New Engineering Construction and Development of Electronic Information Specialty under the Concept of OBE

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Abstract: In the construction of new engineering, the word "new" takes the lead and the emphasis is on "construction". From "Fudan consensus" to "Tianda action" and then to "Beijing Declaration", the educational circles have reached a general consensus on the understanding of the word "new". They think that the meaning of the word "new" is two points, namely "informatization" and "intelligence". As a national key university with its own characteristics, how to construct the major of electronic information engineering in the era of new economy? The new engineering construction gives the answer, which is to face the new economy and new industry, integrate "informatization" and "intelligence" into the traditional electronic information engineering specialty, and combine with the forestry industry to highlight the characteristics. Therefore, this subject focuses on the new requirements for the cultivation of electronic information engineering talents in the new economy, and focuses on the construction of the curriculum system and teaching content with the characteristics of the university to adapt to the new economy. We will promote the interdisciplinary construction, transformation and upgrading of traditional electronic information engineering, and meet the needs of emerging industries and new economic development for composite talents of electronic information engineering.

1. Introduction

At present, the state promotes innovation driven development, and implements major strategies such as "one belt and one road", "made in China 2025" and "Internet +". With the vigorous development of new economy represented by new technologies, new formats, new modes and new industries, higher requirements have been put forward for Engineering Science and technology talents, and it is imperative to accelerate the reform and innovation of engineering education. In order to deepen the reform of engineering education and promote the construction and development of new engineering of electronic information engineering, the main problems to be solved in the project are as follows. (1) what kind of electronic information engineering professionals does the new economy need? What is the basis of renewing course system and teaching content for electronic information engineering major in Colleges and universities? (2) what are the ways and

means of information and intelligent transformation of traditional electronic information engineering? (3) facing the new technologies such as artificial intelligence, big data, cloud computing and Internet of things, how to transform and upgrade the electronic information engineering major in undergraduate colleges and universities to form a new curriculum system? Since 2016, the artificial intelligence technology represented by vision and perception has become more and more mature. Through new technologies such as big data, cloud computing and Internet of things, unmanned supermarkets and intelligent security have been realized, and the technology of driverless vehicles has become more and more mature. More and more applications of these new technologies appear in people's vision and have a great impact on our lives. With the emergence of new technology, the gap of such talents will increase greatly. For this reason, the college and the specialty consider the situation, plan the future development direction of the specialty actively in view of the wave of artificial intelligence, which is a revolutionary technology wave sweeping the world, and carry on the beneficial exploration and practice to the construction of the new engineering of electronic information engineering in the undergraduate college based on the OBE concept.

2. Research and Analyze the New Requirements of the New Economy for the Cultivation of Electronic Information Engineering Professionals in Undergraduate Colleges

In accordance with the CPC Central Committee and the State Council's decision making plan to promote information construction and reform and development, in March 22, 2016, the National Bureau promulgated the "Internet plus" action plan, implementing 8 major actions and 48 key projects. In the "13th Five-Year" period, informatization will conform to the trend of global information technology. Guided by the national informatization strategy, it will fully support the undertakings of modernization, subsidies, reform and development, resource protection, ecological restoration, industrial development and other undertakings, and vigorously promote the construction of "Internet +". With the goal of improving the level of modernization, we will achieve Internet thinking, three-dimensional perception, big data decision-making, intelligent production, collaborative office and cloud information services, support and lead the reform and development, and make greater contributions to building a beautiful China and ecological civilization. The "Internet plus" action plan has pointed out the direction for the electronic information engineering major of undergraduate colleges to train talents under the new economic conditions. Informatization and intellectualization need to cultivate talents with artificial intelligence in electronic information engineering major of undergraduate colleges. To this end, we need to comprehensively upgrade and transform the existing curriculum system and teaching content. On the basis of retaining the traditional basic courses of electronic information engineering, we need to integrate the courses related to artificial intelligence, such as Internet of things, big data and cloud computing, and combine them with the industry to cultivate the composite talents of electronic information engineering under the new economic conditions[1].

3. Integrating New Technology into the Teaching Content of Engineering Practice

In the goal orientation of curriculum system reconstruction under the concept of "new engineering", we should focus on docking industry and service area, reflecting industry standard and enterprise demand, reflecting discipline frontier and technological progress, paying attention to discipline intersection and problem orientation, and cultivating students' engineering thinking and comprehensive ability. In the realization path, we should adhere to substantial equivalence, design the curriculum system around the cultivation of students' engineering ability and knowledge structure structure, and construct the curriculum system for new engineering through the multiple

coordination of professional teachers, enterprise experts and teaching management functional departments. Therefore, the popular Python language programming content in artificial intelligence technology is added in the practice link of "Image Oriented Programming", some basic algorithms and application examples are introduced for in-depth learning, and the functions of face recognition and voice recognition are realized through the artificial intelligence computing platform, so that students can experience the new technology of artificial intelligence; the practice link of "building automation" course is added Through the intelligent building practice platform, students can understand that the building under the new technology has gone from automation to intelligence through the intelligent perception of security system, building Internet of things and other experimental links; in the "factory power supply" training link, students can use the intelligent distribution network dynamic model strong current laboratory to realize the power grid intelligence through the actual use of big data and cloud computing technology; in the "Microcomputer Principle and connection" In the course of "oral technology", ARM processor architecture and assembly language practice link are added. Heterogeneous hardware platforms (arm + FPGA or arm + GPU) are mainly used in the experiment process, so that students can adapt to the needs of new technology in general application of embedded devices. In the practice link of "embedded operating system", under the premise of applying Linux operating system, the depth and breadth of the practice process should be raised to a new high To meet the new requirements of embedded artificial intelligence[2].

4. To Realize the Information and Intelligent Transformation of Electronic Information Engineering, and to Reflect the Characteristics of Undergraduate Colleges and Universities

5. Combine Intelligent Internet Technology with Information Technology and Carry out Innovative Practice Activities

The major organizes students to actively participate in all kinds of innovation practice activities, and consciously combines intelligent Internet technology with information technology. For example, a hyperspectral remote sensing monitoring system based on four rotor UAV and micro optical fiber spectrometer is designed. Through intelligent interconnection technology and rich spectral information of hyperspectral images, real-time monitoring of forest fire, forest pests, forest resource changes and Forest Wetland Ecology is realized. This project won the third prize of 2017 National College Students' intelligent Internet innovation competition[3].

5.1 Further Strengthen the Cultivation of Students' Engineering Training Ability with the Guidance of Practical Training Results

In order to change the status quo of the ungrounded cultivation of engineering talents, only by relying on industry experts to enter the campus classroom and students to enter the industry through the "real knife and real gun" competition, can we meet the needs of talents under the new economic and new technology conditions. For this reason, in the new training program, in addition to maintaining the original two-week graduation internship in the enterprise, we should also invite the technical personnel of the enterprise as the teaching teachers of some course contents, and transfer the technology needed by the enterprise to the students in time. In addition, according to the needs of students and enterprises, the major and enterprise tutor can work out the internship plan, internship content and assessment index of students according to the development of new technology, so as to extend the time of students' internship in enterprises. According to the needs of enterprises, set up graduation project topics, jointly guide dissertation, and solve practical engineering problems[4-8].

6. Conclusion

Facing the new engineering discipline, the national key universities as the characteristics, the school attaches great importance to the development of engineering colleges, especially the promulgation of the "13th Five-Year plan" Internet plus action plan of the National Bureau. It is even more necessary to build a new platform for engineering practice education of Electronic Information Engineering Specialty, and cultivate more talents for adapting to the information characteristics of the new era.

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