My opinion on the teaching reform of computer courses under the certification of engineering education major

Yuanbo Shi
(Kunming City University, Kunming, Yunnan, 650106)

Abstract: with the deepening of higher education reform, computer professional teachers pay more and more attention to the improvement of students' professional level in the process of curriculum teaching. As the guidance of computer professional course teaching, engineering education professional certification mechanism can improve the overall quality of computer professional teaching and promote professional education and teaching reform. Therefore, computer professional teachers should comply with the development of teaching reform, adjust professional teaching under the guidance of engineering education professional certification, improve the teaching system, reform the teaching content, and promote the quality of computer professional teaching.

Key words: engineering education professional certification; Computer; Teaching; reform

At present, China has made a lot of reform and exploration in the practice of engineering education certification, and has made great progress. However, due to the fact that China's engineering education certification system is still in the stage of practice and exploration and lacks reform experience, in the practice of computer teaching in Colleges and universities, we should actively learn from the teaching experience of other colleges and universities, learn from the construction of its teaching system and teaching reform methods, and constantly improve the teaching of computer major in the process of exploration and practice.

1. Analysis of the connotation of engineering education professional certification

Engineering education certification is an evaluation system that needs to be output-oriented, reflects students' abilities in all aspects, and has certain operability. According to the evaluation results, teachers can adjust students' training programs and teaching methods. Engineering education professional certification refers to the certification of engineering education offered by professional certification institutions for higher education, which provides guarantee for relevant engineering and technical talents to enter the industry and carry out work. Engineering education is an important part of China's higher education, which can promote the formation of a comprehensive higher education engineering system, and has important practical significance. Engineering education professional certification is not only the quality assurance system of engineering education, but also the basis for the realization of international recognition of engineering education. It requires the setting of professional system, curriculum resources and teachers, and school running conditions in Colleges and universities. At the same time, the certification mechanism of engineering education is of great significance for building the engineering teaching quality guarantee of domestic higher education, promoting the reform of teaching materials and improving the teaching quality. In general, foreign higher education started earlier in the certification of engineering education, and has formed a relatively complete system and rich experience. Professional institutions and corresponding certification systems have also been developed.

2. Analysis of the current teaching situation of computer courses

2.1 The teaching system needs to be improved

In the current teaching of computer majors, there are some problems in the construction of the teaching system. The existing relevant teaching concepts are lagging behind and have not been able to form a teaching mechanism to meet the current educational needs. Therefore, in order to ensure the smooth development of higher education, colleges and universities should not only focus on the education and teaching at the research level and the teaching of theoretical knowledge, but also pay attention to the role of practical teaching and the cultivation of applied talents. In the past computer teaching in Colleges and universities, some colleges and universities were limited by traditional thinking, and the role of practical teaching could not be reflected. They still used the previous teaching system, and did not fully consider the social development of the region where the colleges and universities are located, the development status of colleges and universities and other issues, resulting in the lack of improvement of the professional system. At the same time, some colleges and universities have failed to reach the ideal level in the construction and reserve of teachers. The lack of professional teachers restricts the improvement of teaching quality and the development of teaching level in Colleges and universities. In addition, the configuration of the practice platform and the configuration of software and hardware equipment also need to be improved. In order to ensure the improvement of the teaching system of computer courses in Colleges and universities, it is necessary to clarify the factors that affect and restrict the development of teaching in Colleges and universities, analyze and discuss the existing problems, and promote the further improvement of the teaching system.

2.2 Teaching content needs reform

The teaching content of computer courses should emphasize practice, and use practice teaching to guide students to use the knowledge they have learned to innovate. At present, some colleges and universities still use the traditional teaching materials of computer teaching, some of which are out of line with the times, and some technologies are not suitable for the current teaching, which causes the lag of teaching content in computer teaching. In the teaching of computer specialty, the course teaching is mainly based on the demonstration or demonstration of teachers. The interaction between students and teachers is not strong, and the teaching content is not diversified enough, which leads to the decline of teaching effect and the inability to effectively improve the initiative and enthusiasm of students. Secondly, most of the teaching contents focus on the teaching of theoretical knowledge, and the curriculum arrangement in practical operation is less, and the balance of class hours is not ideal, which leads to students' difficulty in applying theoretical knowledge, lack of practical guidance and practical operation experience, and lack of cognition of theoretical knowledge, and stay at a relatively simple level. Teachers should reasonably arrange teaching activities, increase practical teaching hours, improve students' attention to practical learning, and cultivate applied talents with strong comprehensive ability.

3. Teaching reform strategy of computer courses under engineering education professional certification

3.1 Change the teaching concept and improve the curriculum system

With the change of the times and the development of technology, the computer specialty has gradually been paid attention to. The teaching of computer engineering courses has made great progress and development with the support of various policies and teaching resources, and has continuously provided backup force and support for the development of high-tech information technology, big data and intelligence in China. The graduates of computer major have gradually become popular talents, and the reform of computer major has also been carried out with the development of the times to expand the scale of education and teaching. Students majoring in computer science need to have certain technical ability, meet the actual needs of enterprises and society, promote the sharing of training objectives and teaching experience of engineering education, and improve students' comprehensive quality. Specifically, colleges and universities should first change their teaching ideas, timely learn new teaching ideas, and change teaching ideas. Teaching philosophy and teaching objectives are the guidance of teaching practice. Teachers need to clarify teaching objectives to ensure the smooth development of teaching. Under the background of engineering education cognition, the teaching objective of computer specialty is to cultivate professional talents who not only master computer professional knowledge, but also have the ability of computer design and development. The practice of computer specialty is strong. Teachers should recognize the importance of practical teaching in computer specialty, and fully refine and determine the teaching objectives of computer specialty courses according to the existing teaching resources and the positioning of colleges and universities. Secondly, professional teachers should clarify the student-centered teaching concept, highlight the dominant position of students in the process of classroom teaching design, and use students' actual operation of water balance to improve the teaching effect of computer engineering technology. Teachers should abandon the traditional teaching ideas, change teaching ideas, put theoretical knowledge teaching and practical teaching in the same important position, and cultivate applied technical talents with professional quality and practical operation ability as the goal, so as to cultivate excellent talents who meet the needs of enterprises and the current society . Moreover, in the construction of the curriculum system for computer majors, colleges and universities should arrange around students' mastery of computer knowledge, maximize the application of learning resources, and promote the improvement of students' basic professional level. At the same time, colleges and universities should actively respond to the national strategic deployment of higher education, build modern industrial colleges, realize the digital transformation of computer majors, boost the construction of colleges and universities, serve the national strategic needs, March to the forefront of science and technology, and realize the high-quality development of social economy.

