

# Research on the Construction of Computer Major Group Curriculum System in Vocational Colleges under the Background of Information and Innovation

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**Abstract:** The construction of curriculum system is one of the key tasks in the construction of professional groups in vocational colleges. In order to better adapt to the growth of new technologies, industries, and economy, vocational colleges should vigorously carry out curriculum system construction. Improving the curriculum system construction in vocational colleges from the perspective of professional groups is an inevitable requirement for building high-level curriculum groups, an urgent requirement for building high-level professional groups, and a practical requirement for adjusting the curriculum environment in vocational colleges. The computer major is a significant component of vocational colleges, and cultivating well-rounded computer professionals is the focus of teaching activities in vocational colleges. Educational authorities and vocational institutions should focus on cultivating high-quality and skilled talents with innovative abilities to meet the needs of contemporary socio-economic growth for network information technology. This effort will not only help improve the level of education and service capabilities of vocational colleges but also promote professional technology to reach international advanced levels. Furthermore, it will lead the overall growth of Chinese vocational colleges, improve the modernization level of vocational education, and promote the transformation of vocational education from scale expansion to connotation upgrading. This article studies the construction of the computer major group course system in vocational colleges under the background of information and innovation.

## 1. Introduction

With the increasing emphasis on education and a deeper understanding of education, vocational and technical education has ushered in new developments [1]. Professional clusters have become a significant means for higher vocational education to achieve connotative, distinctive, and high-quality growth. Improving the construction of curriculum systems and optimizing the allocation of curriculum resources are key prerequisites for fully leveraging the agglomeration effect of vocational clusters [2]. The characteristic professional group is the concentrated embodiment of the characteristics and professional brand of vocational colleges, while the curriculum system is the specific manifestation and core content of talent cultivation mode. The construction of professional groups connects with the transformation, optimization, and upgrading growth layout of local industries, providing technical and skilled talents in cloud computing architecture, IoT system integration, intelligent terminal product research and growth, big data growth, and UI design for local industries [3].

Vocational colleges are schools that provide technical talents to society. In the teaching of computer majors in vocational colleges, integrating innovation and entrepreneurship teaching and constructing a reasonable innovation and entrepreneurship education curriculum system play an indispensable role in cultivating high-quality computer talents needed by society [4]. For vocational colleges, a scientific and reasonable curriculum design plan and teaching quality level are significant factors that affect teaching effectiveness, directly determining the level of talent quality and the compatibility with social actual needs. Therefore, the construction of curriculum system is the foundation of the growth of vocational colleges and a significant way to continuously deepen

teaching reform. Under the background of information and innovation, the demand for talents in society is constantly increasing. Society and the market no longer rely solely on academic qualifications to evaluate talents, but also need talents with good innovation and entrepreneurship abilities to achieve good individual growth and progress in society. Through years of teaching practice, computer teaching team teachers have found that a significant reason for this phenomenon is that there is currently no reasonable system architecture for the computer programming series courses in vocational colleges. Each course is heavily guarded and lacks necessary connections and coordination [5].

The construction of curriculum system is not only the core carrier for vocational colleges to promote the construction of professional groups in the new era, but also a significant content for cultivating high-level skilled talents [6]. Build a "platform+module" curriculum system that is suitable for industrial growth and professional group framework structure, so as to achieve comprehensive integration of human resource supply and demand structural elements, and solve the current problem of the disconnect between vocational education talent cultivation and industrial industry employment demand, as well as the contradiction between school enterprise talent supply and demand. The core of building a high-level professional group lies in reconstructing the curriculum system of the professional group. Only by reconstructing the existing professional courses can a new curriculum system be rebuilt. On the one hand, it is necessary to further promote the balance of educational resources; On the other hand, it is necessary to reform the professional curriculum system of vocational colleges, so that computer majors in vocational colleges can also cultivate practical skills in computer science through learning in vocational colleges, and enable them to better and faster integrate into China's socialist modernization construction.

## **2. The Importance and Existing Problems of Curriculum System Construction in Vocational Colleges**

### **2.1. Importance**

The new generation of information technology has penetrated into various fields of social and economic life. With the rapid growth of new technologies such as cloud computing, big data, artificial intelligence, and blockchain, there is an urgent need for a large number of new technological talents [7]. Improving the curriculum system construction in vocational colleges from the perspective of professional groups is an inevitable requirement for building high-level curriculum groups, an urgent requirement for building high-level professional groups, and a practical requirement for adjusting the curriculum environment in vocational colleges. The professional settings of vocational schools are closely related to social needs, and one of their educational goals is to provide high-quality professional and technical talents for economic growth. Therefore, with the transformation and upgrading of industries, the construction of the network technology professional group curriculum system in vocational schools is conducive to helping them dynamically adjust teaching content based on the market demand for technical talents, combined with the professional advantages of various professional schools, and explore the growth of professional characteristics, Optimize the layout structure of vocational school majors [8].

