Education Reform and Development, 2025, Volume 7, Issue 7
https://ojs.bbwpublisher.com/index.php/ERD
Online ISSN: 2652-5372
Print ISSN: 2652-5364

Research on the Integration of Information Technology Application and Online Course Teaching Abilities

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Abstract: With the rapid development of information technology in China, profound changes are taking place in the field of education. As an important part of vocational education, the improvement of teachers' information technology application and online course teaching abilities in higher vocational colleges is particularly crucial. Based on this, the author will analyze in detail the current problems faced by teachers in higher vocational colleges in terms of information technology application and online course teaching, and propose corresponding solutions to these problems, hoping to provide some reference and assistance to readers.

Keywords: Information technology application; Online course teaching; Ability improvement

Online publication: July 31, 2025

1. Introduction

In the digital era, the widespread application of information technology has produced far-reaching impacts on various aspects of people's daily lives. With the in-depth implementation of the "Internet + Education" initiative, higher vocational colleges, as the main battlefield of vocational education, see teachers' information technology application abilities and online course teaching abilities as directly related to the final outcomes of vocational education informatization reform. Therefore, exploring how to effectively enhance the information technology application abilities and online course teaching abilities of teachers in higher vocational colleges is not only a positive response to the current educational situation but also the key to promoting the cognitive development of higher vocational education and achieving dual improvements in educational equity and quality.

2. The value of enhancing information technology application and online course teaching abilities for teachers in higher vocational colleges

2.1. Promoting teachers' personal career development

In the tide of informatization in education, mastering advanced information technology and online teaching methods has become a core element for teachers to adapt to educational changes and maintain professional

competitiveness. Through continuous learning and practice, teachers can proficiently use various teaching software, online platforms, and digital educational resources, thereby effectively optimizing course design and enhancing teaching effectiveness [1]. Meanwhile, the improvement of information technology applications and online teaching abilities is also an important pathway for teachers to broaden their teaching horizons and facilitate professional growth. By participating in online education communities, attending educational technology seminars, sharing teaching experiences, and other activities, teachers can gain access to more advanced teaching concepts and methods, engage in in-depth exchanges with peers, and continuously reflect on and improve their teaching practices.

2.2. Driving the reform and development of higher vocational education

Traditional higher vocational education often focuses on the imparting of theoretical knowledge and the training of vocational skills. The introduction of information technology and online teaching, however, provides teachers with more diversified teaching resources and tools, enabling them to design more lively, interesting, and interactive teaching activities [2]. This not only increases students' learning interest and participation but also promotes deep understanding and application of knowledge, making higher vocational education more in line with modern society's demands for talent cultivation.

With the continuous development of information technology, more and more professional courses are beginning to integrate digital and intelligent elements, forming a curriculum system with distinctive characteristics of the times [3]. By learning and applying information technology, teachers in higher vocational colleges can continuously explore and experiment with new teaching modes and methods, driving the continuous optimization and innovation of courses. Furthermore, the improvement of information technology applications and online teaching abilities also contributes to promoting equity and popularization in higher vocational education. Online education breaks the limitations of time and space, allowing more students to have access to high-quality higher vocational education resources [4]. Teachers in higher vocational colleges can utilize online platforms to provide remote teaching services to students in remote and underdeveloped areas, narrowing the regional disparities in educational resources and promoting the realization of educational equity.

2.3. Serving socioeconomic development

With the rapid development and widespread application of information technology, the demand for talent in various industries is constantly changing, and talent with information technology application abilities and online learning abilities is increasingly favored. By enhancing their information technology application and online course teaching abilities, teachers in higher vocational colleges can better adapt to this change, incorporating the latest technological achievements and educational concepts into teaching, and cultivating more high-quality skilled talents with innovative spirits and practical abilities to provide a strong talent guarantee for socioeconomic development [5]. By utilizing information technology and online teaching methods, teachers in higher vocational colleges can break the temporal and spatial constraints of traditional teaching, realize the sharing and optimal allocation of teaching resources, and improve the flexibility and pertinence of teaching.