3.2 Innovating teaching mode and optimizing teaching efficiency

In the teaching of computer majors in Colleges and universities, teachers should pay attention to the innovation of education and teaching mode, reform the previous indoctrination teaching mode, change teaching ideas, and clarify teaching objectives. Teachers should innovate the teaching mode around improving students' application ability and engineering project processing ability. First of all, teachers should optimize the teaching content, reasonably arrange the various modules of teaching, optimize the overall teaching content, delete outdated teaching content and repeated curriculum knowledge points, and help students build a learning framework and knowledge structure as soon as possible to carry out teaching from shallow to deep. At the same time, teachers should adapt to the development of the new era, introduce teaching resources, apply teaching advantages, improve students' professional skills, and then cultivate excellent talents who meet the needs of enterprises and engineering education certification standards. Secondly, the practice of computer specialty is strong. In class, teachers only adopt the theoretical teaching and demonstration teaching mode, which can not make students effectively understand the computer principle and improve the computer professional skills. Therefore, teachers should use the new teaching mode in class, highlight the students' subjective position, promote students to master the engineering technology principle and stimulate students' learning enthusiasm. For example, teachers can adopt the project teaching method and task driven teaching method, introduce real engineering

projects into teaching, hand over the classroom to students, enable them to complete the project through independent thinking, consolidate their basic knowledge, stimulate their enthusiasm for learning, and exercise the students' practical operation level. For another example, teachers can use case analysis or group cooperation to explore other methods, use media technology to reproduce engineering cases, use actual computer engineering projects to help students broaden their horizons, cultivate the habit of autonomous learning, and guide students to master cutting-edge technology information and understand the latest industry development and scientific research achievements.

3.3 Attach importance to practice and carry out school enterprise cooperation

In the curriculum system of computer specialty, practical teaching plays an important role. Practical teaching is the key content of engineering education. Practical courses can help students consolidate theoretical knowledge, focus on cultivating students' practical skills and innovation ability, and improve students' engineering literacy. In the talent training objectives and practical teaching objectives of computer specialty, the educational concept of engineering practice should be taken as an important guide, which runs through the teaching system of practical courses. At the same time, the modular construction of practice platform and courses should be used to design the teaching oriented by students' practical ability. First of all, the design of practical teaching system should combine with the standards of engineering certification, analyze the talent training objectives and practical teaching objectives of colleges and universities, and design various indicators based on the results. Professional teachers should analyze and sort out the requirements of practical courses for engineering certification standards and teaching objectives, clarify students' quality, knowledge level and practical ability objectives, integrate the relationship between curriculum practice, teaching objectives and engineering certification standards, and connect social practice, curriculum arrangement, experimental teaching, professional practice, graduation design and other teaching links, Build a practical teaching platform that meets the needs of the course. Secondly, the teaching of computer specialty should establish the school enterprise cooperation mechanism, deepen the school enterprise cooperation, and promote the stable improvement of students' practice level. The development of school enterprise cooperation can promote the sharing of teaching resources between colleges and enterprises, build training bases in off campus joint enterprises, introduce enterprise equipment and funds, lay an important foundation for the development of engineering education, cultivate applied and innovative talents, meet the development needs of quality education, highlight the student-centered education principle, and aim to cultivate students' practical ability, Reasonably plan the advantages and resources of both parties.

3.4 Improve the level of teachers and improve teaching evaluation

From the perspective of engineering education certification, the level of teachers' professional ability is related to the development of students' comprehensive ability. Therefore, teachers should improve their teaching level, fully promote students' computer engineering practice ability, innovation ability, knowledge and skills, solve engineering problems and other abilities, and constantly improve their professional ability. Computer professional teachers should actively participate in the training organized by the school, improve their practical teaching level, establish lifelong learning awareness, constantly learn the latest technology in the computer industry, expand their horizons, deeply study computer professional technology, and apply the learning results to teaching. Ensure the stable improvement of their own education and teaching quality.

At the same time, it is of great significance to establish a scientific and rational teaching assessment and evaluation mechanism from the perspective of output and achievement oriented engineering education professional certification. Practical teaching assessment and evaluation can measure whether students' practical course learning and comprehensive ability can meet the ability requirements and engineering education standards. The school should focus on students' practical ability, set corresponding standards according to the degree of realization of the objectives of practical teaching, and highlight the assessment and evaluation of students' comprehensive ability.

In a word, from the perspective of engineering education professional certification, the teaching of computer specialty should focus on students' teaching reform, pay attention to the improvement of students' comprehensive quality and practical ability, and cultivate high-quality professional computer talents. Teaching should comply with the requirements of engineering education professional certification, adhere to in-depth research, improve the quality of professional construction, and promote the smooth development of talent training.

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