From the perspective of professional group construction, how to scientifically organize different types of knowledge within a certain professional group, optimize the structure of course content within different professional groups, and meet the different needs of different job groups for talent knowledge structure are the problems that vocational colleges need to explore in building high-level course groups. Establishing a computer network professional group in vocational schools can effectively improve students' comprehensive professional abilities and knowledge transfer abilities, thereby facilitating their understanding of knowledge. As the most closely related type of education to regional economic growth, higher vocational education urgently needs to strengthen the cultivation of students' comprehensive abilities across fields and disciplines.

## 2.2. The Problems

At present, some vocational colleges place too much emphasis on improving students' professional level in their curriculum design, but neglect general education courses or related theoretical courses. The curriculum structure is too single, which hinders students' in-depth understanding and comprehensive growth of knowledge and cannot meet the needs of society for computer technology. The teaching objectives of computer science require students to have solid theoretical knowledge and good practical skills. However, in the actual teaching process, many universities have not implemented practical applications in computer teaching, placing too much emphasis on theoretical learning and neglecting the cultivation of students' practical skills, resulting in students being unable to perform well in their future practical work [9].

Some schools have not updated their course content in a timely manner, resulting in a disconnect between students' mastery of technology and social needs. Therefore, in order to adapt to the growth of computer technology in society, many vocational schools continuously update the course content of computer network technology professional groups. However, too frequent changes can cause students to be unable to focus, increase their pressure, and ultimately result in poor teaching effectiveness. Some course teachers are unwilling to participate in course construction and are satisfied with the current situation. They believe that many textbooks currently have supporting materials such as videos or electronic courseware, which can meet the needs of teaching assistance work and do not require innovation; Some teachers believe that they have relatively shallow qualifications, lack experience in curriculum construction, and are not qualified to participate in curriculum construction work [10].

## 3. Strategies for Building a Curriculum System for Computer Majors in Higher Vocational Education

### 3.1. Building A "Platform+Module" Course System

Educational institutions and industry experts should work with the aim of integrating professional skills and adaptability into the industry chain through professional groups. Relying on intelligent manufacturing characteristic professional groups, they should establish a common "platform" course that ensures the basic specifications and comprehensive growth of professional groups. Achieving "modular" courses for different majors through the design principles of bottom-level sharing, middle level separation, and high-level mutual is crucial. On the basis of the professional group public platform courses, they should extend their respective professional module courses, as shown in Figure 1.

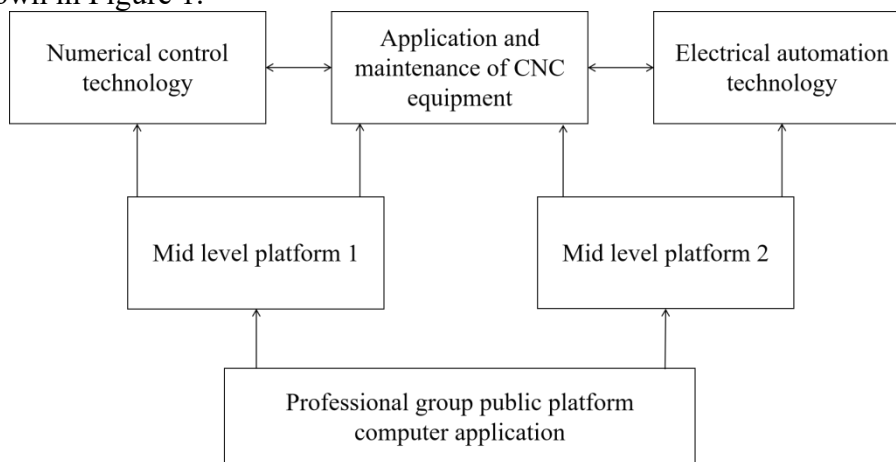


Figure 1 Professional group "platform+module" course system

Computer science is a profession that updates knowledge quickly. Through the information technology teaching model, it can provide the latest and most advanced knowledge, provide favorable ways for knowledge updates and alternation, and promote the integration, replacement,

and adjustment of course content and knowledge structure. The combination of cloud computing, intelligent terminals, and curriculum system is to design skills and knowledge learning courses related to server operation and maintenance in the mobile internet architecture through cloud computing, and to design knowledge and skills learning courses related to program growth and user experience upgrading in the context of mobile internet using terminal computing. The construction of this "platform+module" course system not only builds a compulsory course platform, but also provides students with the option to offer multi-directional elective courses based on their own abilities and employment intentions, ensuring the adaptability of teaching content and the cultivation of students' abilities. In terms of elective course design, teachers can prioritize courses such as the path to entrepreneurship and social knowledge of entrepreneurship, in order to further ensure the construction and implementation of innovation and entrepreneurship education in the curriculum system of vocational computer majors.

