



Construction of Teaching Innovation Teams in Higher Vocational Colleges--Taking Information Communication Technology and Application Majors as an Example

Jingjing Wang

Hainan Technology and Business College, Haikou, China

Email: tg667788@xzcstudio.com

Abstract. In order to improve the quality and level of teaching, higher vocational colleges must build a high-quality faculty team. However, currently there are still some problems in the construction of faculty teams in some higher vocational colleges. In view of this situation, this paper, from set out actually, to the construction of information communication technology and application professional group, an example from multiple angles of higher vocational college teachers teaching innovation team construction, puts forward the university-enterprise cooperation as the core, innovative teaching content, create training base strategy, in order to higher vocational and technical college of teachers' teaching innovation team construction.

Keywords: Higher vocational colleges; Information communication technology and application majors; Teaching team construction.

1 Introduction

The Ministry of Education has clearly stated in the "National Vocational College Teacher Teaching Innovation Team Construction Plan" that a planned and step-by-step approach should be taken to build a group of teaching innovation teams that cover the main majors (groups), lead educational and teaching mode reform and innovation, and promote the continuous improvement of the quality of talent training. Information communication technology and application majors cover the most cutting-edge science and technology, and strengthening the construction of teaching teams in this major is of great significance for improving teaching quality and the future development of students.

2 The necessity of strengthening the construction of teaching innovation teams in higher vocational colleges

2.1 It is conducive to deepening the implementation of the "Three-Education" reform

For higher vocational education, the key to its development is to gradually promote the reform of teachers, textbooks, and teaching methods. The relationship between teachers, textbooks, and teaching methods is closely related, and teachers are the actors of educational reform. Therefore, it plays a crucial role in the reform of the "Three-Education". The reform of the "Three-Education" is a sustainable development system engineering, and the establishment of teaching innovation teams can lay a solid foundation for the development of this process [1].

2.2 It is conducive to the construction of "dual-qualified" faculty teams

The lack of "dual-qualified" faculty is also an important reason that restricts the high-quality development of higher vocational colleges. Under the guidance of the high-quality development concept, the technological innovation in various industries in China is accelerating, and "Internet + teaching" has become an important way of classroom teaching in higher vocational colleges [2]. The construction of teaching innovation teams can optimize the structure of the teaching team, enhance communication and exchange between teachers and external society, enable teachers to timely understand the development trends of industries and enterprises, and provide better vocational skill teaching and guidance for students.

3 Measures for the Construction of Teaching Innovation Team

3.1 Strengthen the organic combination of teaching and enterprise projects and innovate teaching content

Firstly, make teachers become project managers and students become system integration engineers, network maintenance and optimization engineers, and software engineers. Secondly, systematically design curriculum reform. Select courses related to engineering practice, carry out teaching method and curriculum reform, and track and summarize their effects, ultimately forming a dynamic classroom teaching model. Thirdly, (see Figure 1) through school-enterprise cooperation, based on projects, and in a project-based manner, solve the problem of the disconnect between traditional teaching methods and practice by compiling work manuals, and make appropriate revisions to the teaching content every two years to ensure that the teaching content can be dynamically updated with the development of information technology and the upgrading of industries [3].

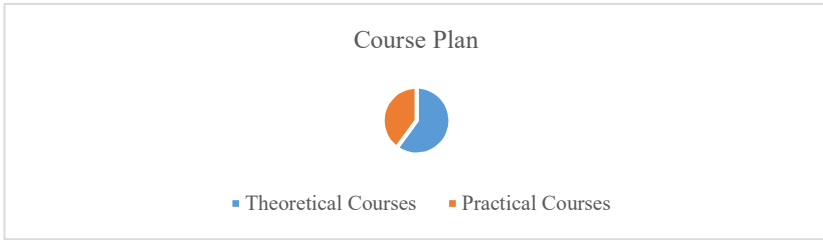


Fig. 1. ICT and Application Professional Group Curriculum Planning

3.2 Building a Professional Group Training Base Based on Collaborative Innovation Concept

The communication network comprises four backbone networks: data, switching, transmission, and mobile. Considering the division of labor in the communication industry and the existing equipment or systems of enterprises, when building a "whole process and whole network" shared training platform, we emphasize collaboration and strive to create a practical operating platform that meets industry requirements (see Figure 2) [4].

