and Learning Reviews, 1 (3), 1-10; DOI: https://doi.org/10.60027/jelr.2024.740

Zeike, S., Bradbury, K., Lindert, L., & Pfaff, H. (2019). Digital leadership skills and associations with psychological well-being. *International Journal of Environmental Research and Public Health*, 16(14), 2628.

Zhao et al (2021). The impact of gender and years of teaching experience on college teachers' digital competence: An empirical study on teachers in Gansu Agricultural University. *Sustainability*, 13(8), 4163.

Zheng, S., & Ong, E. (2023, September). Developing an eclectic blended learning model for Chinese university English classrooms: A methodological framework. *In Proceedings of the 2nd International Conference on Social Sciences, ICONESS 2023, 22–23 July 2023,* Purwokerto, Central Java, Indonesia.

Zhou, C. (Ed.). (2020). *Introducing problem-based learning (PBL) for creativity and innovation in Chinese universities: Emerging research and opportunities*. IGI Global.

Citation: Woarapongpat, N., Cai, Q., & Wongsawad, T. (2024). Creating and Validating a Digital Leadership Model for University Teachers, Liaoning Province. Journal of Education and Learning Reviews, 1 (3), 1-10; DOI: https://doi.org/10.60027/jelr.2024.740