

Research on Countermeasures for Improving the Digital Literacy of College Teachers

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Abstract: In recent years, college teachers have been facing new opportunities and challenges in the wave of digital transformation of education. The cultivation of digital literacy of college teachers is the key to the construction of a high-quality education system, which is also related to the improvement of teaching effectiveness, and is also a necessary condition for adapting to the development of education informatization. Teachers' digital skills are an important soft power to promote the digital transformation of education, not only a fundamental force for building a high-quality education system, but also an indispensable cornerstone for cultivating high-quality talent. Particularly for college and university teachers, digital skills are not only an improvement in learning outcomes, but also an indispensable condition for adapting to the development of the informatization of education. This study aims to provide theoretical support and practical guidance for college teachers' digital literacy cultivation and teaching practice, and provide certain thinking, inspiration and practical paths for college teachers' digital transformation.

Keywords: College teachers; Digital literacy; Countermeasure research

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1. Introduction

In recent years, with the advent of the digital age and its rapid development, higher education in our country has also undergone rapid changes, which have led to higher demands on teachers. The issue of teachers' digital competence is becoming increasingly important. In the report from the 20th National Congress of the Communist Party of China, President Xi Jinping presented an important strategy for implementing education that satisfies citizens from the perspective of the development of the entire party and state, emphasizing that "we should promote the digitization of education and build a science-based society and a science-based great power, in which all citizens will practice lifelong learning". Digitization has become an inevitable trend in education reform and development, and digital technologies are gradually penetrating into curricula, changing educational methods and content, improving the quality and efficiency of education, enriching educational resources and means, and expanding the space and time for student learning^[1]. Currently, the application of digital technologies in education can improve the quality and efficiency of classroom teaching while accelerating the pace of educational reform to meet the requirements of

the new era. However, to fully leverage the role and value of digital technologies, a broad range of teachers must possess excellent digital skills. The digital transformation of teachers is a key element of the digital transformation of education, and improving teachers' digital skills is a challenge facing the professional development of teachers in the process of the digital transformation of education. Therefore, educators must seize the key opportunities associated with the digital transformation of education, strengthen their ability to adapt to the digital society, and actively respond to the challenges of teacher education in the era of digital education ^[2].

2. The connotation of digital literacy of college teachers

Digital literacy is a new concept derived from the continuous development of the digital age, which mainly refers to abilities and skills in various aspects such as computers, media and information. Simply put, people can apply and process information, and having this skill means that a person is digitally competent and can flexibly apply all kinds of digital information to improve the efficiency of solving real-world problems. It also brings great convenience to daily work and learning. Academics need to have good digital skills in the digital age, as this can facilitate teaching and learning, enrich teaching materials and meet the individualized and diverse learning needs of students. The role of the academic teacher in the digital age can be divided into four main roles ^[3].

First, the role of the learner requires teachers to continuously acquire digital knowledge and skills. In the digital age, the pace of updating knowledge changes every day, and digital technologies are exploding. Teachers in higher vocational schools must change from "knowledge bearers" to "lifelong learners," proactively adapt to technological advances, and build a dynamically updated system of digital competencies. Second, the role of designer requires teachers to design digital curricula. In the digital age, the learning environment and students' needs in higher education have changed significantly, so teachers need to take on the role of designer and use digital tools to design personalized curricula that meet the learning needs of different students. Change from a traditional lesson plan creator to a designer of integrated learning scenarios in virtual reality. Third, the role of facilitator. Teachers must facilitate students' digital learning. In the digital age, higher vocational teachers, as facilitators, have the important task of stimulating students' interest in digital learning and guiding them to use digital resources for self-directed learning ^[4]. College teachers must transform themselves from knowledge bearers to facilitators of personalized learning with technical competence. Fourth, the role of the analyst. Teachers must optimize data-driven teaching. In the digital age, senior educators must fully play the role of analysts through in-depth analysis of student learning data to provide a scientific basis for teaching decisions and fine-tune instructional strategies to effectively improve the quality of education ^[5]. Shift from assessment evaluators to experts in big data mining in education and move from performance evaluation to process data insights.

In conclusion, in the context of digitization, the role of teachers is no longer unique. Higher education teachers must take the lead to better adapt to the digital age, to provide better educational services and cultivate talent that can meet the needs of the times for the country. Higher education is the cornerstone of cultivating the talents of the times and an important channel for promoting employment, so it is necessary to enhance the adaptability of higher education, actively embrace digital transformation and integrate it into our own holistic and systematic transformation, to transform the new ecology of higher education and bring new vitality to the future development of society.

3. Countermeasures for enhancing digital literacy of university teachers

3.1. From passive to active: Raising academics' awareness of digital skills

The digitization of education has already moved from simply applying technology to deeply constructing and

understanding digital meanings, and it has become especially important to raise teachers' digital awareness as a bridge between theory and practice, tradition and innovation. The first step to improving the digital skills of university teachers is to raise their awareness. As university teachers, we need to deepen our understanding of the digital age and understand the range of impacts that digital technology has had on teaching and learning practices in universities.

First, it is important to strengthen the understanding of the concepts involved in digital education. Only with an in-depth understanding of the concepts and knowledge of the ethical and moral aspects of digital technologies in teaching and learning can we successfully mobilize the interrelated elements of computer literacy, information literacy and information technology literacy, and improve the quality and effectiveness of teaching and learning activities ^[6]. Improving teachers' digital skills can also provide a good guarantee of teaching quality and effectiveness. In university teaching, digital technologies can promote the expansion and extension of teaching, such as distance learning, virtual labs and so on, and in order to take full advantage of the advantages of these resources, the first thing that is required is good digital skills for teachers, which can provide a guarantee for the smooth implementation of relevant teaching work, enhance teachers' digital awareness and improve their digital skills. In order to take full advantage of the advantages of these resources, the first thing that is required is for teachers to have good digital skills, so that they can guarantee the smooth implementation of relevant teaching work, increase their digital awareness, improve their digital skills, and carry out relevant teaching activities in accordance with specific teaching content.