### 3.2. Optimization and Integration of Professional Group Resources

The new generation of information technology covers data communication, cloud computing, big data, the Internet of Things, software engineering, digital media, etc. Through deep integration with manufacturing technology, it can achieve comprehensive interconnection of people, machines, and things, overturn traditional manufacturing models, and promote the transformation and upgrading of traditional industries. Each university needs to form different types of professional groups based on the actual situation and the logic of professional groups. The grouping logic of the computer professional group is shown in Figure 2.

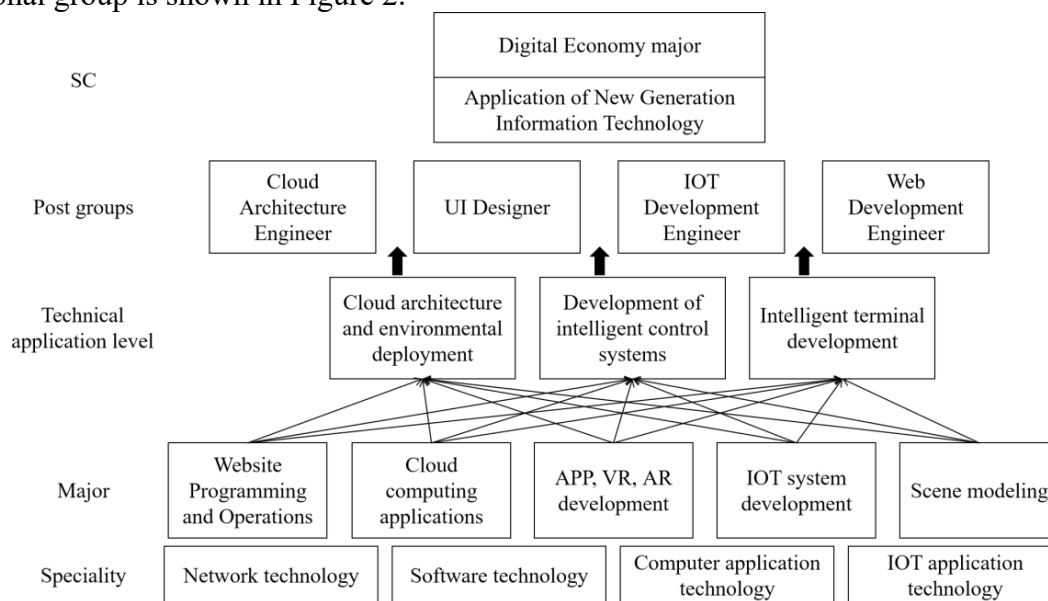


Figure 2: Grouping logic of computer professional groups

With the aim of cultivating professional skills and job adaptability in the industry chain connected to professional groups, we will strengthen the construction of high-quality online open courses and professional characteristic high-quality courses. After fully understanding the employment needs and professional skills requirements of the industry, the school should organize a team of relevant teachers in the computer network technology professional group to clarify the talent training plan. Through communication with students or collecting questionnaires, students' needs and career plans should be understood. Then, a symposium should be held between teachers and enterprise technology demand parties to jointly discuss and clarify the purpose of the curriculum system and teaching details. Education administrators and faculty members should integrate the existing practical teaching resources of the school and combine scattered experimental and training resources into professional training bases. Additionally, they should work on building a new on-campus training base that integrates school-enterprise collaboration and shares resources within the learning industry. Quality education requires students to achieve comprehensive growth.

Therefore, when constructing a curriculum system for innovation and entrepreneurship education in vocational computer science, teachers should not only integrate this concept into computer teaching, but also integrate it into other curriculum systems. Through this approach, students can achieve a subtle effect and thus achieve more comprehensive growth.

#### **4. Conclusions**

With the deeper integration of network applications and various industries, the updating and growth speed of information technology is getting faster and faster. This requires vocational colleges to combine the actual needs of society and update teaching methods in a timely manner to adapt to the changes of the times. Therefore, establishing and improving the computer major group course system is of great significance. The growth of Internet intelligent technology is a higher level test for the curriculum arrangement of computer majors in vocational colleges, and it also plays a significant role in improving the comprehensive skills of vocational college students. As a systematic project involving multiple stakeholders and multiple elements, the construction of the curriculum system in vocational colleges is difficult to achieve solely relying on the efforts of vocational colleges and individual teachers. The curriculum system and teaching content of the computer major group urgently need to be reformed and upgraded. Vocational colleges can implement moral education, focus on regional economic growth, focus on the talent needs of the new generation of information technology SC, emphasize the integration of academic education and vocational education, and guide curriculum reform and upgrading through the integration of course certificates, in order to create a distinctive and high-level professional group curriculum system. Establishing awareness of the significance of new media network technology, emphasizing cooperation between universities and various business organizations, as well as exploring and summarizing market growth laws, is necessary to make the course arrangement more suitable for students' self-growth and school talent cultivation planning, meet the demand for comprehensive talents in the national growth process, and promote the improvement of the country's comprehensive national strength.

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