

The Value, Current Challenges and Pathways to Enhancing Digital Literacy of Teachers in Art Vocational Colleges

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Abstract: With the in-depth implementation of the digital strategy for vocational education and the digital upgrading of the cultural industry, the enhancement of teachers' digital literacy in Art Vocational Colleges faces new demands and challenges posed by contemporary development. However, at present, the enhancement of teachers' digital literacy in art vocational colleges still faces multiple practical difficulties, including imperfect support mechanisms, weak digital awareness and skills among teachers, a shortage of digital teaching resources and platforms, and an ambiguous orientation of the evaluation system. To this end, efforts should be made to effectively promote the enhancement of teachers' digital literacy in art vocational colleges by building on the distinctive features of art vocational education and addressing aspects such as improving top-level design, strengthening training services, consolidating digital and intelligent infrastructure, and innovating evaluation systems.

1. Introduction

Amidst the in-depth implementation of the digital strategy for vocational education and the digital upgrading of the cultural industry, art vocational colleges, as the core institutions for cultivating talent with artistic and technical skills, bear the important mission of supplying high-calibre talent to support the digital transformation of the cultural industry. As the key driving force behind the digital transformation of education in these institutions, teachers face new demands and challenges regarding the enhancement of digital literacy in this era of digital transformation[1]. On 30 November 2022, the Ministry of Education issued the industry standard "Digital Literacy of Teachers", which sets out new requirements for teachers' competencies during this period of educational digital transformation and provides a unified standard and action guide for enhancing the teachers' digital literacy at all levels and in all types of institutions[2]. How art vocational colleges can implement the teachers' digital literacy industry standard and enhance teachers' digital literacy has become an urgent issue requiring resolution. Against this backdrop, this paper systematically explores the value implications, practical challenges and implementation pathways for enhancing teachers' digital literacy, with the aim of providing a reference for relevant institutions to develop teacher digital literacy and drive digital transformation in education and teaching.

2. The Value Implications of Enhancing Teachers' Digital Literacy in Art Vocational Colleges

2.1 Educational Development: The Core Driving Force for Deepening Industry-Education Integration

Enhancing teachers' digital literacy serves as the core driving force for promoting the deep integration of arts vocational education with the digital cultural industry and for deepening the integration of industry and education. From the perspective of industry alignment, the digital transformation of the cultural industry is continuously giving rise to new business models such as digital cultural creativity, virtual performances and online art dissemination, thereby imposing more explicit digital requirements on the cultivation of arts talent. Teachers with high levels of digital literacy are able to accurately grasp industry technical standards, job competency requirements and industrial development trends, thereby driving the proactive alignment of programme development, curriculum content and teaching models with industrial transformation. From the perspective of collaborative education, teachers can leverage digital technology to establish new platforms for school-enterprise cooperation, facilitating the effective integration of real-world corporate projects, industry resources and creative tasks into the entire teaching process, and promoting deep collaboration between institutions and digital cultural enterprises in talent cultivation, practical training and technological R&D. It is evident, therefore, that enhancing teachers' digital literacy can effectively break down barriers between the education and industrial sectors, strengthen the capacity of arts vocational education to serve industrial development, and provide sustained momentum for the in-depth advancement of industry-education integration.

2.2 Empowering Education: A Key Measure for Enhancing the Quality of Artistic Talent Development

Enhancing teachers' digital literacy is a key lever for optimising educational methods and improving the quality of training for arts and technical skills professionals. At the teaching implementation level, teachers with strong digital literacy can break through the limitations of traditional arts teaching—which relies primarily on on-site demonstrations and verbal instruction—by utilising smart teaching platforms, virtual simulation tools and digital creation software to conduct blended and immersive teaching, thereby enhancing the intuitiveness, interactivity and reach of instruction. In terms of skills development, teachers can utilise digital tools to guide students in cross-media artistic practice and innovative creation, thereby strengthening students' digital expression, technical application and artistic innovation capabilities, in line with the new era's talent development direction of integrating the arts and sciences. In terms of quality assurance, digital assessment and student performance analysis tools enable teachers to accurately monitor students' learning progress, implement personalised guidance and formative assessment, and effectively enhance the relevance and effectiveness of talent development. Consequently, teachers' digital literacy directly determines the effectiveness of education and serves as a crucial foundation for improving the quality of arts education.

