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Review Article

Enable Technology to Continuously Empower the Professional Development of Teachers

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Abstract

To achieve the integration and innovation of information technology and education and teaching in universities, It is necessary to continuously empower teachers. From the perspectives of individuals, institutions, and universities, this paper selects knowledge, belief, and culture to discuss how to continuously improve teachers' abilities using modern educational technology. It provides some advice for the reform of university information technology teaching practices.

Keywords: University lecturers; Professional development; University teaching; Education technology

Introduction

As the primary source of education, teachers and their professional development have always been an important topic. Research of teacher professional development started in the United States in the late 1960s and flourished in Europe and America in the 1970s to 1980s. However, the research in China began in the 1980s. Over the past 40 years, significant achievements have been made in teacher professional development. As new technologies, such as virtual reality, augmented reality, and artificial intelligence, have been integrated into teaching, teacher professional development has undergone substantial changes. Improving the technology-based teaching abilities of teachers has become a key aspect of professional development, especially from the perspectives of knowledge, beliefs, and culture on individual, institutional, and university levels [1]. How to empower teachers with technology is always on the way.

Learn Continuously to Improve Teaching Knowledge

Knowledge is an important part of teachers' personal development and a key variable in their technical practice. Teachers' knowledge directly affects their thinking, which determines their actions in the classroom. The knowledge system of teachers follows the "pedagogical content knowledge" (PCK) system proposed by Shulman [2]. In 2006, Koehler et al. introduced technology into Shulman's knowledge system and proposed "technological PCK" [3]. Based on the interaction among technology, content, and teaching methods, researchers have proposed a pedagogically integrated technology content knowledge system and a technological PCK knowledge system based on information and communication technology. The commonality of these systems is that teachers' knowledge must include knowledge of the subject itself, the technical tools, and what is required to achieve each teaching

goal. Moreover, knowledge constantly undergoes rapid changes. University teachers may never have a "complete" understanding of the available tools, which requires them to be lifelong learners and constantly improve their knowledge systems.

Serve Accurately to Enhance Teachers' Confidence in Technical Practice

Support services are important for the effective reform of teaching methods [4]. University lecturers have long been expected to use new technology to achieve education and teaching reform and innovation. However, this increases the workload of teachers. According to Schumpeter's innovation theory [5], innovation is disruptive. It is more difficult to do something new than to do something familiar, thus people are more reluctant to engage in new activities, even if there is no objective difficulty. Therefore, institutions such as teaching platform suppliers, academic affairs offices, and educational technology centers of universities should supply accurate services to reduce the workload of teachers and alleviate the maladjustment, exclusion, and anxiety caused by integrating new technology into teaching practices. Improving teachers' knowledge systems is important, but providing technical services and enhancing their beliefs may be even more critical.

Research shows that teachers' personal beliefs are directly based on their personal experiences. A successful experience has a strong impact on the development of teachers' abilities to use technology. In the era of the internet, teachers should be aware of their evolving roles. Teachers should not only be knowledge imparters but also guides and companions to students. Teachers should change their beliefs and make students the main agents of learning. In fact, the best way to change a teacher's behavior is to benefit their students. If a teacher wants to accept new ideas of teaching and learning, they must first understand what these ideas mean for the students and how to implement them.

Build Technical Culture to Promote Education Reform

Undoubtedly, education reforms resulting from new technologies will remain a core issue for the foreseeable future. Education reform depends on teaching reform, which requires considerable effort and is affected by teachers' knowledge, teaching beliefs, and work culture. Universities are where teachers work and the important matrix from which the core qualities and abilities of teachers develop. Their behavioral choices, thought processes, and professional development are inseparable from university culture, which is the sum of the educational practice activities of teachers and students in the university. In the construction of university culture, university managers are the shapers and leaders. In the new technology environment, university managers should consider the relationship between technological innovation and educational reform and establish a technical culture to promote the application of technology in teaching practice.

Universities should clarify the meaning of "high-quality" teaching, provide suitable incentives, evaluate the application of new technology, and create a technical culture oriented towards teaching reform and innovation to support innovation in teaching practice.

University culture is an inexhaustible driving force for university development. Only by establishing a supportive cultural environment to apply technology in universities' material, spirit, institutions, and behaviors can technology enable the professional development of teachers and promote education reform.

Conclusion

The development of artificial intelligence has promoted a global "Internet plus" education reform movement. Online teaching platforms are constantly improved through upgrading and expansion, and the experiences of teachers and students using these platforms have also gradually improved. Colleges and universities should pay attention to the achievements in online teaching, question and reconstruct teaching modes, and leverage new technologies to transform online teaching into a starting point for the professional development of university lecturers and new opportunities for innovative teaching.

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Conflict of Interest

No conflict of Interest.

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