"Three Teachings" Reform in the Era of "Internet Plus": Challenges and Opportunities

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Abstract: The advancement of the "Three Teachings" reform has further promoted the quality development of vocational education. In the context of "Internet Plus," the education sector has encountered significant opportunities as well as challenges. Resolving the difficulties in educational reform, seizing developmental opportunities, and advancing the "Three Teachings" reform have become important missions for higher education professionals. This paper analyzes the impact of "Internet Plus" education on the "Three Teachings" reform from the aspects of teachers, teaching materials, and teaching methods, explores the existing problems in the "Three Teachings" reform in the current "Internet Plus" context, and proposes solutions in five areas: curriculum system construction, instructional design, textbook compilation, teaching resource development, and teacher training.

Keywords: Internet Plus; "Three Teachings" Reform; Information Technology Courses; Instructional Design

1. Introduction

In 2019, the State Council issued the "National Vocational Education Reform Implementation Plan" (State Issue [2019] No. 4), sparking a wave of "Three Teachings" reform. The "Three Teachings" reform refers to changes in teachers, teaching methods, and materials. This reform permeates the entire process of higher vocational colleges, aiming to comprehensively enhance the quality of talent cultivation through innovative changes. In implementing the "Three Teachings" reform, higher vocational institutions have leveraged the momentum of "Internet Plus," strengthening the informatization of the reform. In recent years, information technology courses have continuously integrated actual projects and engineering processes into the classroom, training students' abilities through a combination of learning and practice. However, under the impact of "Internet Plus" online education, traditional teaching methods have revealed many issues in the educational process.[1-2]

From the perspective of teachers, the "Internet Plus" teaching model requires educators to quickly master online teaching skills and familiarize themselves with virtual learning platforms to keep up with educational trends and enhance the quality of blended learning approaches. Teachers need to continually refresh their educational philosophies and methodologies, merging traditional lecture-based teaching with interactive online learning, to better meet students' learning needs.[3-5]

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Viewed from the standpoint of teaching materials, traditional textbooks lack comprehensive content planning and systematic design reflective of vocational education's unique characteristics. The knowledge and practical examples within these resources fail to keep up with market job competency demands and do not reflect authentic procedural practices. Textbooks are often superficial in scope and depth and lack supporting information technology resources and online course design. [6]"Internet Plus" education offers more online resources and opportunities for customized materials, but higher vocational colleges need to pay more attention to the updating and improvement of textbooks to adapt to advancements in the field of information technology.

Regarding teaching methods, current information technology course instruction also experiences several issues, particularly prominent in the "Internet Plus" era. Traditional teaching methods are somewhat monolithic, unable to satisfy students' needs for hands-on operation and project experience. [7-8]Instructional strategies also need to better integrate actual projects and engineering processes, emphasizing practice and project execution, to cultivate information technology professionals with comprehensive qualities and practical skills.[9-10]

2. The Role of "Internet Plus" Education in the "Three Teachings" Reform

"Internet Plus" education plays a crucial role in the current educational system, particularly in exerting a profound influence on the "Three Teachings" reform. It has brought disruptive changes to the realm of education, offering teachers more tools and resources, enhancing the quality of educational materials, and fostering innovative teaching methods.

Firstly, "Internet Plus" education supplies a wealth of teaching resources that contribute to the improvement of textbook quality. Traditional materials might not meet the demands of the field of information technology due to their outdated nature and limitations. In contrast, "Internet Plus" education can provide more up-to-date and diverse educational resources. This helps enrich textbook content, including the latest case studies, practical technical demonstrations, and interactive learning materials, thereby enhancing students' learning experiences and practical skills.[11-13]

Secondly, "Internet Plus" education propels the innovation of teaching methods. Traditional instructional methods can be rigid, while "Internet Plus" introduces more flexible and varied forms of teaching, such as online interactive classes, virtual laboratories, and social learning platforms. These assist teachers in better accommodating the needs of diverse students, increasing the appeal and effectiveness of their instruction.

