

Research on Training mode of electronic information applied talents under the background of new engineering

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Abstract: In recent years, the rapid development of China's social economy, driving the electronic information technology towards a more high-end, intelligent direction of innovation and development, at the same time, the concept of "new engineering" has been put forward, the demand for electronic information professional applied talents is more and more, the practical ability of talents, professional literacy, innovation ability and other aspects of the requirements are also getting higher and higher. Colleges as the cradle of innovative talents in social application, under the background of "new engineering", more attention should be paid to the cultivation of professional ability and innovative entrepreneurial ability of electronic information professionals, focusing on the improvement of students' comprehensive literacy, so as to ensure that students can adapt to the job more quickly after graduation and meet the requirements of enterprises. Based on this, this paper deeply analyzes the problems existing in the teaching of electronic information majors in colleges and universities, and puts forward corresponding strategies for the optimization and reform of its application-oriented talent training mode, hoping to provide certain references.

Key words: new engineering; Electronic information; Applied talents; Talent training mode

I. The problems existing in the teaching of electronic information majors in colleges and universities

1. Practice teaching is not paid attention to

As the electronic information major established by colleges and universities has outstanding practical and comprehensive characteristics, many schools will set up theoretical courses and practical courses in the course system. However, because most teachers are stuck in the fixed thinking, they do not carry out practical investigation and investigation, so it is difficult to grasp the actual market demand of the electronic information industry under the "new engineering" environment. As a result, the curriculum system set up lacks pertinence and professionalism. Secondly, some electronic information teachers in colleges and universities have cognitive bias towards practical teaching, believing that practical teaching is to teach students operational skills, and they do not carry out special training for exploring practical problems, nor do they improve students' practical application ability based on actual cases, which makes it difficult for students to adapt to the post needs of the electronic information industry.

2. Teaching facilities are not perfect enough

Practice bases, simulation platforms and simulation classrooms established by colleges and universities all play a vital role in professional courses, and are also the premise and foundation of teaching in colleges and universities. However, due to the neglect of the teaching of electronic information majors in some colleges and universities, coupled with limited funds, they have not invested a lot of money to buy advanced equipment and technology. As time goes by, it will lead to the obsolescence and aging of campus practice equipment. For example, in the training room specially built for electronic information majors in colleges and universities, the indoor equipment is not regularly repaired and the software technology is not updated in time, which ultimately leads to poor teaching quality.

3. Lack of professional teachers

In terms of the actual teaching of electronic information majors, although professional teachers in many colleges and universities have rich theoretical knowledge and skilled practical skills, they are difficult to integrate them effectively, which ultimately leads to poor teaching quality. In addition, although some electronic information teachers have rich theoretical knowledge, they lack rich practical experience and have not been engaged in front-line jobs related to the electronic information industry. As a result, their practical ability is weak and it is difficult for them to grasp the development trend of the electronic information industry.

II. The training strategy of applied talents for electronic information majors

1. Clear professional positioning, optimize the training objectives of talents

Based on the background of new engineering, in order to achieve the training of applied talents, we must first clarify the professional positioning and determine the training objectives according to the professional positioning. As for electronic information major, as a highly technical major, its main teaching purpose is to cultivate high-quality applied innovative scientific and technological talents, so that their ability and accomplishment can meet the needs of system design and development, artificial intelligence and other fields. Capable of technical support, system development and maintenance, product research and development, project management and other work related to electronic information engineering. In this regard, colleges and universities can further clarify the training objectives of talents of this major, and determine the five aspects of knowledge application ability, practical ability, innovative cooperation ability, professional quality and lifelong learning consciousness.