2.3 Developmental Drive: The Core Pathway for Promoting Teachers' Professional Growth

Enhancing teachers' digital literacy is the core pathway to meeting the requirements of educational digital transformation and promoting the sustainable professional development of teachers in higher vocational arts education. In terms of conceptual renewal, improving digital literacy can drive teachers to shift away from traditional teaching paradigms, foster an educational mindset centred on digitalisation, informatisation and innovation, and proactively adapt to the

trends in vocational education reform. In terms of capability enhancement, through the practice of deeply integrating digital technology with arts teaching, teachers can continuously refine their knowledge structures and improve their comprehensive abilities in areas such as digital curriculum development, the organisation of virtual practical training, and research on teaching and learning topics, thereby achieving a role transition from traditional arts instructors to innovators in digital teaching. From the perspective of career development, digital literacy and achievements in digital teaching have become key criteria for teachers' professional title evaluations, the cultivation of key personnel, and the selection of outstanding individuals, providing clear direction and strong impetus for teachers' professional growth[3]. In summary, digital literacy has become an integral component of the professional competence of art teachers in the new era and is an essential pathway for promoting teachers' lifelong learning and professional development.

3. Practical Challenges Facing the Enhancement of Teachers' Digital Literacy in Art Vocational Colleges

3.1 Lack of Institutional Framework: Mechanisms for Developing Teachers' Digital Literacy Remain Incomplete

Firstly, there is a lack of top-level design; some institutions have not incorporated the enhancement of teachers' digital literacy into their overall development plans, nor have they formulated specific implementation schemes tailored to the characteristics of arts programmes, resulting in a lack of systematic and long-term institutional arrangements. Secondly, policy safeguards are inadequate; mechanisms for funding, incentives and penalties, and assessment and accountability regarding digital literacy enhancement have not been established or improved, resulting in low levels of enthusiasm among teachers for participating in training, technological research and development, and teaching reform. Thirdly, coordination mechanisms are ineffective; responsibilities are unclear and collaboration is insufficient among internal departments such as the Academic Affairs Office, Human Resources Department and secondary colleges; mechanisms for enhancing teachers' digital literacy through industry-academia cooperation and inter-institutional collaboration are underdeveloped, and efforts to integrate resources are insufficient.

3.2 Constraints on Key Actors: Teachers' Relatively Weak Digital Awareness and Skills

On the one hand, influenced by traditional teaching philosophies, some arts teachers have a limited digital awareness. They view arts education as primarily focused on the transmission of skills, regarding digital technology merely as an auxiliary tool. Consequently, they underestimate the importance of digital transformation and show little willingness to proactively learn and apply digital technologies. On the other hand, there is an imbalance in the digital skills profile of the teaching staff. Middle-aged and older teachers lack sufficient proficiency in smart platforms, AI tools and virtual simulation technologies. Whilst younger teachers possess basic digital skills, they lack the ability to deeply integrate digital technology with arts education, with particular shortcomings in core skills such as digital art creation, digital curriculum development and virtual practical training. Consequently, they struggle to meet the demands of arts-science integrated teaching.

3.3 Resource Shortages: Deficiencies in Hardware, Software and Teaching Resources

In terms of hardware, some institutions have insufficient investment in digitalisation. The development of smart classrooms, virtual simulation training rooms and digital creation studios is

lagging behind, whilst there is a shortage of high-performance computers, specialist design software and VR/AR equipment, making it impossible to meet the demands of digital teaching and creation[4]. On the software side, digital teaching resources are scarce. There is a lack of high-quality online courses, digital textbooks, virtual training projects and creative material libraries tailored to art programmes. Resources are severely fragmented and homogenised, and updates and iterations are slow. At the same time, the functionality of institutional digital platforms is incomplete, with insufficient capabilities in data sharing, resource management, teaching evaluation and teaching-research collaboration, which constrains the efficiency of teachers' application of digital technologies.

3.4 Imbalanced Assessment: Vague Evaluation Criteria and Ineffective Feedback Mechanisms

Firstly, there is a lack of evaluation criteria. No targeted evaluation framework has been established that integrates the "Digital Literacy of Teachers" standards with the distinctive characteristics of arts programmes; evaluation content focuses on general digital skills whilst neglecting core dimensions such as digital art creation, digital teaching design, and arts-science integration and innovation. Secondly, evaluation methods are monotonous, predominantly relying on theoretical examinations and skills tests, with a lack of formative, practical and developmental assessments, making it difficult to comprehensively reflect teachers' digital literacy levels. Thirdly, feedback mechanisms are ineffective; evaluation results are not effectively linked to performance appraisals, professional title assessments, awards and commendations, or further training and professional development. Consequently, the evaluative process fails to fulfil its role in providing guidance, motivation and improvement, and there is a lack of intrinsic motivation for teachers to enhance their digital literacy.