Thirdly, "Internet Plus" education also presents more support and training resources for teachers. Educators are at the heart of the "Three Teachings" reform, requiring continual enhancement of their educational proficiency and information technology skills. "Internet Plus" education offers online training programs, professional social networks, and platforms for sharing educational resources, helping teachers better adapt to the demands within the information technology domain and elevate their educational quality.[14,15]

In summary, "Internet Plus" education holds an irreplaceable role in the "Three Teachings" reform. It provides updated educational materials, innovative teaching methodologies,

professional development opportunities for teachers, and a global learning platform. These contribute to enhancing the educational quality in information technology specializations, nurturing talents with comprehensive qualities and innovative capabilities. This approach better meets the demands of the information technology sector, fosters alignment between educational systems and the industry, and contributes to the holistic development of the field of information technology.

3. Issues and Solutions in the "Three Teachings" Reform under the "Internet Plus" Context

3.1 Construction of Information Technology Curriculum System in the "Internet Plus" Era

In the development of talent training programs and the formulation of curriculum standards for information technology courses, the knowledge taught tends to lag, as the field of information technology evolves relatively quickly. The traditional education system has certain deficiencies in integrating the latest technologies, tools, methods, and best practices, failing to fully meet the dynamic development needs of companies. Currently, the demand for talents in the information technology field is growing, but there is a subsequent issue of talent scarcity. How to maintain the competitiveness of company employees has become an urgent problem for enterprises to solve. Higher vocational "Internet Plus" education can effectively bridge this gap by incorporating real-time, up-to-date information technology into the curriculum, effectively implementing "learning by doing" and "learning through practice," adhering to the unity of knowledge and action, ensuring students keep pace with corporate development, enhance their professional competitiveness, and address the mismatch of talent in companies. Simultaneously, by utilizing technologies like cloud computing, big data analysis, and artificial intelligence, the latest research findings and cutting-edge technologies generated by "Internet Plus" education are applied in the teaching process.

3.2 Instructional Design for Interdisciplinary Information Technology in the "Internet Plus" Context

A prominent issue in the current information technology curriculum is the frequent overlooking of the interdisciplinary nature of the field. Information technology is no longer an isolated discipline but a complex field intersecting with several others, such as mathematics, engineering, and design. However, some courses overly emphasize technical details, neglecting these interdisciplinary demands, resulting in students' foundational knowledge and skills being less comprehensive and poorly suited for multidisciplinary challenges. Consequently, traditional teaching methods fall short of meeting the needs of contemporary information technology course instruction. With the integration of "Internet Plus" education, we can further optimize the interdisciplinary teaching model for information technology courses. By introducing online interdisciplinary courses, establishing virtual interdisciplinary projects, providing online laboratories and resource libraries, and creating interdisciplinary social platforms, students will be able to learn and collaborate across disciplines more flexibly. This comprehensive approach to utilizing internet resources will help cultivate information technology professionals with well-rounded qualities and multidisciplinary skills, preparing them to better meet

interdisciplinary challenges in the field and for future career development. This teaching model, integrating "Internet Plus" education, will better satisfy diverse student needs, ensuring alignment between the education system and industry, offering students more competitive knowledge and skills, enhancing their comprehensive qualities and interdisciplinary capabilities, and contributing to the overall development of the information technology field. Simultaneously, teachers should adopt diversified teaching methods in course design, such as project-based teaching, inquiry-based learning, and collaborative learning, to help students better grasp the frontier knowledge and skills in information technology. By actively collaborating with enterprises and jointly participating in the research and development of "Internet Plus" products, students can gain firsthand experience in the development process, enhancing their practical operational abilities and innovation awareness.

3.3 Compilation of Modular Textbooks in the "Internet Plus" Context

Currently, the quality of textbooks in the field of information technology varies greatly, complicating instructors' selection process. Known for its rapid growth and constant evolution, the field requires textbooks to stay abreast of the latest technological trends and case studies. Students' satisfaction with current traditional print textbooks has been decreasing yearly, mainly due to these materials' lack of practicality and innovation. Therefore, constructing a high-quality textbook has become a focal point in course development. Modular textbooks offer a more flexible, personalized, interactive, and sustainable learning experience, aligning with modern educational needs. They represent a significant innovation in educational technology, promising to enhance students' learning outcomes and experiences. They allow for immediate updates and customization to accommodate the ever-evolving field of information technology. Throughout the development of modular textbooks, "Internet Plus" education provides practical application cases for these materials. It offers online resources and tools, ensuring textbook content is updated synchronously with the latest trends in the field. Educators can access the most recent case studies, technical documentation, and practical resources through the "Internet Plus" education platform, adding or altering textbook content based on the latest advancements and student needs. This capability for instantaneous updates ensures that students acquire the most recent knowledge and skills, better fulfilling their demands for practicality and novelty, addressing the issues of outdated content and insufficient quality in information technology textbooks, and meeting actual corporate requirements.

