

Strengthen the construction of professional connotation and improve the training quality of electronic information undergraduate talents

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Abstract: The construction of first-class undergraduate major is a construction project implemented by the Ministry of Education for undergraduate colleges and universities. It emphasizes on strengthening first-class undergraduate, cultivating legacy talents, and improving the cultivation ability and quality of talents in colleges and universities, which is an important measure to promote the conformal development of college education. Electronic information major is an important major in the college education system, should pay attention to the “first-class professional construction” as the development goal, pay attention to promote the professional connotation construction, optimize the curriculum system, teachers and education management, pay attention to accumulate rich experience, improve the quality of personnel training. Based on this, this paper analyzes the practical strategies for the construction of first-class electronic information major in undergraduate colleges and universities, hoping to provide references for educators.

Key words: Undergraduate universities; Electronic information; First-class professional construction; Professional connotation

Introduction: Electronic information major belongs to the high-tech emerging engineering major, and its professional knowledge and technology develop and update rapidly. However, at present, some electronic information majors in colleges and universities have the problem of convergence, the course knowledge taught is out of line with the industrial demand, and the talent training cycle is difficult to keep up with the speed of technological update. In this regard, undergraduate colleges and universities should pay attention to promoting the construction of majors, combine the innovative development characteristics of electronic information majors, tap the characteristics of colleges and universities, focus on the needs of social development, promote the renewal of professional training programs, curriculum systems and teaching resources, and promote the construction of majors from multiple angles and measures, so as to make professional teaching meet the needs of social development and promote the conformal development of electronic information majors.

I. Strengthening the teaching problems to be solved in the construction of professional connotation

In the new era, Qilu University of Technology and Shandong Academy of Sciences have entered the stage of deep integration 2.0, in order to promote the exploration of the construction of electronic information majors. The construction of professional connotation emphasizes taking the industrial demand as the guide, optimizing and reforming the teaching objectives, teaching system and practice platform, etc., and exploring the first-class information major with brain suitable for the economic development in the new era. Major is the basic unit of personnel training and the key to the construction of high-level education and the realization of high-quality personnel training. At present, there are still many problems in the construction of electronic information majors in undergraduate universities. The following problems should be solved through the construction of professional connotation:

First, the target system of new engineering is out of line with the demand of industry. With the continuous development of higher education, engineering majors gradually appear to be out of touch with market development needs, which makes the connection between teaching objectives and market needs insufficient. With the rapid development of modern technology, the combination of emerging technology and electronic information exhibition industry has prompted earth-shaking changes in the industry, and the demand for talents in society has gradually become more complex. However, at present, most colleges and universities do not update the target system in time, lack effective docking with the market demand, and lack of matching degree with the current market engineering practice, so that the knowledge and ability of the students cultivated are out of line with the industrial demand.

Second, the concept of training deviates from the concept of engineering education professional certification. Engineering education certification is an inevitable way for electronic information majors to promote education reform and build first-class undergraduate majors. As far as the current teaching is concerned, the teaching of electronic information majors is still teacher-oriented, the inquiring and interactive teaching activities are not full of vitality, and scientific and perfect teaching evaluation has not yet been formed. The educational concept reflected in the personnel training work deviates from the concept of “student-centered, output-oriented and continuous improvement” emphasized by the engineering education professional certification. It is difficult to effectively improve the quality of talent training.

Third, professional teaching methods are not rich enough. The richness of professional teaching methods is very important to improve teaching quality and stimulate students’ enthusiasm for learning. At present, the teaching methods adopted by teachers are too traditional and lack of innovation. The one-way knowledge transfer method is easy to make students feel boring and boring, resulting in unsatisfactory teaching effect. Only by constantly exploring and innovating teaching methods, teachers can better stimulate students’ learning interest and potential, and cultivate talents with more innovative spirit and practical ability.

