Research on teaching reform of electronic information specialty courses in Higher Vocational Colleges under the background of new engineering

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Abstract: the new economic era represented by new technologies, new formats and new models has arrived, and social development urgently needs a large number of compound and highly skilled talents. In this context, the new social economy also puts forward new requirements for vocational education. It points out that higher vocational colleges need to cultivate highly skilled compound talents around the new engineering in the development. The school can effectively improve the quality of talent training and deepen the reform of vocational education by building courses, building double qualified education teams, and teaching benchmarking job requirements. This paper explores the teaching reform of electronic information specialty courses in Higher Vocational Colleges under the background of new engineering, and puts forward corresponding views.

Key words: new engineering; Higher vocational electronic information specialty; Teaching reform; research

1. Connotation of new engineering

In recent years, in order to continuously deepen the reform of vocational education, the Ministry of education of China has issued the notice on carrying out the research and practice of new engineering, which summarizes the main research contents of new engineering as: the new educational concept of engineering education courses, the new specialties of different disciplines, the new talent training mode, and the new quality of education and teaching. Although different scholars in the society have different understandings of the new engineering at this stage, it can be summarized as follows: some educational scholars believe that the connotation of the new engineering is to cultivate talents of the new era with morality as the core, to cultivate high-quality skilled talents and to meet the needs of social development as the goal, to coordinate and share as the main way, and to meet the needs of social development, Ensure that the comprehensive ability of talents meets the development needs of the times.

In addition, some scholars have proposed that the new engineering is a new form of engineering, which injects new connotation into the development of engineering to a certain extent. It is an engineering form that adapts to the new economic development, in which the reconstruction and opening of knowledge system are the main direction of new engineering education. With the continuous development of science and technology, network technologyNew industries and new manufacturing modes shaped by artificial intelligence and big data will replace the traditional manufacturing mode and the production organization mode attached to this mode, making the manufacturing industry rapidly change to intelligent manufacturing mode in the future.

2. The current problems in the teaching of electronic information specialty in Higher Vocational Colleges

(1) the curriculum system is not perfect, and the teaching method of teachers is single

First, many students lack a comprehensive understanding of the professional curriculum system, and many professional courses are also poorly connected. This situation leads to students' insufficient mastery of professional courses and difficulty in understanding professional skills. For example, the content related to digital information processing is highly theoretical, and the content is relatively abstract, which makes it difficult for students to learn. Many students usually feel abstract concepts in the process of learning, do not understand the actual physical meaning corresponding to the theory, and are difficult to understand the basic theories and analysis methods, which makes it difficult for students to apply their knowledge to practice, The teaching effect is poor. Due to the limitations of previous teaching ideas, many teachers mainly use the knowledge explanation method to carry out teaching activities in teaching, that is, to explain knowledge directly in combination with the content of teaching materials. This method is relatively simple, which is not enough to fully mobilize students' interest in learning, and also can not achieve the development of students' inquiry ability and innovation ability, It is difficult to ensure that teachers can achieve the talent training goal under the background of new engineering.

(2) Limited educational ability of Teachers

In order to continuously deepen the teaching reform of electronic information specialty, professional teachers need to deeply understand the connotation of new engineering, and can apply effective teaching methods to carry out effective teaching activities. However, at this stage, some professional teachers' educational ability is limited, and it is difficult to give full play to the application value of the new teaching method in teaching, which makes it difficult to achieve the goal of professional reform, and students' comprehensive ability is also out of touch with social development. In addition, many teachers' teaching evaluation methods are relatively backward, and they do not pay attention to students' learning process.

3. Teaching Reform Countermeasures of electronic information specialty courses in Higher Vocational Colleges under the background of new engineering

(1) Improve professional teachers' educational ability and build training base around the new engineering