Second, education administrations and higher education institutions must provide the necessary resources, including high-quality equipment, rich digital learning resources and convenient teaching platforms. At the same time, teachers should be encouraged to take the initiative to engage in digital teaching and learning practices, discover innovative teaching methods through research and practice, and become proficient in using various software and learning platforms, such as learning management systems and online assessment tools, to enhance the interactivity and personalization of teaching and learning. In addition, they should actively collaborate with experts from other disciplines and integrate interdisciplinary digital teaching resources to promote innovation in teaching ^[7]. Finally, as leaders of education reform, we must be mindful of the trend toward technological rationality and a return to the true nature of education. Therefore, it is necessary to integrate dynamic evaluation into the use of technology to ensure the legitimacy and morality of teaching and learning activities, and to establish a dynamic balance between digital technology and humanistic care so that digital education is both effective and humanistic.

Finally, raising educators' awareness of digital literacy also contributes to their professional development. With the continuous development of digital technology, higher education teachers need to have good digital teaching skills. With the continuous development of digital technology, teachers in colleges and universities must have good digital teaching skills, which is a necessary professional quality and at the same time, can also expand the opportunities for teachers' professional development and improve their professional competitiveness in a subtle process. To achieve the above goals, in the further development process, colleges and universities should increase publicity and promotion, so that all teachers can recognize the importance of digital technology, create a good sense of self-study, and continuously improve their digital skills to better meet the needs of modern teaching.

3.2. Narrowing the gap: Comprehensively improving the digital literacy training system for teacher educators

Teaching digital literacy is a long-term process, not something that can be achieved immediately through short-term training. Traditional approaches to training tend to develop digital literacy in short-term, incremental steps, which ignore the need for comprehensive and continuous development of teachers' digital literacy. The lack

of continuity reduces the effectiveness of training, as some teachers acquire superficial skills without a deep understanding of digital education and struggle to use digital tools, creating a digital divide.

Schools need to create an integrated, multi-level, and multi-format learning system to ensure that learning is relevant and practical, and that teachers' digital literacy is comprehensively and systematically improved. First, needs analysis: as a first step in improving teachers' digital literacy, a comprehensive assessment of teachers' current level of digital literacy should be conducted and their needs and gaps in terms of digital skills, resource utilization, IT application, and curriculum integration should be deeply analyzed. Through questionnaires, individual interviews, workshops, etc., teachers' expectations regarding content, methods and duration of learning need to be accurately identified to provide strong support for the development of digital literacy.

Secondly, the training is phased. Firstly, teachers must attend basic training, which focuses mainly on the main skills and relevant theories, such as the flexible application of digital learning platforms, the effective completion of course design, the flexible management of multimedia equipment, etc., which are the main skills that university teachers must possess. Secondly, in-depth training is provided to enable teachers to learn more about digital technologies, including course design, course evaluation, online communication, online teaching strategies, etc. Thirdly, practical training using digital technologies is provided. Thirdly, experiential learning provides teachers with practical opportunities such as creating multimedia learning programs, running online courses, developing online courses, etc. Fourthly, learning assessment, which focuses on the development of digital skills. Fifthly, learning assessment, which consists of evaluating learning outcomes and optimizing teaching methods, content and media to increase the digital literacy of university teachers^[8].

Third, a mechanism for systematic and long-term learning needs to be established: to encourage teachers to continue learning and improving, they should develop a multifaceted curriculum based on their professional experience and real needs, covering basic digital skills, the use of software for teaching, and the acquisition and integration of digital resources. Through case studies, simulated learning, and project-based practice, teachers can learn and apply digital technologies in real-world learning situations to truly enhance their teaching. Additionally, digital literacy programs can be created to provide teachers with resources for continuous learning and practice, and incentives can be created to encourage teachers to use digital technologies innovatively in their teaching.

3.3. Improvement of mechanisms: Establishment of a digital teaching resource base

Entering the digital era, college and university teachers should have good digital knowledge; only then can they use digital teaching resources efficiently and provide a good guarantee for the quality and impact of teaching^[9]. Through the creation of digital teaching resources, we can promote the development of university education towards digitalization, and at the same time, develop and improve teachers' digital knowledge in a rigorous process. In practice, colleges and universities should promote the classification of digital teaching resources and then carry out standardized management. At the same time, it is also important to do a good job in resource maintenance and development, and in practice, schools need to further standardize digital teaching resources and cancel some ineffective and repetitive teaching resources to achieve the purpose of improving the efficiency of resource application^[10]. Professional training and support can also be provided To help teachers make better use of digital resources. Vocational colleges and universities can cooperate with external organizations such as companies and other educational institutions to share digital resources, encourage teachers to share resources, and establish mutual support networks for teachers.

4. Conclusion

In summary, with the arrival of the digital era, teachers are facing certain difficulties and challenges. Teachers, as the first educators, should take the initiative to seek changes to adapt to the requirements of the development of the times, and at the same time, the school should also provide avenues two and support for the development of teachers' digital literacy. With the joint efforts of many parties, we can meet the requirements of educators in the digital era, so as to cultivate talents who meet the development needs of the times.

Disclosure statement

The author declares no conflict of interest.

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