Cultivation Paths of Academy Teachers' Digital Literacy in the Context of Educational Digital Transformation

Ying Fan, Peng Han *

Engineering University of PAP, Xi'an, Shaanxi, China

* Corresponding author: Peng Han

Abstract

With the in-depth digital transformation of education, intelligent technology reshapes education but also risks meritocracy, making university teachers' digital literacy pivotal to teaching effectiveness and talent training. Drawing on the EU and Chinese teachers' digital literacy standard, this paper analyzes four core challenges for teachers, and proposes a systematic cultivation approach covering ideological consolidation, hierarchical training, application-driven innovation and support mechanism optimization. The research stresses balancing technological innovation with educational essence and fulfilling the mission of fostering virtue to support higher education modernization.

Keywords

Cultivation Paths; Academy Teachers; Digital Literacy.

1. Introduction

With the in-depth advancement of educational digital transformation, intelligent technology is reshaping the form of education, bringing revolutionary opportunities and challenges to education. Teachers' digital literacy is not only related to the improvement of teaching efficiency, but also directly affects the quality of training new-type talents. At present, while pursuing efficiency and precision, intelligent education also hides the risk of falling into the trap of "meritocracy". How to construct a digital literacy system for university teachers under this background has become an urgent issue.

2. Digital Literacy Frameworks and Cultivation Experience for European and Chinese Educator

2.1. European Union Framework

the European Union Framework for the Digital Competence of Educators (DigCompEdu), covering six core elements[1]. In addition, European Union have developed a variety of self-assessment tools to help teachers diagnose their own ability shortcomings in real time and achieve precise and personalized professional development.

In terms of cultivation path, the European Union has implemented a multi-dimensional system strategy: strengthen new digital infrastructure; carry out diversified training on the integration of digital technology; build a digital learning community for teachers; improve digital ethics and security norms, and guide teachers to use skills responsibly; Fifth, develop scientific evaluation tools and standards to realize the transformation of teaching evaluation from empirical judgment to data-driven.

The experience of the European Union shows that teachers' digital literacy improvement is not a single dimension of technical training, but a systematic engineering covering cognition, ability, system and culture.

2.2. Chinese Framework

In 2022, the "Digital Literacy for Teachers" (JY/T0646-2022) education industry standard was officially promulgated [2]. This framework not only provides authoritative guidance at the national level for the development of teachers' ability, but also promotes the exploration of the systematic cultivation model in colleges and universities. For example, the "assessment-evaluation-training" integrated path proposed by Duan Lijing et al. realizes customized training through the analysis of teachers' digital portraits [3]. The three-stage progressive training strategy of "learning-application-creation" for vocational college teachers proposed by Sun Yanchun reflects a competency leap model that follows cognitive laws and emphasizes practical innovation [4]. Secondly, it is necessary to build a digital teaching support system.such as build a smart campus and establish a teacher incentive system linked to digital literacy [5].

However, the current cultivation work still faces many challenges, such as cognitive biases among some teachers, insufficient ability to deeply integrate digital technology with teaching, and an imperfect guarantee system.

3. Practical Dilemmas of University Teachers' Digital Literacy

3.1. Cognitive Dilemmas

University teachers have deep-seated biases and limitations in digital cognition, which restrict the internal motivation for improving their digital literacy. First, some teachers have an insufficient understanding of the strategic significance of educational digital transformation. They still simply regard digital technology as a tool to assist teaching. This cognitive bias of "technological instrumentalism" leads to the superficiality of digital teaching reform, which is difficult to touch the connotation and essence of education and teaching. Second, the deep-rooted traditional teaching model has formed inertial resistance. Many teachers even have a psychological fear of difficulty and rejection. This overall cognitive bias not only leads to a disconnect between digital technology and the fundamental goals of education and teaching, but also restricts the continuous improvement of the quality of talent training.

3.2. Competency Dilemmas

At the level of digital competence, college teachers generally face the systemic challenge of deep integration of advanced technology and subject teaching practice. First, teachers often lack the ability to organically integrate and innovatively design digital tools with specific professional courses. Secondly, the creation of high-quality digital teaching resources faces practical problems such as high technical thresholds, which hinder the continuous output and sharing of high-quality content. In addition, teachers' skills in using learning analysis technology for dynamic diagnosis of teaching processes and accurate evaluation of students' abilities are still relatively weak, thus affecting the implementation effect of individualized teaching. This series of competency gaps prevents digital technology from fully and deeply empowering the entire process of student-centered high-quality talent training.