First, the school should build a double qualified education team. In the development of higher vocational colleges, centering on the concept of school enterprise cooperation and the integration of competition and certificate courses, taking the improvement of teachers' engineering ability, teaching design ability and standardized teaching ability as the foothold, taking the reasonable structure of double teachers as the goal, and taking the distribution mechanism of professional hematemesis quality evaluation system as the driving force, we will build a team of high-quality teachers with strong teaching ability under the background of new engineering. First of all, in the process of development, the school needs to clarify the scope of improving teachers' educational ability, and formulate plans to improve teachers' educational ability under the background of new engineering, so as to fully guarantee the smooth development of subsequent teacher training activities. Secondly, the school should improve the teaching ability of teachers from multiple perspectives. On the one hand, the school needs to regularly carry out relevant teacher training activities in the process of development, so that teachers can master more teaching methods and know more practical teaching projects, so that teachers can have a new understanding of the new engineering, which can fully guarantee the smooth development of subsequent teaching activities. On the other hand, the school fully implements the school enterprise cooperation, selects local competitive electronic information enterprises with large investment for cooperation, realizes benchmarking and precise training, and provides intellectual support for teachers. Finally, further optimize the structure of teaching staff. Based on the principle of going out and coming in, higher vocational colleges regularly organize professional teachers to study in enterprises to make them understand the latest practical teaching projects and teaching contents, and then introduce them into teaching to realize the effective integration of professional teaching and industry; The school invites project managers and enterprise engineers to join the talent training process and implements the modern apprenticeship system.

Second, school enterprise cooperation, around the principle of integration of production and education to build a training base. The school actively introduced enterprise equipment and built a skills training platform, Both parties always insist"The construction idea of school enterprise co construction, resource sharing process co management, talent co education, and win-win cooperation is to introduce advanced competition technology and equipment from enterprises for the cultivation of new engineering talents, so as to build a training base similar to real production for students; for the connotation construction of the training base, both schools and enterprises need to further improve the practical teaching content system, practical teaching management system, and practical teaching evaluationPrice system, with the help of this way to ensure the benchmarking of practical teaching and professional posts and the accurate cultivation of students' technical skills, so as to fully guarantee the smooth development of follow-up teaching activities.

(2) Optimizing practical teaching system

Around the concept of engineering education, teachers further optimize the teaching content in the actual teaching, guide students to actively carry out innovative practice and exploration, so as to gradually build a progressive professional teaching system integrating teaching experiment, comprehensive design and innovative practice oriented by industrial demand, and fully integrate the new engineering concept. Classroom teaching activities should also be integrated into the first classroom of curriculum design and comprehensive practice, the second classroom of knowledge competition and scientific and technological innovation, and the third classroom of social investigation and practice. Specifically, the third classroom is mainly for teachers to design students' social practice projects and fully implement school enterprise cooperation; The second and third classes are the effective extension of the first class. Students' innovation and entrepreneurship practice in this process and the ranking obtained in the competition can be classified as skill credits into elective credits. In the whole teaching process, teachers need to mobilize students' interest in learning and cultivate their professional quality as the primary teaching task, and guide students to effectively integrate theory with practice; Effectively combine engineering projects and intellectual property protection in teaching to cultivate students' good professional quality; Teachers guide students to integrate knowledge resources, integrate with social business model, participate in challenging engineering practice, and promote its diversified and comprehensive development.

(3) Innovating teaching methods and fully integrating new engineering courses

The traditional teaching method is relatively single, which is difficult to meet the needs of students' diversified development. Therefore, teachers need to actively innovate teaching methods in teaching, and choose teaching methods that are conducive to students' active participation and overall development to carry out teaching activities. For example, teachers can rely on the online teaching platform built by the school to carry out teaching activities by using the teaching method of Online + offline teaching integration. For example, teachers can upload the syllabus, teaching cases, courseware, etc. to the class learning platform in the teaching of circuit analysis, EDA technology, communication principles and other contents, so that students can use the time after class to study independently; Teachers can arrange after-school homework on the online teaching platform, and actively communicate with students to understand their learning weaknesses. In offline teaching, teachers can use electronic whiteboards to carry out teaching activities, or combine teaching projects to let students practice through design schemes, implementation schemes, etc., so as to cultivate students' practical ability and innovation ability in this way.

At the same time, in classroom teaching, teachers also need to carry out teaching activities around the course of Ideological and political education. Quality education requires teachers to implement morality education, pay attention to students' Ideological and moral cultivation education, and guide students to gradually grow into electronic information talents of the new era with high quality, which is conducive to social development. For example, when explaining the EDA technology process, teachers can compare the technical capabilities of domestic

EDA manufacturers with those of large foreign manufacturers in classroom teaching, so that students can understand the impact of "choke technology" on domestic IT giants and even international relations. In this way, students can understand the current research situation in China, stimulate students' internal patriotism, and guide students to clarify their social responsibilities, Help students develop multi-element nutrition.