II. The construction strategy of professional connotation to improve the training quality of electronic information undergraduate talents

1. Systematically promote the comprehensive reform of majors and strengthen the convergence of market demand

The concept of industry-university-research collaborative education emphasizes focusing on the needs of industrial development, improving professional teaching through school-enterprise cooperation, promoting the integration of science and education with industry

and education, clarifying the target system of talent training, and cultivating students into high-quality talents who meet the needs of social development. First of all, the concept of advanced talent training should be established. Electronic information majors should establish the core teaching concept of “cultivating morality”, highlight the educational function of curriculum teaching, and run ideological and political education and moral quality education through the whole teaching process. In this process, teachers should pay attention to excavating the ideological and political elements hidden in the textbooks, skillfully integrate humanistic values, feelings for the family and the country, scientific literacy and other ideological and political elements into teaching, and build a teaching model integrating knowledge imparts, value guidance and ability cultivation. Secondly, the target system of talent training should be clearly defined. The results-oriented concept is the core of engineering education certification. Teachers of electronic information majors should reasonably design talent training objectives based on the results-oriented education concept, integrate higher engineering education with international standards, and define a general talent training objective, a number of detailed decomposition objectives, and a number of graduation requirements. Among them, graduation requirements include various ability index points and ability index points, such as engineering knowledge required for information processing engineering problems, microcontroller and control technology knowledge, etc. Each graduation requirement index point corresponds to the corresponding course. Through the construction of target system to promote teaching reform, the formation of “training objectives - graduation requirements - curriculum system” bottom-up talent training mode.

2. Construct a multi-dimensional collaborative talent training system and build a team of high-quality teachers

With the rapid development of electronic information industry technology, colleges and universities should pay attention to promoting teaching reform in combination with industry trends and advanced technologies, pay attention to introducing the achievements of scientific research institutes, industrial enterprises and industrial advanced technologies into teaching, build a multi-dimensional collaborative talent training system, and set up high-quality teaching teams. First of all, the curriculum system and curriculum quality should be improved. Electronic information majors should constantly optimize and improve the curriculum system, and comprehensively improve the curriculum quality by optimizing different courses. In terms of professional basic courses, emphasis should be placed on integrating professional courses with cutting-edge technologies, consolidating the teaching foundation of professional courses, and promoting the effective combination of mass innovation courses and interdisciplinary courses. In terms of practical courses, attention should be paid to organizing diversified practical activities, including experimental activities, comprehensive practical courses, discipline competitions, etc., to promote the development of students’ practical and innovative ability through various means. In terms of curriculum reform ideas, we should adhere to curriculum reform, eliminate water courses and obsolete knowledge content, start with the construction of high-quality courses and gold courses, create national first-class undergraduate courses, national curriculum ideological and political demonstration courses, etc., and comprehensively improve the quality of courses. Secondly, a team of high-level teaching teachers should be established. Colleges and universities should establish a teaching team system of “faculty, department and course group” division of labor and cooperation, and pay attention to carrying out special training activities for teachers to improve their teaching ability. For example, we should set up a reservoir of young teachers, provide targeted guidance to young teachers, organize teachers to participate in teaching skills competitions and other activities to improve teachers’ teaching level. We will establish an incentive mechanism for teachers, provide good service guarantee for teachers, and promote the sustainable development of first-class professional curriculum teams.

3. Establish a practice platform both inside and outside the school to promote the integration of production and education in teaching