4. Breakthrough Strategies for Enhancing Teachers' Digital Literacy in Higher Vocational Art Institutions

4.1 Refining Top-Level Design: Establishing a Comprehensive Institutional Framework for Teachers' Digital Literacy Development

Institutions should designate the enhancement of teachers' digital literacy as a top-priority initiative and incorporate it into their 15th Five-Year Development Plan. Firstly, they should formulate institution-specific 'Standards and Guidelines for Teachers' Digital Literacy Competencies', which, taking into account the characteristics of arts disciplines, clearly define the specific requirements across core dimensions—such as digital awareness, knowledge and skills in digital technology, the application of digital teaching methods, and digital social responsibility—for teachers at different stages of development and across various specialisations. Secondly, a long-term support mechanism should be established, with dedicated funding allocated for the development of teachers' digital literacy, and the effectiveness of such enhancement incorporated into departmental performance evaluations. Greater weight should be given to achievements in digital teaching innovation during professional title reviews, post appointments, and awards for excellence, thereby stimulating teachers' initiative[5]. Finally, inter-departmental coordination mechanisms should be strengthened, with the Teacher Development Centre taking the lead in collaborating with the Academic Affairs Office, the Information Technology Development Office, and all departments to jointly formulate and implement tiered and categorised training and practical plans.

4.2 Enhancing Training Services: Implementing Tiered and Categorised Specialised Digital Literacy Training

Art vocational colleges should abandon a one-size-fits-all training model and provide targeted, ongoing support services. In terms of content, the programme is divided into two major modules: general digital literacy and discipline-specific digital literacy. The general module covers topics such as the application of smart teaching platforms, online course design and development, and data-driven teaching management; the discipline-specific module is closely integrated with different disciplines such as dance, music, fine arts and traditional opera, offering specialised training on mainstream digital creation tools, virtual simulation software and cutting-edge developments in digital art. In terms of methodology, a blended approach combining 'workshops, project-based practice, guidance from leading educators and community-based learning' is adopted, encouraging teachers to learn by doing and applying their knowledge through teaching reforms or creative projects. Regarding target groups, mandatory introductory training in digital teaching is provided for new teachers; an innovation and enhancement programme for digital teaching is implemented for key teachers; and advanced training in digital resource development and leadership is offered to subject leaders, thereby establishing a tiered development framework.

4.3 Strengthening Digital and Smart Infrastructure: Optimising Smart Teaching Environments and Resource Platforms

We will increase investment to build a digital teaching environment that is accessible, user-friendly and widely adopted. At the hardware level, we will systematically upgrade specialist computer rooms and laboratories, and establish a range of smart classrooms, virtual simulation training centres and digital art workshops to provide the physical space required for digital teaching and creative work. Regarding software and resources, art vocational colleges should: firstly, reduce the cost of acquiring licensed professional software through industry-academia collaboration and group procurement; secondly, establish or co-develop a cloud platform for digital resources in arts vocational education, systematically aggregating high-quality digital courses, case studies, material libraries and virtual simulation projects through in-house development, external acquisition and collaborative development; thirdly, establish a dedicated research project for the development of digital teaching resources to incentivise teaching teams to create resources with school-specific and discipline-specific characteristics, whilst establishing mechanisms for sharing and certification.

4.4 Innovating the Evaluation System: Establishing a Digital Literacy-Oriented Teacher Evaluation Mechanism

Art vocational colleges should reform the teacher evaluation system to harness its positive guiding function. Firstly, they should optimise evaluation criteria by explicitly adding assessment points for digital teaching capabilities within teacher performance indicators, such as the quality of digital lesson design, the effectiveness of blended online-offline teaching, achievements in developing digital teaching resources, and the outcomes of guiding students' digital innovation practices. Secondly, evaluation methods should be diversified by comprehensively utilising data from teaching platforms, classroom observations, student evaluations of teaching, reviews of digital work, and peer reviews to conduct multi-dimensional, formative assessments of teachers' digital literacy performance. Thirdly, developmental feedback should be strengthened by establishing digital literacy development portfolios for teachers. Evaluation results should be communicated to teachers in a timely and specific manner, accompanied by targeted recommendations for improvement, training resources or expert guidance. This approach aims to promote learning, drive

improvement and foster development through evaluation, ultimately creating a virtuous cycle that integrates assessment, training and professional growth.

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