3.4 Development of Reusable Teaching Resources in the "Internet Plus" Context

Management of teaching resources for higher vocational information technology courses faces systematic and meticulous challenges, primarily manifested in the difficulty of accumulating reusable experimental resources. Although the rapid development in the field of information technology necessitates continual innovation and renewal of course content, current resource management methods have failed to keep pace. Many teaching resources in vocational institutions exist in a scattered format, lacking integration and standardization. This situation often makes it difficult for teachers to locate and share high-quality experimental resources, and students cannot fully benefit from reusable materials and experimental designs. Therefore, higher vocational information technology courses need better planning and management of educational resources. Establishing reusable, guided instructional experimental resources and "Internet Plus" based innovative laboratories can break through the limitations traditional

classrooms impose on cultivating practical skills, guiding students toward innovation beyond the basic classroom content.

3.5 Constructing a Continuing Education and Training System for Teachers in the "Internet Plus" Context

In higher vocational institutions, some instructors' educational level and information technology competencies are relatively limited compared to their counterparts in undergraduate institutions, a deficiency evident in several aspects. Firstly, certain educators have weaker subject knowledge and educational backgrounds, failing to update their knowledge systems in time, leading to outdated course content that cannot meet the demands of rapidly evolving professional fields. Secondly, some lack proficiency in information technology, with a limited understanding of modern educational technology and online teaching tools, impeding their ability to fully leverage these resources to enhance teaching quality and innovation. This gap can lead to inconsistent quality in online courses, poor interactivity, and a compromised student learning experience. Lastly, a lack of enthusiasm for educational innovation and adoption of new teaching methodologies exists among some teachers. Even in information technology-related courses, some educators remain accustomed to traditional teaching methods, skeptical about introducing new educational approaches, consequently hindering students' comprehensive development in the IT sphere. To address these shortcomings in teachers' educational levels and IT capabilities, an urgent need arises for intensive training programs for key teachers in higher vocational institutions. "Internet Plus" plays a crucial role in this context. By establishing an online continuing education and training platform for teachers, rich educational resources, including courses, textbooks, video tutorials, and online assessments, become accessible anytime, anywhere, mitigating issues of self-neglect due to heavy teaching workloads. Additionally, virtual classrooms and webinars utilizing video conferencing and online environments enable educators to overcome geographical barriers, engaging in real-time interactive workshops, thereby enhancing the interactivity of training. Simultaneously, to cater to various teachers' needs, personalized learning paths can be developed, allowing instructors to select courses and training materials based on their interests and requirements. Implementing an assessment and certification system ensures the quality and effectiveness of online training. Furthermore, promoting knowledge sharing and collaboration through social media and online communities, and establishing cooperative ecosystems with renowned domestic tech companies, pave new avenues for continuing teacher education.

4. Conclusion

In the context of the rapid development of the internet, the "three teachings" reform in the educational field faces both opportunities and challenges. This paper aims to explore the current situation faced by higher vocational colleges in "Internet Plus" education, analyzing problems arising in teaching reform, and, in conjunction with "Internet Plus" practices, summarizes feasible solutions in five aspects: curriculum system construction, teaching design, textbook compilation, teaching resource development, and teacher training. This provides opportunities for reform in teaching materials, methodologies, and educators' instructional approaches. In future reforms, teachers should focus on enhancing the user-friendliness of online teaching platforms, providing informational teaching training for instructors, and paying attention to

students' evaluations of blended online and traditional teaching models. Through active practice and timely reflection, we can better utilize "Internet Plus" teaching to cultivate high-quality, highly skilled talents in line with the actual demands of enterprises.

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