3. Current problems faced by teachers in higher vocational colleges in terms of information technology application and online course teaching

3.1. Misconceptions regarding information technology application

Among current higher vocational teachers, there exist significant misconceptions regarding the application of

information technology, mainly manifesting as either excessive dependence or neglect of information technology. On the one hand, some teachers overly exaggerate the role of information technology in online course teaching, believing that simply using information technology can improve teaching quality and effectiveness. This misconception leads these teachers to excessively rely on information technology means, such as overusing multimedia resources, animations, and videos, while neglecting the depth and breadth of teaching content, as well as students' actual needs and learning characteristics. This over-reliance on information technology not only may distract students' attention, affecting their grasp and understanding of key content, but may also make teaching become mechanized and programmed, lacking flexibility and innovation [6]. On the other hand, some teachers hold a conservative attitude towards information technology, believing that traditional teaching methods are more reliable and effective, thereby neglecting the potential value of information technology in online course teaching. These teachers may have certain resistances due to factors such as age, technical background, or teaching experience, and a lack of enthusiasm for active learning and application of information technology. They may consider information technology as a patent of the young and believe they cannot master or apply these new technologies, thereby missing out on the conveniences and advantages brought by information technology to teaching.

3.2. Insufficient information technology application abilities

Firstly, some teachers in higher vocational colleges have limited mastery of information technology. They may only stay at the basic operation level, such as using office software to create simple PPTs, browse and download teaching resources, etc. [7] They often feel powerless when it comes to more advanced information technology applications, such as big data analysis, efficient utilization of online collaboration platforms, and the implementation of virtual simulation technology. This limitation at the technical level restricts teachers' in-depth exploration and extensive application of information technology in online course teaching, making teaching content and form relatively monotonous and difficult to stimulate students' learning interest and enthusiasm.

3.3. Lack of ability to integrate and utilize online teaching resources

In terms of resource screening, some teachers cannot identify high-quality online teaching resources efficiently and accurately. Facing the massive amount of online resources, they often have difficulty quickly screening out high-quality resources that are closely related to the course content, in line with the teaching objectives and the needs of students. This not only leads to the uneven quality of teaching resources but also may mislead students due to improper use, affecting the learning effect [8]. Even if some teachers have screened out appropriate resources, they seem powerless when integrating these resources. They may be unable to effectively integrate multiple resources to form a teaching system with a clear logic and coherent content. The deficiency in resource integration makes the teaching content scattered and disorderly, and it is difficult to form a systematic and coherent knowledge system, which is not conducive to students' understanding and mastery of knowledge.

4. Exploration of the integration path for information technology application and online course teaching abilities of teachers in higher vocational colleges

4.1. Transforming teaching philosophy to adapt to the demands of informatized teaching

With the rapid development of information technology, the field of education is undergoing unprecedented changes. The traditional teaching concept that centers on teachers and mainly focuses on knowledge infusion has

been difficult to meet the needs of the current society. Information-based teaching, with its characteristics such as interactivity, personalization and rich resources, provides a broad space for the innovation of teaching concepts.

To adapt to the demands of informatized teaching, the teaching philosophy must shift from being teacher-centered to student-centered. This means teachers need to pay more attention to individual differences and learning needs of students, providing them with more diverse learning resources and paths through information technology means. At the same time, teachers also need to actively guide students to explore independently, engage in cooperative learning, and innovative practices, cultivating their information literacy and lifelong learning abilities [9].

Furthermore, informatized teaching requires teachers to possess high levels of information technology literacy. Teachers need to proficiently master the use of various teaching software and platforms, and be able to optimize instructional design, implement teaching evaluations, and engage in teaching reflections using information technology means. This requires teachers to continually update their knowledge and skills, actively participate in various information technology training and exchange activities, and continuously enhance their informatized teaching abilities [10].

