

A Probe into the Reform of Practical Teaching Mode of Computer Majors in Colleges and Universities under the Direction of Engineering Certification

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Abstract: Engineering education subject certification refers to the specialized certification of engineering professional education carried out by professional certification institutions for higher education institutions, which is carried out by specialized vocational or trade associations (federations) and professional societies together with education experts in this field and related industry enterprise experts. On the one hand, engineering certification is the affirmation of teaching work in colleges and universities, on the other hand, it brings great challenges to colleges and universities. In the face of policy affirmation, colleges and universities need to continuously improve teaching quality. Because of the particularity of computer science, colleges and universities should pay special attention to the quality of practical teaching, constantly change the mode of practical teaching, and create comprehensive and high-quality computer talents.

1. Introduction

Certification related to Professional graduates You may apply for relevant engineer qualifications in the countries and territories of the Washington Agreement or apply for postgraduate qualification Enjoy and local Graduates The same treatment, and Certification related to Professional, with high recognition in the industry, graduates This advantage can be used to achieve Full Employment. Under the guidance of engineering certification, computer majors in colleges and universities need to attach great importance to the improvement of professional teaching quality, which also responds to the national demand for high-quality computer talents. Colleges and universities must teach basic book knowledge at the same time, give students more opportunities to practice. The computer major is different from other majors, learning computer requires continuous practice to practice the computer to eat through, the rigid knowledge in books cannot explain the complex computer clearly, therefore, colleges and universities should seize the opportunity to reform the practice teaching mode of computer major in the positive education environment, enhance the students' practical operation ability, and train the computer talents with super hands-on ability.

2. Current Situation of Computer Majors in Colleges and Universities

Computer majors have been in China for more than ten years. After 2003, computers began to spread widely in China, and many families have gradually installed computers. After several years of this upsurge, computer majors have emerged and derived a lot of computer-related specialties. According to Figure 1, computer majors ranked second among the 20 most popular majors in English only in 2014. This is the social demand for computer talent, our country is still in the stage of lack of high-quality computer talent, which requires the continuous efforts of colleges and universities, pay attention to the training of computer professionals.



Figure 1 Exchange of information

Because of the rapid development of computers, most of the professions need to have computer talents, and the demand for computer talents in the society is very huge. With the continuous popularization of computer and network applications, the development of computer software and the rapid development of related industries, all kinds of industries need relevant talents, and a large number of professional programmers and project leaders or related engineers are in urgent need.



Figure 2 Talent needs

The employment rate of students majoring in computer science and technology is 93.9% half a year after graduation, and the income is higher than that of other majors after half a year of graduation, and the employment satisfaction degree is also the highest among the ten engineering subjects, which fully indicates the demand of the society for computer talents, and because of the high development of computer science at present, the quality of computer talents is higher, and most of computer graduates are engaged in the work of computer application, so each university should redistribute the proportion of theoretical and practical courses to cultivate practical talents.

3. Practice Teaching Mode of Computer Specialty Under the Guidance of Engineering Certification Reform Strategy

3.1. Software Development Courses for Students to Learn More About Computers

Because the computer major is a typical engineering major, the training goal of engineering major is mainly applied talents, so the practice teaching mode of computer specialty is one of the important links to embody the training of applied talents of computer technology. Software courses, for example. As shown in figure 3, the proportion of software engineering courses shown in the assignment of computer major courses is large, accounting for 62% of the whole, so we should pay attention to the students' mastery of software development knowledge. The development of software course is to let students understand the basic process of software development, in the process of practical operation, the principle of computer homework is preliminarily studied, so as to have the preliminary maintenance ability of computer system development. However, since software development is a more abstract computer technology, if the teacher is simply to teach the textbook empty inherent steps, students in the operation will be unable to start the phenomenon. Therefore, this not only needs the teacher to teach the inherent code, the step, but also needs the teacher to guide the student to do the operation, in this process the teacher must have the patience, guarantees the student has fully understood the teaching content, only then will not affect the next

step teaching. In the study of computer, middle school students will understand the abstract principle only when they have done it.



Figure 3 Computer science

3.2. Adequate Post-Class Practice to Enable Students to Explore Independently

Assignment of homework after class is a necessary means to assist teachers to better teaching, so that they can play it freely, especially for computer majors with strong practicality, teachers assign more practical operation homework to students, leave a practical homework for students in a week, and give students enough time to learn and grope for themselves, so as to consolidate the knowledge learned more. For example, make a simple web site and develop a simple software. Because the process of completing homework is the process of practice, the experience and skills that students find out in practice are very valuable. The arrangement of practical homework is necessary in the process of computer teaching, which is an indispensable means to improve students' ability, and one of the effective ways to promote learning and use. In any professional teaching, it is necessary to use the method of assigning homework to give students the space to learn independently, so that students can explore and practice actively, improve their overall achievement and ability in the process, and keep in mind that they will learn more[1].

3.3. Reform of Teaching Content Based on Practical Knowledge of Computer

For the students of computer major, it is necessary to better carry out practical knowledge teaching according to the needs of computer education, optimize and configure the theoretical and practical courses in teaching curriculum, realize the needs of practical teaching on the basis of reasonable teaching plan, innovate the concept of teaching, and formulate a reasonable mode of training education for professional practical talents. The training of computer teaching first lies in the optimization of theoretical and practical courses, the rational division of professional curriculum education and general curriculum education, the coordinated division according to the needs of teaching experiments, the increase of the proportion of practical teaching, and the continuous improvement of the allocation of teaching courses. Under the background of engineering certification, engineering colleges and universities should follow the steps of policy, change the focus of teaching, and tilt the teaching content to the practical computer information and technology. Instead of focusing on the abstract theories in books, students can better grasp the corresponding comprehensive function in the process of practical operation, understand the abstract contents in the course of operation, and count them into the brain. In this process, teachers play a pivotal role, teachers must take guidance as the main, teaching knowledge as a supplement, do not let their own habitual thinking affect students' learning behavior. Teachers should take the students as the center, attach importance to the students' main position in the classroom, and focus on cultivating students' ability to solve complex computer problems and operate independently[2].

3.4. Set Up a High-Quality Teaching Staff to Create a Real Practice Environment

Under the engineering certification, more attention is paid to the comprehensive practical ability and skills of college computer majors, which puts forward higher requirements for efficient work.

On the one hand, it is necessary for colleges and universities to change the talent training program and provide material and equipment support for practical teaching of computer specialty to ensure the normal operation of computer specialty courses. On the other hand, it also puts forward higher requirements for computer teachers in schools. Colleges and universities should raise the entry threshold of relevant professional teachers, introduce relevant double-qualified teachers in women, and perfect and optimize the teaching staff. The teachers of computer major must have the corresponding experience, understand the basic situation of the current computer talent market, know the occupation that the students mainly engage in after graduation, and teach the relevant professional practice knowledge. In addition, it is necessary for colleges and universities to deepen and promote the integration of industry and learning, promote the construction of practice training base of enterprises outside the school, provide students with a more realistic practice environment, fully tap the resources of students' practice training outside school, and explore the new mode of practice teaching of computer specialty under the guidance of engineering certification. At the same time, schools must base themselves on the requirements of engineering certification of computer majors, constantly improve the practice training equipment of computer specialty, speed up the construction of a base closest to the practice of computer enterprises, and strive to improve the students' comprehensive professional quality of computer science[3].

4. Conclusion

All in all, engineering certification It is a positive affirmation for computer majors in colleges and universities, but because of the social background and the special demands of society on the quality of computer talents, it is imperative to reform the practice teaching mode of computer specialty in colleges and universities.

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