(4) Strengthen the supervision of teachers' teaching process around the new engineering

On the whole, the school needs to further strengthen the management of the teaching process in the development, effectively improve the proportion of the process score in the total curriculum score, and implement the new engineering into each stage of professional teaching. In order to further strengthen the supervision and guidance of teachers' teaching process, the school can break the final design report system and further divide the practice process reasonably. Teachers supervise and answer students' feedback in real time in the process of team building, course proposition, design demonstration, design presentation, and report writing, so as to achieve strict control and gradual progress. For the improvement of teachers' teaching, relevant supervisors should regularly enter the teachers' classroom to understand the current situation of teachers' teaching, provide guidance for teachers' teaching reform, and help teachers effectively achieve the teaching reform goals under the new engineering; Managers should also regularly retrieve teachers' teaching feedback, collect teachers' teaching feedback, and combine these contents to optimize the curriculum teaching system and practical teaching scheme, so as to provide strong support for teachers.

(5) Reconstruction of evaluation system based on new engineering

First, in the process of students' practice, excellent talents from enterprises, project engineers and teachers will jointly evaluate students' theoretical knowledge application, phased results of practice, final results of practice and other contents, so that students can timely find their own weaknesses in learning, which accounts for 40% of the total score of students. Secondly, students' internship performance evaluation. The evaluation subject of this section is professional teachers, who evaluate students' internship performance, task completion, professional quality and other content, which accounts for 40% of the total score. Third, students' professional quality evaluation. Teachers and enterprise staff evaluate students according to the students' project completion progress, task completion and the final total score, which accounts for 20% of the total score. In this way, we can comprehensively strengthen the participation and role of enterprises in student evaluation, so as to further improve the education effect and build the teaching system in the new era. In addition, combined with the evaluation and feedback of students, teachers of electronic information specialty in higher vocational colleges also need to adjust the teaching direction and teaching content in time, which can fully guarantee the smooth development of follow-up teaching activities and avoid the deviation of follow-up teaching activities.

Conclusion:

In 2018, China's Ministry of Education released the plan of action for AI innovation in Colleges and universities, which proposed that higher vocational colleges need to promote the construction of new engineering in an all-round way in the development. At the same time, at this stage, China's emerging industries such as artificial intelligence and 5g technology are rising rapidly, and the development of related industries is in urgent need of a large number of electronic information talents. In order to further meet the needs of social development and improve the quality of talent training, China's higher vocational colleges need to implement effective talent training measures around the new engineering courses according to the teaching reform of electronic information professional courses, The school needs to further implement the integration of industry and education, strengthen school enterprise cooperation, and start to build a double qualified education team, while the teachers of electronic information courses need to explore a new teaching mode and further optimize the curriculum teaching system, so as to improve the current teaching situation, help students' diversified and comprehensive development, and effectively strengthen students' core competitiveness.

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Research on the practice of group inquiry teaching method based on the integration of production and education

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Abstract: The group inquiry teaching method based on the integration of production and education needs to follow: the principle of combining inquiry with teaching, the principle of combining group development with personal development, the principle of combining process supervision with stage assessment, and the principle of combining imitation with innovation. The four principles can effectively avoid deification and generalization of the group inquiry teaching method, Based on the four principles, the group inquiry teaching method is divided into five stages: creating scenes, providing resources, independent inquiry, teachers' teaching, assessment and evaluation. The practice research is carried out by using the studio public welfare project and teachers' agricultural assistance project. Through the comparison of the statistical data between the control group and the experimental group, it is proved that the group inquiry teaching method is helpful to improve the teaching quality in the practice teaching.

Key words: Integration of production and education; Group inquiry teaching method; Practical research

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1. Principles of group inquiry teaching method based on the integration of production and education

1.1 The principle of combining inquiry and teaching

Both teaching method and inquiry teaching method have their shortcomings. Teaching method needs to avoid the continuous indoctrination of the whole class, lack of inquiry, lack of feedback and lack of students' independent thinking. Inquiry teaching method needs to avoid students' constant inquiry, lack of teaching, lack of management, and lack of teachers' emphasis and demonstration on key and difficult points. Based on the integration of production and education, the group inquiry teaching method is characterized by practical teaching, which needs to follow the principle of combining inquiry and teaching, and handle the relationship between "release" and "receive". In the learning stage of new knowledge and new skills, teachers actively participate in teaching, and in the implementation stage of project tasks, group cooperation and students' independent exploration are the main methods.

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