4.2. Enhancing information technology application abilities to achieve deep integration of technology and teaching

Firstly, teachers need to master the basic knowledge and skills of modern information technology, and understand the application methods and advantages of information technology in teaching. This includes becoming familiar with the use of various teaching software and platforms, such as multimedia teaching environments, online teaching platforms, etc., and being able to reasonably utilize software and digital resources to optimize classroom teaching. Through the application of information technology, teachers can enrich teaching content and forms, improve the fun and interactivity of teaching, thereby stimulating students' learning interest and enthusiasm.

Secondly, teachers need to achieve deep integration of technology and teaching. This is not just about making it easier for teachers to "teach," but also about making it easier for students to "learn" [11]. In the process of teaching, teachers should view technology as a tool rather than an end, focusing on the integration of technology into the entire learning process. For example, teachers can use online platforms to communicate and interact with students, utilize multimedia resources to enrich teaching content, or use data analysis to understand students' learning situations and design personalized instructional content. At the same time, teachers can also guide students to use information technology for independent learning, cooperative learning, and inquiry-based learning, cultivating their information literacy and innovative abilities.

In the process of deep integration, teachers also need to pay attention to student feedback and participation. By collecting opinions and suggestions from students, teachers can understand the application effects of technology in teaching and make corresponding adjustments and improvements based on student needs. At the same time, teachers can also encourage students to actively participate in the application process of technology in teaching, making them users and creators of technology, thereby further enhancing their information technology application abilities and innovative abilities [12].

4.3. Optimizing online teaching processes to improve teacher-student interaction and communication efficiency

Improving teacher-student interaction and communication efficiency is the key to ensuring the quality and effectiveness of online teaching. In the online teaching environment, the spatial distance between teachers and

students is widened, and the immediate feedback and deep interaction in traditional face-to-face teaching face challenges. Therefore, teachers must carefully design online teaching processes and fully utilize information technology means to enhance teacher-student interaction and communication.

During online live classes, teachers can encourage student participation by asking questions, conducting polls, and organizing group discussions, promptly obtaining feedback from students, and adjusting the pace and content of teaching [13]. The real-time interaction functions of the platform, such as barrage and chat rooms, can be utilized to provide students with opportunities to express their opinions instantly, enhancing classroom activity. Additionally, regular online Q&A sessions can be set up to address specific issues encountered by students during their learning, promoting the absorption and deepening of knowledge.

After class, teachers can use the online teaching platform's homework submission and online testing functions to collect students' learning outcomes and provide timely feedback and evaluations. At the same time, students are encouraged to communicate with teachers after class through email, forums, or private messages, sharing learning experiences, asking questions, or providing suggestions. [14]Teachers need to regularly review and respond to student feedback, continuously optimizing teaching content and methods, forming a good teacher-student interaction cycle. A class WeChat group or QQ group can also be established as an auxiliary channel for daily communication, quickly sharing learning materials, notifications, and reminders, while facilitating peer-to-peer exchanges among students. The use of big data and artificial intelligence technology to analyze students' learning behavior data can not only provide teachers with personalized teaching suggestions but also recommend personalized learning resources for students, further enhancing the learning experience [15].

5. Conclusion

In summary, with the rapid development of information technology in China, the information technology application and online course teaching abilities of teachers in higher vocational colleges have become crucial factors affecting the effectiveness of informationization reform in vocational education. To this end, teachers need to actively adjust their mindset, correctly view the opportunities and challenges brought by information technology to teaching work, and continuously enhance their information technology application abilities through ongoing learning and practice. They should promote the deep integration of digital technology and teaching, providing students with richer and more diverse learning experiences. At the same time, this also provides a strong talent guarantee for social and economic development.

Funding

2023 Teaching Reform Research Project of Zhenjiang College, "Research on the Integration of Information Technology Application and Online Teaching Ability of Courses" (Project No.: 2023YB34)

Disclosure statement

The author declares no conflict of interest.

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