First, for the cultivation of talents' knowledge application ability, it is to ensure that students have a solid theoretical knowledge

foundation, can apply professional knowledge to analyze complex electronic information engineering problems, and can put forward effective suggestions, so that students' knowledge foundation and knowledge application ability can adapt to the development needs of electronic information field technology. Secondly, for the training goal of practical ability, students are required to be competent for the technical work of electronic information engineering, such as the research and development and manufacturing of new products, the debugging and maintenance of machinery and equipment, service management, etc., on the basis of complying with the technical standards of the industry, and have certain post competency. Thirdly, for the cultivation goal of innovation and cooperation ability, students are required to have certain innovation ability and communication and cooperation ability, so that they can achieve effective communication and cooperation with team members in their work, and can put forward innovative ideas to ensure efficient work standards. Fourth, professional literacy training objectives, that is, students need to correctly understand the professional ethics of electronic information engineers in the study, and be able to comply with the relevant norms and standards in the work, the formation of love and dedication, honest and trustworthy good quality, with a strong sense of social responsibility. Fifth, lifelong learning awareness training goals, which is to ensure that students can continue to improve themselves in the future basis, to cultivate students' lifelong learning awareness, is to allow students to form the habit of continuous learning, so that they can continuously improve their knowledge and ability in the future work to meet the needs of social and industrial development, enhance their own professional competitiveness. Through the determination of these five talent training goals, a clear guidance can be formed for the follow-up teaching of electronic information majors, which is conducive to improving teaching efficiency and teaching effect, and promoting the training of applied talents.

2. Establish an interdisciplinary curriculum system based on innovative practice

Electronic information major itself has certain interdisciplinary characteristics. In the teaching of this major, its curriculum system not only includes basic general courses and professional courses, but also includes professional core courses, elective courses and practical courses. In addition, its practical teaching includes experiment, practice and other links in addition to practical courses. From this point of view, the construction of the curriculum system of this major is a relatively complex project. Under the background of "new engineering", in the process of constructing interdisciplinary curriculum system for electronic information majors, teachers should base on the cultivation of students' innovative literacy and practical ability, and design the corresponding curriculum system according to the progressive relationship between theoretical knowledge mastery, design and analysis skills training and complex engineering problem solving ability training. Highlight the talent training characteristics of this major.

In the construction of the actual interdisciplinary curriculum system, first of all, the theoretical knowledge courses can be divided into computer technology course group, electronic technology course group, microcontroller technology course group, sensor course group and artificial intelligence course group according to the professional course group, and the course arrangement is carried out step by step according to the development of students' ability level and the depth of professional course knowledge. To ensure that students learn knowledge from the simple to the deep, to ensure that students can understand the complex electronic information engineering knowledge content, so that students grasp a solid theoretical knowledge foundation, for the subsequent practical learning and technical ability training foundation. Secondly, for the practical curriculum setting, independent experimental courses can be set up, which mainly cover the basic experiment of electronic information technology, electronic electrical practical training, electronic technology training, electronic information system comprehensive design, etc., in the experimental teaching to further consolidate the theoretical foundation of students, improve students' knowledge application ability and practical ability, and cultivate students' comprehensive literacy. In the experimental course teaching, teachers can introduce PBL teaching method, through the way of group cooperation, so that students can experiment and exchange on the corresponding problems. Through this teaching method, not only can each student get the opportunity of experiment operation, effectively improve their practical ability, but also effectively improve their team cooperation and independent learning ability, so as to realize the all-round quality development of students.

3. Strengthen the transformation of resources and build a platform for industry-university-research practice

In order to ensure the effective development of practical teaching of electronic information majors in colleges and universities, and promote the training of applied talents, colleges and universities should speed up the establishment of practice platforms for production, study and research, further promote the transformation of production, study and research resources, and improve the level of practical teaching. Based on this, colleges and universities can rely on the advantages of the integration of industry and education, absorb social resources, and cooperate with enterprises to build an industry-university-research practice platform, covering basic teaching laboratory, professional laboratory, innovation and entrepreneurship laboratory and school-enterprise co-construction laboratory, etc. In the process of practical teaching, colleges and universities should actively give play to the advantages of school-enterprise cooperation, and in the formulation of talent training plans and the development of practical teaching, Strengthen the participation of professional electronic information engineers in enterprises, provide more professional guidance, promote the efficient docking of practical teaching and actual posts, and effectively improve the post competency of students.