3.3. Guarantee Dilemmas

A sound guarantee system is the foundation for the continuous development of university teachers' digital literacy. However, at present, ordinary universities still have obvious shortcomings in this regard, which to a certain extent restricts the effective improvement of teachers' digital capabilities. In terms of infrastructure, the construction of digital platforms is still unbalanced and inadequate. The update and iteration speed of training content is often lagging behind the rapid evolution of educational technology. In addition, the mechanism for co-construction and sharing of high-quality digital teaching resources between universities

and between universities and enterprises is not smooth. Due to multiple barriers such as copyright, platform standards, and evaluation mechanisms, there are problems of redundant construction and low utilization efficiency, which to a certain extent widens the gap in digital teaching levels between universities in different regions and types.

3.4. Ethical Dilemmas

When education is deeply empowered by technology, how can we ensure that we still adhere to the dominant position of "educating people" and not become executors of system algorithms? On the one hand, the efficiency and accuracy of technology can easily give rise to the "cult of intelligence" [6]. On the other hand, excessive reliance on data-driven makes our teaching subjectivity face dissolution [7]. The more core problem is that there is an unavoidable fundamental tension between the objective fairness claimed by intelligent systems and the indispensable diverse characteristics of talents: algorithms tend to standardize performance, and the value of outstanding talents lies precisely in their unique personality traits.

4. The Path of Cultivating Digital Literacy for University Teachers

4.1. Build a Solid Ideological Foundation and Establish the Right Direction

In the process of digital education transformation, it is necessary to first consolidate the ideological foundation of the teaching team. Through systematic theoretical learning and thematic seminars, we will deeply understand the connotation requirements of Marxist educational views in the intelligent era, accurately grasp the fundamental purpose of higher education talent training, and explore value-oriented issues in digital teaching in combination with the characteristics of higher education. Establish a regular case analysis mechanism, select typical teaching scenarios, analyze possible value deviations in the application of technology, and enhance teachers' value judgment ability. At the same time, deeply integrate traditional culture with digital teaching, develop digital ethics courses with university characteristics, and help teachers always maintain the correct direction of educating people in technological innovation. Improve the teaching supervision mechanism, and incorporate the effect of value guidance into the teaching quality evaluation system to ensure that digital teaching always serves the fundamental goal of talent training.

4.2. Build a Training System and Improve Digital Capabilities

Establishing a scientific and sound digital technology training system is the key to improving teachers' digital literacy. Design hierarchical and classified training programs, and carry out differentiated and precise technical ability training for teachers with different disciplinary backgrounds and teaching needs. At the basic level, focus on popularizing essential skills such as intelligent teaching platform operation and data analysis tool application; at the professional level, prioritize professional applications including virtual simulation technology and intelligent evaluation systems; at the innovation level, emphasize cultivating teaching design capabilities and technology integration competence.

4.3. Connect with Social Needs and Strengthen Application Innovation

Applicability and innovation are the key focuses of digital teaching reform in ordinary universities. A dynamic research mechanism for industrial development and talent needs should be established. Accurately grasp the new requirements of society for graduates' knowledge, abilities, and literacy. On this basis, build a digital teaching resource library and virtual simulation training platform oriented to real industry scenarios, etc., into usable teaching materials and simulation environments. It is necessary to deepen the industry-university collaborative education mechanism, and ensure that the training of teachers' digital

technology application capabilities keeps pace with industry development through forms such as co-building practice bases.

4.4. Optimize the Guarantee Mechanism and Improve the Development Environment

A sound guarantee mechanism is the basis for the continuous improvement of digital literacy. Establish and improve the institutional system for digital literacy development, and formulate teachers' digital ability standards and development plans. Deepen the connotation of school-enterprise cooperation, increase the intensity of resource investment, build a digital teaching support platform, and provide special services for technical consultation and resource development. Innovate the evaluation and incentive mechanism, create a good atmosphere of daring to innovate and tolerating failure, and support teachers in carrying out digital teaching exploration. Establish an interdisciplinary collaboration mechanism to promote the exchange and cooperation of teachers from different majors in the field of digital teaching. Build a hierarchical training system, give play to the role of backbone teachers in mentoring, and form a echeloned development pattern. Regularly organize teaching competitions and achievement display activities to stimulate teachers' internal motivation to improve digital literacy.

5. Conclusion

In the tide of rapid development of intelligent technology, the improvement of university teachers' digital literacy must always serve the fundamental mission of fostering virtue through education. It is necessary to take the initiative to embrace technological innovation, but also to strictly guard against technology In the future, it is necessary to continuously deepen theoretical research and practical exploration, and constantly improve the systematic digital literacy cultivation system and supporting ecosystem, so as to provide solid support for training new-era talents capable of shouldering the responsibility of national rejuvenation, and ultimately promote the modernization of higher education towards higher quality and higher level.

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