

Research on Path of Promoting the Reform of "Three Education" in Electronic Information Major of Higher Vocational Colleges in New Era

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Abstract: The Ministry of Education clearly proposed the "three education reform" (the reform of teachers, teaching materials, and teaching methods) of vocational colleges in 2019. It focused on enhancing the attractiveness of vocational education and the ability to cultivate talents. In recent years, with the digital transformation of the industry, the integration of "three education" has become a critical path to promote the high-quality development of vocational education. Under the guidance of the new market demands in the new era, the reform of teachers is the leader, the reform of teaching materials is the carrier, and the reform of teaching methods is the medium. Under the premise of meeting the trend of digital and intelligent development of the industry, it can cultivate more comprehensive talents for the society. This paper takes higher vocational colleges as the research object and electronic information major as the research entry point, it analyzes the current situation of the reform of the three education, and propose measures and methods to promote the reform of the three education under the new background in the new era. It can provide support for cultivating comprehensive and professional talents to meet the position needs in the new era.

Keywords: Three Education Reform; Digital Transformation; Electronic Information.

1. Introduction

In 2019, The State Council issued the "Implementation of the National Vocational Education Reform" plan, which put forward more scientific and standardized requirements for the education work of vocational colleges. Henceforth, vocational colleges have gradually increased their attention to the reform of the "three education" (teachers, teaching materials, teaching methods). In the meantime, the field of education has also continuously adjusted educational objectives and its syllabuses based on practical conditions to provide theoretical references for the development of vocational education [1-3]. For example, the Opinions of the Ministry of Education and Finance on Implementing the Plan for the Construction of high-level vocational Schools and Majors with Chinese Characteristics released in 2020 proposed to accelerate the innovative development of teachers' teaching teams and bring about the reform of "teachers, teaching materials and teaching methods". With the development of the new era and the transition of China's economy to the stage of high-quality development, the supplies and demands of high-quality and high-caliber skilled talents increase[4-6]. Moreover, the enrollment expansion of higher vocational colleges puts forward higher requirements for the development of modern vocational education and the reform of "three education".

The reform of the three education is proposed under the background of the national education reform and highlighting the characteristics of the types of vocational education. Its direction is to accelerate the integration of production and education, school and enterprise dual education[8-10]. Vocational education is another kind of education that distinguishes different types of general education and has the equal status. It pays more attention to cultivating vocational job skills and front-line practical ability[11-13]. Its teaching must be closely combined with practice. So it requires

vocational colleges to deepen the integration of production and education and strengthen school-enterprise cooperation. Therefore, the "Three education reform" is a comprehensive reform under new ideas and new technologies, rather than a single reform in a specific aspect. The value orientation of the "Three education reform" lies in the classroom revolution of vocational education[14-16]. The reform of teachers, teaching materials and teaching methods respectively correspond to the three core issues of vocational education: "who will teach", "what to teach" and "how to teach", and finally settle in the classroom.

2. Present Situation of Three Education in Higher Vocational Colleges

2.1. Teachers

As the leading force of the three education reform, teachers are the main factor to improve talent cultivation. Teachers in higher vocational colleges should have solid professional knowledge and outstanding practical guidance ability. Moreover, they need to have strong information technology application ability in the new era of digital transformation. In the current reform of the three education, the problems of teachers are as follows: 1. The composition of teachers is relatively too simple. The majority of teachers are graduates from colleges and universities focusing on theoretical teaching, and most of them are fresh graduates and most of them do not have practical experience in enterprises. This phenomenon leads to a lack of understanding of actual manufacturing practices and incomplete grasp of the application of digital technology. In the course of teaching, they cannot provide experience for students. At the same time, there is a problem of emphasizing theory over practical training in the teaching mode. This is extremely unfavorable to cultivating students' digital technology literacy. 2. The

professional ability of teachers in vocational colleges to serve enterprises is not strong, and they lack scientific and technological innovation and practical ability. Moreover, the existing assessment mechanism design for vocational colleges is harmful to teachers' active scientific and technological innovation, and the campus has not formed a strong atmosphere of scientific research and innovation. 3. Teachers lack understanding and mastery of new materials, new processes, new equipment and new technologies brought about by industrial digital transformation, and the overall professional level of the teachers team cannot meet the development needs of artificial intelligence [10,13].

2.2. Teaching Materials

Teaching materials are the driving force carrier, the foundation of morality and education, and the key factor to educating people for the country, the Party and high-quality digital technical talents. With the digital transformation, the compilation of teaching materials is an important entry point for the high-quality development of higher vocational colleges. The initiative to integrate new knowledge, new technology and new process into teaching materials is the meaning of the topic in the reform of teaching materials construction. The existing problems of teaching materials in higher vocational colleges are as follows: 1. The design lacks professional characteristics, and there is a certain gap between the design and the job demands; 2. The updating speed of teaching materials cannot keep up with the iteration cycle of new technologies and new processes, and it is insufficient in both quality and quantity; 3. There is a deviation between the content of teaching materials and the actual development situation which pay more attention to the theory, therefore it is difficult to train practical talents [9,10,11].

2.3. Teaching Methods

Teaching method is the method, procedure and implementation way for teachers to impart the curriculum content to students. It is a high degree of integration and organic unity of teachers' teaching method and students' learning method, it is an important foothold of the three education reform. At present, the existing problems of teaching methods in higher vocational colleges are as follows: 1. The teaching classroom mode is relatively simple, the theory and practice teaching are in a state of separation, and the learning of professional knowledge and the promotion of practice teaching are not well connected, which leads to the teaching effect greatly reduced; 2. The information means adopted in teaching methods are relatively simple, which lack deep integration with digital technology, lack of development of digital teaching resources, and lack of application ability of digital technology. Compared with traditional classrooms, there is no substantial change, so students cannot really acquire technical skills highly relevant to their future employment industry from teaching [10].