First, the basic teaching laboratory undertakes relatively more experimental tasks, including the public basic course experiment and the experimental course experiment taught separately. In this regard, colleges and universities need to make reasonable arrangements for electronic information technology experiments, pay attention to the development of comprehensive experiments and designed experiments, and reduce the proportion of some basic experiments. In the management of this type of laboratory, it can be open to teachers and students all day to meet the experimental needs of teachers and students, and build a combination of experimental teaching model inside and outside class. Second, the main purpose of the professional laboratory is to provide teachers and students with the experimental platform

of electronic information frontier technology, which is mainly open to senior students, master students and doctoral students. Third, the innovation and entrepreneurship laboratory undertakes the tasks of innovation and entrepreneurship practice activities, various practical training tasks and scientific and technological innovation competitions, which is conducive to strengthening the development of science and technology and the application of new technologies, and aims at cultivating students' innovation literacy and entrepreneurial ability. In addition, through the innovation and Entrepreneurship laboratory, teachers and students can jointly innovate scientific research projects according to the needs of enterprises, so as to promote the transformation of industry-university-research resources. Fourth, the university-enterprise co-construction laboratory is led by universities and jointly built by enterprises. It mainly relies on enterprise resources to carry out new technology research and development projects and promote the training of technology application-oriented talents, aiming at achieving effective transformation of industry-university-research resources.

4. Improve teachers' ability and build a "double-qualified" teacher team

The ability of teachers is the key factor affecting the effect of personnel training. With the iterative update of electronic information technology, the society has higher and higher requirements on the comprehensive ability of electronic information professionals, which also puts higher requirements on the teachers of electronic information majors in colleges and universities, and requires teachers to constantly update their educational concepts and improve their teaching level. For teachers, they must ensure that they have a solid knowledge foundation and strong practical ability, and reach the "double-qualified" teacher standard. Only in this way can they give students more professional guidance, and then cultivate excellent and well-developed talents.

In this regard, first, college electronic information professional teachers should strengthen their own learning consciousness and establish the concept of lifelong learning. First of all, teachers should actively learn advanced educational concepts and teaching methods, introduce new teaching modes in teaching, and constantly improve their own teaching level and teaching ability. Secondly, teachers should strengthen their professional ability, keep abreast of the latest technology in the electronic information industry, expand the scope of professional knowledge, constantly improve their professional ability, enhance professional quality, and provide students with more effective guidance. Second, colleges and universities should pay attention to the construction of "double-qualified" teacher teams and constantly optimize the teaching staff. First of all, colleges and universities can carry out internal and external training for teachers of electronic information majors, so that teachers can learn advanced professional techniques, promote the improvement of teachers' professional practice ability, and make teachers achieve the standard of "double-qualified" teachers. Secondly, schools can also invite professional engineers from enterprises to work as part-time teachers in schools to provide students with more professional practical guidance, share practical experience, and invite them to participate in the research and development of electronic information technology in schools, further optimize the structure of teachers, form a "double-qualified" teacher team, and improve the training level of professional talents.

III. Conclusion

To sum up, under the background of "new engineering", China's electronic information industry is in urgent need of high-quality applied talents. In this regard, colleges and universities need to further optimize the training mode of electronic information professionals according to the needs of social talents in the new era, improve professional teaching standards, and provide high-quality technical talents for the development of electronic information industry. Colleges and universities can continuously improve the teaching effectiveness of electronic information majors, optimize the training mode of talents, and speed up the training of electronic information engineers with innovative applications from the aspects of optimizing the training objectives of talents, constructing the interdisciplinary curriculum system, setting up the practice platform of industry-university-research, and building the "double-qualified" faculty team.

Reference literature:

- [1] Mingli Zhou. Training of innovative Application talents for Electronic information majors in Big Data era [J]. *Wireless Internet Technology*,202,19(07):152-153.
- [2] Fengmin Cheng,Yajing Zhang. Research on the training of applied talents in Electronic Information Engineering under the background of new engineering [J]. *Wireless Internet Technology*,2021,18(22):163-164. (in Chinese)
- [3] Ting Gu. Research on Practical Teaching of Training Applied Talents for Electronic and Information majors [J]. *Fujian Computer*,2021,37(07):131-133.
- [4] Jin Wu. Training applied Talents of Electronic Information Engineering Major based on discipline competition [J]. *Computer Products and Circulation*,2020,(08):111.