

# Strategies for Improving Digital Literacy of University Teachers

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**Abstract:** With the advent of the digital age, higher education is facing many challenges from integrating digital technology into education. In order to effectively respond to these challenges, university teachers need to possess better digital literacy to help learners fully adapt to the future digital society. The article analyzes and explores the connotation and constituent elements of digital literacy, formulates a digital literacy framework for university teachers in the digital age, and proposes strategies for improving digital literacy for university teachers based on this: it is necessary for the government to develop a hierarchical digital literacy framework for university educators; We need to focus on exploring new paths for the integration of distinctive digital literacy and university subject courses; Increase the training of digital skills for university teachers, enhance their digital teaching abilities, and achieve the goal of empowering learners with digital technology.

**Keywords:** University teachers; Digital literacy; The digital age; Digital teaching ability; Improvement strategies

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## 1. Introduction

With the advent of the digital age, teachers need to have better digital literacy to meet the challenges of technology integrated teaching and learning, and help students to prepare adequately for life and work in the digital society. Since 2020, the global education system has also been confronted with great challenges and impacts due to the abnormal development of novel coronavirus pneumonia. During the epidemic, online education in China has been vigorously promoted, but at the same time, a lot of online education and teaching problems have also been exposed. More importantly, the digital literacy of teachers and students needs to be improved, and the digital teaching ability of teachers needs to be improved<sup>[1]</sup>.

Based on the above background, this article analyzes and sorts out the connotation of digital literacy both domestically and internationally, elaborates on the components and elements of digital literacy, designs a framework and capability model for digital literacy of university teachers in the digital age, and analyzes the strategies for improving digital literacy of university teachers, in order to provide assistance for teachers to enhance digital literacy and respond to the challenges of digital teaching<sup>[2]</sup>.

## 2. Connotation of digital literacy

A term similar to digital literacy is called “digital ability”, and there are both differences and connections between digital literacy and digital ability. Some scholars believe that digital ability refers to the ability to use information technology in learning, work, entertainment, and other social activities. Some scholars also refer to digital ability as “digital competence” and believe that digital ability is essential ability for specific jobs<sup>[3]</sup>.

This article attempts to define the connotation of digital literacy. It believes that digital literacy refers to the

ability of teachers to use digital technology for teaching, including the ability to develop digital teaching strategies, guide students to use digital technology, and use digital technology to help students achieve learning goals.

### **3. Elements and framework design of digital literacy for university teachers**

#### **3.1 Analysis of the elements of digital literacy at home and abroad**

European Digital Literacy Framework for Educators include six major components: professional participation domain, digital resource domain, teaching and learning domain, evaluation domain, empowering learner domain, and promoting learner digital literacy. It is one of the authoritative frameworks for international education organizations to enhance and standardize the digital literacy of educators<sup>[4]</sup>.

On the basis of referencing foreign research, domestic researchers have proposed the constituent elements of digital literacy. For example, Guo Jiong and others believe that the constituent elements of digital literacy can be divided into technology (consciousness and emotion, ontology knowledge, application ability, technical thinking), Education (intelligent education concept, intelligent education thinking, intelligent teaching design, intelligent teaching implementation and evaluation) and society (social cognition, social responsibility, and social leadership). Hu Xiaoyong and others proposed that the constituent elements of teachers' intelligent education literacy include four levels: knowledge foundation, ability aggregation, thinking support, and cultural value deepening<sup>[5]</sup>.

#### **3.2 Design of digital literacy framework for university teachers**

At present, online and offline blended teaching has gained a large number of applications and will become the future development trend of higher education. Therefore, improving the digital teaching ability of university teachers has great significance for promoting the digital construction of university education and promoting the high-quality development of university education and teaching. The digital literacy framework for university teachers can facilitate the quantitative evaluation of teachers' digital literacy by education management departments, and is also a key factor in promoting teachers' professional development<sup>[6]</sup>.

Through literature review at home and abroad, the digital literacy framework of foreign university teachers focuses on three aspects: learner-centeredness, innovative teacher roles, and innovative teaching methods. The research on the digital literacy framework of domestic teachers pays more attention to the mastery of teachers' information technology abilities, and presents characteristics consistent with the stages of educational informatization development<sup>[7]</sup>.

Professional abilities include the following abilities:

- (1) Ability to use digital teaching software.
- (2) Ability to use digital technology for organizational communication and cooperation with others.
- (3) Ability to use digital technology for teaching review.
- (4) Ability to use digital technology to promote professional development.

Teaching abilities includes the following abilities:

- (1) Ability of Hybrid learning design.
- (2) Ability to choose digital teaching content.
- (3) Awareness of digital resource protection.
- (4) Ability to adjust teaching strategies.

Learner abilities includes the following abilities:

- (1) Meet learner's personalized needs.
- (2) Cultivate learner's motivation and creativity.
- (3) Cultivate learner's collaborative spirit.
- (4) Promote learner's self-study.

In the digital age, university teachers should have the ability to use various digital teaching software to communicate with students and parents, to reflect on teaching and promote professional development, and to analyze teaching data and adjust teaching strategies. In addition, digital technology can help teachers continuously meet students' personalized needs, improve their learning initiative, and ultimately achieve the goal of enhancing students' autonomous learning ability through student-centered teaching activities<sup>[8]</sup>.

### **4. Strategies for improving digital literacy of university teachers**

#### **4.1 Develop a hierarchical digital literacy framework for university teachers**

Online and offline blended learning mode will become the main direction of the development of higher education in the future. The

blended learning model puts forward higher requirements for the digital literacy level of teachers. The introduction of a hierarchical digital literacy framework will provide a standard measurement standard for evaluating the digital literacy level of university teachers, which will help to clarify the development direction of digital literacy of university teachers.

#### **4.2 Increase the training of digital skills for university teachers and enhance their digital teaching abilities**

The training of digital skills of university teachers should not only include the training of digital teaching ability, but also include the training of improving the awareness of university teachers' data privacy and the importance of digital identity. University teachers should have the ability to manage their own data, evaluate and judge the source of information, and ensure the reliability of data.

#### **4.3 Exploring a new path of integrating distinctive digital literacy with subject courses**

With the continuous development of information technology, digital literacy has become a hot topic in universities. Some scholars have studied foreign language teaching practices in Europe from the perspective of digital literacy, while others have analyzed the integration of digital literacy and subject courses from the perspective of the integration of digital literacy education and art education courses. Domestic research has focused on the integration of digital literacy and subject courses, but has rarely focused on specific subject characteristics and methods. Therefore, it is urgent to explore how to determine appropriate digital technologies based on the nature of subject courses for the improvement of digital literacy of university teachers in China<sup>[9]</sup>.

### **5. Conclusion**

The wave of digital technology has brought enormous challenges to education. Digital technology has weakened the role of teachers in imparting knowledge and highlighted their role in cultivating students' literacy and personality. In order to further cultivate a professional, high-quality and innovative teaching team, firstly, in order to standardize the evaluation of digital literacy of university teachers, the education management department needs to develop a framework for the evaluation of digital literacy of university teachers. Secondly, university teachers should actively use digital technology to promote the transformation of classroom teaching models, in order to better cultivate students' digital literacy abilities. Finally, university teachers should actively participate in digital literacy training, enhance their educational data analysis abilities, and continuously enhance their digital teaching abilities.

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