In the process of specialty conformal construction, Qilu University of Technology (Shandong Academy of Sciences) should focus on reflecting the advantages of the integration of science and education and the integration of industry and education, build a practice platform through promoting school-enterprise cooperation, so as to introduce advanced technology and scientific research results of enterprises, promote the flow of resources such as industrial enterprise project cases to the university, and promote students to contact more industry content. Improve students’ ability to innovate and practice and solve complex projects, and help students develop in an all-round way. The university builds a first-class undergraduate experimental practice teaching platform through school-enterprise collaboration, improves the national experimental teaching demonstration center and virtual simulation experiment demonstration center, and introduces advanced teaching instruments and equipment according to the needs of platform construction, improves the construction of laboratory infrastructure and resources, strengthens the foundation of first-class professional construction, and provides an effective guarantee for personnel training. First of all, colleges and universities should play their own leading role, regularly organize professional group meetings, school-enterprise collaborative education mechanism meetings and other activities, strengthen teaching and research exchanges and cooperation with enterprises and other colleges, and promote multi-party collaborative education of electronic information majors. Secondly, closely follow the industrial development, establish training practice bases with local leading electronic information enterprises, actively promote the joint education work of both schools and enterprises, arrange students majoring in electronic information to participate in practical learning in enterprises, jointly promote resource integration with enterprises, build online virtual simulation experiment and innovation practice platform, and jointly carry out remote online practical teaching with enterprise technicians. Improve students’ engineering practical skills and industrial awareness. In this process, the university should strengthen the application of enterprise resources, so as to strengthen the connotation construction of first-class professional undergraduate laboratories, build a multi-level experimental teaching system, and gradually improve the quality of professional teaching.

4. Construction of quality culture based on the concept of engineering education and establishment of personnel training guarantee system

The teaching of electronic information majors should fully implement the concept of engineering education certification, clarify the teaching in combination with the standards of engineering education certification, infiltrate the concept of “student-centered and student-

learning-output-oriented” into the whole teaching process, formulate quality standards and internal evaluation mechanisms for the training of electronic information majors, improve the construction of various systems, coordinate and coordinate various work. Solidly promote the first-class professional hypothesis, and build a normal quality guarantee system for talent training. The university should take the initiative to align with the needs of national strategic development, focus on the needs of local economic development and new engineering construction, promote cross-disciplinary and interdisciplinary cooperation, build high-level professional groups and first-class professional frameworks, and give full play to the positive role of institutional systems in professional construction. The university should implement the OBE concept, carry out the professional certification of engineering education, set up a professional engineering education certification expert working group, put forward a series of measures in combination with the quality and culture construction work, continuously improve teaching activities, and organize communication engineering majors and electronic science and technology majors to conduct engineering education certification successively, so as to provide guarantee for the construction of first-class majors. Electronic information majors should adhere to the characteristics of student-oriented education, open educational resources to students, including laboratory resources, digital resources, etc., to meet the needs of students in using laboratory resources and equipment, strengthen guidance and help to students, solve problems in students’ learning, and effectively improve students’ engineering practice ability and scientific and technological innovation ability.

III. The effectiveness of major construction

Qilu University of Technology (Shandong Academy of Sciences) promotes the construction of first-class electronic and information majors, optimizes and reforms electronic and information engineering, communication engineering and other majors, and improves the personnel training system and cooperation platform construction through cooperation with relevant professional colleges, research colleges and high-tech enterprises, and achieves good results, mainly including: 1. In accordance with the development needs of The Times, the development needs of applied electronic information industry are introduced into the teaching system, and a talent training target system is built that integrates the needs of regional economic development, student development and the characteristics of the university. 2. With the concept of “student-centered, output-oriented and continuous improvement” as the guidance, the reform of multi-dimensional collaborative education system is promoted, and the curriculum teaching system, practical teaching system and teacher team construction system are improved. 3. Strengthen institutional cooperation, build a collaborative education platform inside and outside the school through production and education financing, and implement school-enterprise collaborative education. 4. Establish a regular quality guarantee system for the training of electronic information professionals in line with the certification standards of engineering education, and promote the regular advancement of teaching reform.

Epilogue

To sum up, undergraduate colleges and universities shoulder the important mission of promoting local and regional economic development and conveying high-quality talents, and should take the construction of first-class undergraduate majors as an opportunity for development, promote the comprehensive reform of majors and accelerate the conformal development. Under the environment of the new era, colleges and universities should pay attention to conforming to the market development needs and the development characteristics of electronic information majors, promote the construction of professional conformance, combine the characteristics and advantages of professional characteristics, take the training of composite applied talents as the goal, take the development needs of students and social development as the guidance, take the training of talents as the test standard, and establish scientific and perfect personnel training inscriptions. Improve the professional personnel training program and curriculum system, train more professional and multi-capable high-quality professionals, and promote local economic development.

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