Research on the Construction of Communication Engineering Major Curriculum System in Applied Undergraduate Universities Under the Background of Transformation

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Keywords: Communication engineering; Progressive curriculum system; Innovative education.

Abstract. With the reform of higher education in the country, in order to adapt to social development and meet the needs of enterprises and society for applied talents, it is imperative for higher education institutions, especially applied high schools, to rebuild the curriculum system, and to build and cultivate talents. The course system with the same goal is very important. Based on the reality, this paper explores a social communication-oriented reverse communication engineering course system.

Introduction

The world's scientific and technological progress is changing with each passing day. The economies and science and technology of all countries are developing at a high speed, and international competition is becoming increasingly fierce. The economic globalization and the development of science and technology have led to a major change in China's economic structure. The demand for talents in the society has also shown a diversified trend. The demand for technical or professional talents capable of first-line production is urgent, and the lack of applied talents. It is required to change the education of colleges and universities from elite education to popular education, actively develop applied education, and cultivate applied undergraduate talents that meet the production, construction and management services required by the society at present. This is not only the requirement of China's economic and social development, but also the inevitable result of the development of higher education itself.

The key to the cultivation of applied talents lies in the setting of the curriculum system in the professional talent training program. It determines the knowledge structure of the training of talents in colleges and universities. The study of the curriculum system, especially the curriculum of foreign applied universities, is of great significance to the training of talents in applied universities in China. The curriculum system refers to the organic whole composed of a set of courses that are designed and constructed by the higher education institutions according to the talent training objectives formulated by the university. It is the main carrier of the university personnel training, and the educational concept is put into practice. The bridge to achieve the goal of talent development is therefore essential to build a curriculum that is consistent with the orientation and goals of talent development.

Communication Engineering Major Reform Background

Communication engineering undergraduate majors because of its particularity, itself covers the content is more, contains the communication network, mobile communication, optical fiber communication, digital communication and a variety of new information and communication technology, strong theoretical, multifarious knowledge categories, is necessary for basic theory study, the communication engineering applied talents training course system construction, pay equal attention to theory and practice of facing the difficult of prominent contradictions, under the condition of total hours restrictions, how to do it not only ensure a solid theoretical foundation, and can follow the professional knowledge update, so to strengthen the training of practical skills. The
reform of the curriculum system of communication engineering specialty is challenged.

**Reform Ideas of Curriculum System**

At present, the curriculum system of applied universities in China is mostly modular design, which is divided into basic courses, professional foundations and professional courses. However, the links between modules are loose, the interval between professional courses and basic courses is longer, and the professional courses are not targeted enough. There are many problems, such as more theoretical courses, less practical courses, lack of engineering application courses, outdated contents of theory courses, disconnection between theory and practice, and weak combination between theory courses and practice courses and engineering applications.

The construction of the curriculum system should follow the principle of “taking social needs as the orientation, focusing on competence training, highlighting application, and combining theory”, determining the professional training objectives based on social needs, and designing core courses with comprehensive ability training. The professional knowledge has pertinence and applicability, and gradually strengthens the cultivation of students' practical ability. With the orientation of interest, excellent applied talents will be cultivated.

**Construction and Implementation of Curriculum System**

**Reverse Construction of the Curriculum System**

Colleges and universities with "application-oriented" talent training as the orientation of running schools should emphasize the characteristics of applied professional talents. This reform is guided by social needs, starting from actual work positions, deriving in reverse, and setting up courses. “Concentrated Practice Courses”, “Professional Courses”, “Professional Foundation Courses”, “Public Foundation Courses” and “Whole-Education Courses” in the system.

Firstly, the cultivation target is determined based on the industry demand, and even specific to the actual position. The centralized practice course is set according to the position. The experiment of the practice course is set based on the work of the actual position. Secondly, professional courses and professional practice courses are set according to the demand of relevant professional knowledge required by the centralized time course. The setting of professional courses is targeted to overcome the disconnection between the theory and practice of professional courses and the weak combination between theoretical courses and practical courses and engineering applications. Thirdly, the professional basic courses and public basic courses are set according to the learning needs of professional courses. Finally, set up education course according to the requirement of education.

**Applying Curriculum and Project Content with Project Practice**

Gradually strengthen the construction of practical courses in the construction of the curriculum system, reduce the theoretical curriculum, increase the proportion of practical courses, highlight the engineering application curriculum when constructing the curriculum system, highlight the application when the course content is explained, and highlight the engineering application in practice.

The training of project practice lays emphasis on the cultivation of students' practical ability, active thinking ability and teamwork awareness. Before the project starts, students select tutors and projects to be involved according to their own interests. In each engineering course team, each student selects the parts to be completed according to their interests. This fully guarantees the students' hobbies and interests and greatly exerts their enthusiasm for participation. By the team to complete the project prophase planning, personnel arrangement, software and hardware of the division of labor, the integration of system debugging, each person has their own task in the project, through the practice of the project to cultivate the students' ability to communicate with each other, such as the ability to analyze and solve problems, improve the comprehensive qualities of students.
**Adopt Progressive Course System**

In the past, the course system of communication engineering mostly adopted modular design. The study of basic courses, professional basic courses and professional courses was clearly divided, and the links between modules were loose. Many students of professional basic courses do not know the practical application value of what they have learned when they study. When they use it in professional courses and practical courses, they find that what they have learned has long been forgotten or ignored by them at that time. This is mainly because of the long time interval between specialized courses and basic courses, and the specialized courses are not targeted enough.

Adopting the progressive curriculum system, the professional basic courses and professional courses are integrated into a series, for four consecutive years, the professional basic courses and the professional courses are progressed, and the course difficulty is gradually deepened. This course system is in line with the students' ability to accept.

**Innovative Education**

The 18th CPC national congress proposed "implementing the strategy of innovation-driven development", and the fifth plenary session of the 18th CPC central committee made it more clear that "innovation must be placed at the core of national development, and innovation in theory, system, science and technology, culture and other aspects must be promoted". As the core cradle of innovative talent cultivation, colleges and universities have established the innovative education curriculum system for college students, and promoting the reform of education has become an unshirkable responsibility of colleges and universities. The cultivation of students' innovation awareness and ability has also been taken into account in the construction of the talent cultivation system for general engineering majors.

The education goal of university innovation is based on promoting education. It is centered on improving the social responsibility, innovation, entrepreneurial awareness and innovative practice of college students With the emphasis on improving the quality of application-oriented personnel training and the support of improving innovation conditions and policy guarantee, college students are equipped with basic awareness of innovation, innovative psychological quality, innovative practical ability, and strong working ability and social adaptability. In this way, the innovation ability and employment competitiveness of college students are improved comprehensively.

The reform of the communication engineering curriculum system includes innovation education course, which mainly encourages students' scientific research enthusiasm through academic innovation activities, scientific and technological competitions and innovative practice activities, creates an innovative atmosphere, and cultivates students' scientific and rigorous research attitude, innovation awareness and teamwork spirit. It will fully stimulate the creativity and innovation ability of college students.

**Conclusion**

The research on the cultivation of high quality applied talents is ultimately on the course system construction. The construction of the applied university course system should aim at cultivating applied professional talents, and on the basis of determining the overall structure of the course platform, reverse course construction method should be adopted to build the professional education course system.

The communication industry is an industry that has developed rapidly in China and has participated in international competition. The communication engineering major of local colleges and universities is the main base for cultivating applied talents in the fields of communication and related industries. The research and practice of the curriculum system determines what the training target can have. The knowledge, ability and quality determine whether the educational ideal can become an educational reality.
References