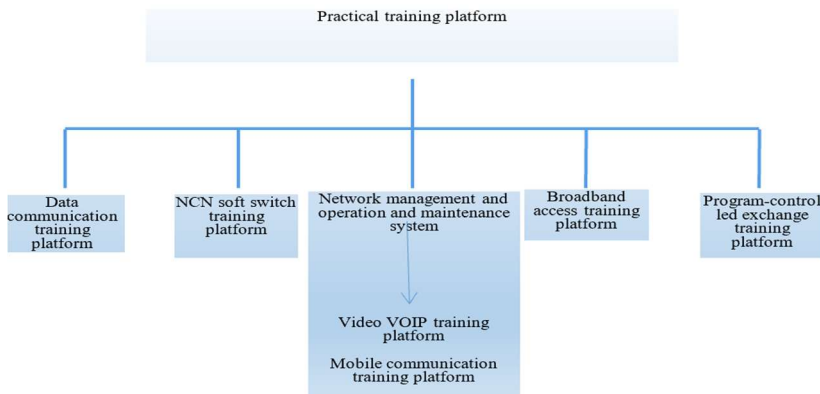


Fig. 2. Training platform

3.3 Develop school-enterprise mutual dispatch plans and build a teaching team with vocational education communication

Building a teaching team with vocational education communication composed of leading talents, technical experts, and backbone teachers as shown in Figure 3.

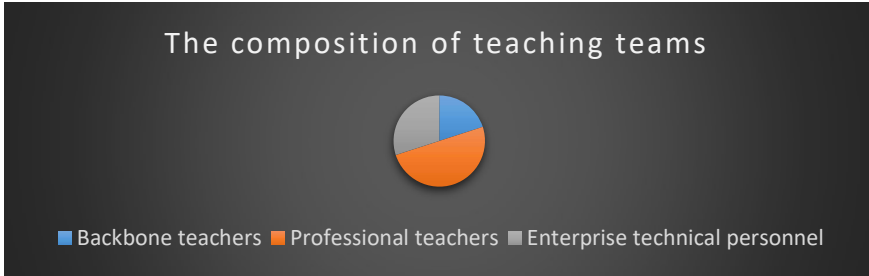


Fig. 3. The composition of teaching teams

4 Reform the practical training content of professional groups

To project "5G base station construction and maintenance", for example, the teacher needs to have "double" qualification, understand the trend of industry development, familiar with the "1 + X" professional qualification certificate, in training to lead students from the survey, installation, testing, open business and maintenance business perspective, train system learning, and training software for field [5]. For this simulation project, the practical training contents mainly include are as follows:

4.1 Three major application scenarios of 5G

4.1.1 The eMBB (enhanced mobile bandwidth) scenario

4.1.2 mMTC (mass machine communication) scenario

4.1.3 uRLLC (ultra-high reliable and low latency) scenario

4.2 The network architecture of the 5G system

4.2.1 The 5G network architecture

4.2.2 The deployment mode of the 5G network

4.2.3 The internal structure of the 5G base station

4.3 5G base station equipment installation

4.3.1 Draw the hardware architecture diagram of the 5G base station.

The hardware diagram mainly includes indoor cabinet, 5 GBU, 5G AAU (macro station), 5 GAAU (micro-station), 5 G cable, etc.

4.3.2 Engineering survey of 5G base station.

Mainly let the students understand the process of engineering investigation, the key points of environmental investigation and 5G base station investigation.

4.3.3 Inventory of 5G base station equipment.

It mainly includes the unpacking inspection process and precautions, preparation of unpacking tools, unpacking, inventory and inspection of goods, goods stacking, shortage and handling of damaged goods.

4.3.4 5G base station equipment installation.

It mainly includes installation preparation, installation of base station, installation of GPS antenna, installation of macro station AAU, installation of micro-station AAU, installation inspection, etc.

4.3.5 Cable cloth put.

Mainly for students to master the classification of cables, cabinet cable laying method, cable laying process requirements, cable binding process requirements, cable label specification, label paste, etc.

4.4 5G base station test

4.4.1 5G base station equipment on the power system.

Let the students master the cabinet power, BBU power and AAU power.

4.4.2 The 5G hardware test.

Let the students master the base station hardware function test, power drop test, restart test and transmission terminal test.

4.4.2 5G base station component replacement.

Let the students master to replace 5G BBU, replace 5G BBU single board, replace 5G base station optical module, replace 5 G AAU and cable, etc.

4.5 5G equipment acceptance

4.6 Opening of 5G base station service

4.6.1 5G network management cognition.

Let students master the base station architecture of 5G network management, the hardware and hardware composition of 5G network management and the functional components of 5G network management.

4.6.2 Data configuration of the 5G base station.

Let the students master the basic process of 5G base station data configuration, including SA data configuration and NSA data configuration.

4.7 Maintenance of 5G base station

4.7.1 Maintenance information collection of 5G base station

Let the students master the 5G base station equipment information collection, version information collection, module replacement information collection, cable replacement information collection, etc.

4.7.2 Routine maintenance.

Let students master maintenance tools in software and be able to maintain BBU and AAU.

The whole simulation project is consistent with the current network. After learning, students can not only take the "1 + X" professional qualification certificate examination. Other projects in the professional group should be carried out the reform of practical training content in accordance with this standard, which requires an innovative teaching team as support.

5 Conclusion

This article takes the construction of the information and communication technology and application professional group as an example and proposes a series of optimization measures based on the current situation of the teaching innovation team construction in vocational colleges. It is hoped that through these measures, the quality of teaching in vocational colleges can be improved and the influence of the professional group can be expanded.

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