3. Measures and Methods to Promote the Reform of Three Education in New Era

3.1. "Teacher" Reform Measures

1. The composition and source of the teachers should be diversified and the scope of teachers' recruitment should be expanded. The structure of the teaching staff should also be improved. The recruitment of the teachers should not only

consider the fresh graduates from colleges and universities, but also introduce experts, skilled craftsmen and high-level skilled talents from enterprises through the establishment of an appropriate talent introduction mechanism. Therefore they can also have the opportunity to participate in talent training, so as to strengthen the connection between schools and enterprises and realize the dual education of schools and enterprises. The entry qualifications and standards of teachers in higher vocational colleges could be further improve. So the enterprise background and the skill level of teachers should be regarded as important entry criteria [11].

2. Enrich teachers' training channels. Corresponding training plans should be formulated according to teachers in different periods, including teacher training plans at all levels. For examples, teachers' practice plans for entering enterprises, cooperation plans with industry and enterprise experts, educational upgrading, overseas study visits, etc.. These measurements can help teachers to promote the professional level and ability in multiple ways and encourage teachers to use digital platforms to exchange their own personalized curriculum resources. They can also realize self-reflection and improvement of teaching through sharing.

3. Enrich the dimensions of teachers' ability improvement. The improvement of teachers' ability in higher vocational colleges includes teaching ability, scientific research ability and social service ability. It is necessary to enhance the professional knowledge and skills of teachers in various aspects. Their scientific and technological research and development ability should also be improved, as well as research team cooperation ability and school-enterprise cooperation ability, etc. It is necessary to establish the professional growth ability of self-development and self-renewal, strengthen the sense of responsibility to serve the society, consolidate the professional theoretical foundation, improve the experience and ability of transforming knowledge into practical skills, and help improve the social service ability [10].

3.2. "Teaching Materials" Reform Measures

Teaching materials are the carriers of the three education reform enabling high-quality development of higher vocational colleges. With the penetration and influence of digital technology in all professionals, new technologies and new processes are emerging in an endless stream. It is necessary to continue to deepen the reform of professional teachings, develop multi-form and high-quality teaching materials, so that they can cultivate high-quality technical talents and promote the high-quality development of higher vocational education. The "Vocational education 20" proposed to develop school-enterprise dual cooperation textbooks, advocated new loose-leaf and manual textbooks, and revised once every two years, which put forward a clear direction for textbook reform. In addition, the reform of teaching materials also needs to do the followings: 1. Pay attention to the participation of enterprises. Vocational colleges need to cultivate highly skilled talents for local enterprises, which cannot lack the participation of enterprises. In the process of school-enterprise cooperation in developing teaching materials, the integration of production and education is further strengthened. In addition, new technologies, new methods and new processes originates from enterprises can be incorporated into teaching materials in a suitable time to ensure that the content of teaching materials keeps pace with the Times. 2. Strengthen the content

of the textbook, pay more attentions to skills and make them to be job-oriented and task-driven, so that students can establish a correct understanding of the industry from the textbook; 3. Students should be the main body to develop distinctive, innovative and personalized teaching materials [11,12].

3.3. "Teaching Methods" Reform Measures

Teaching method is the cornerstone of the reform of three education. Higher vocational colleges should break through the traditional teacher-centered teaching mode and transform it into a student-centered classroom mode with students' skill acquisition as the core [9,13,16]. The main measures can be considered from the following: 1. Take the job demand as the starting point. It requires the participation of part-time teachers from enterprises. It can take actual job demand and competency as a direction and give full play to the strength of school-enterprise cooperation. It can also jointly set up a teachers' team and design work tasks, as well as organize teaching based on the actual work process and job responsibilities; 2. Project teaching. In the teaching design, the proportion of theory and practice teaching in the teaching system should be adjusted scientifically. Students' ability should be trained through projects in important tasks of enterprises to fully combine theory and practice. Professional quality training should be strengthened to meet the needs of students' self-value realization and sustainable development. 3. Diversified teaching evaluation. Teaching evaluation is the key link of training talents in higher vocational colleges, evaluating the classroom performance and learning results of teachers and students. Teacher's teaching and students' learning can be roundly evaluated from the teaching design, content, mode, classroom process, atmosphere, classroom effect, students' status; 4. Highlight the importance of curriculum ideology and politics. Teachers should not only pay attention to students' knowledge and skills, but also work hard on the cultivation of professional quality and comprehensive quality. In the teaching process, it is necessary to combine the characteristics of the course, fully encourage students to carry out independent innovation, science and technology to serve the country and stimulate students' sense of national mission. The integration of ideological and political elements into the classroom is conducive to shaping students' correct professional values. It is significant to all around improve students' comprehensive quality and long-term career development

4. Conclusion

This paper research the current situation and existing problems of the three education reform in higher vocational colleges. It selected the electronic information major as the research entry point. Based on the current situation of the three education reform, the paper put forward feasible measures and methods to promote and optimize the three education reform under the background of digitization in the new era, which provides an effective reference and basis for higher vocational colleges to train comprehensive and professional talents to meet the post needs of enterprises in the new era.

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