Exploration on Computer Network Technology Teaching in Higher Vocational Colleges

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Keywords: Higher Vocational College; Computer Network Technology; Improvement Strategies

Abstract: Under the background of information age, many domestic higher vocational colleges have set up Computer Network Technology major, which aims to cultivate high-end technical talents to meet the development requirements of this era. Therefore, this paper discusses the teaching contents, characteristics and objectives of Computer Network Technology in higher vocational colleges. It's also analyses various problems existing in the teaching process of Computer Network Technology in higher vocational colleges and puts forward relevant improvement strategies.

Introduction

The further development of computer network technology provides diversified information resources and huge developing opportunities for competitors from various industries, which also increases the demand for computer network technical talents. The establishment of Computer Network Technology major is a significant sign of conforming to the development of this times. In the teaching process, taking teaching objectives as the core, gradually improving the teaching mode of Computer Network Technology major has practical significance for improving teaching quality and students' practical skills.

The Teaching Content of Computer Network Technology in Higher Vocational Colleges

Computer Network Technology is a comprehensive and professional subject. The main content covers Network Basic Training, Network Management Training, Network Application Training and Network Security Training.

Among them, the core objective of Network Basic Training is to enhance the ability of autonomous networking by guiding students to build small home networks. For example, broadband connection to the Internet, router shared Internet access and so on; the core objective of Network Management Training is to improve the ability of network data collection, integration processing and analysis through skilled application of network software, and then effectively solve the problems in production and life; the core goal of Network Application Training is to cultivate students 'ability to apply basic network knowledge; the purpose of Network Security Training is to cultivate students' practical skills in network security monitoring, network vulnerability repair, and network virus defense.

The Teaching Characteristics and Objectives of Computer Network Technology in Higher Vocational Colleges

With the widespread of the Internet and the rapid development of telecommunication technology, computer network technology is wildly used to various industries and becomes the core driven force of promoting economic development and scientific and technological progress. Computer network technology has many characteristics, such as extensive coverage, miscellaneous theoretical concepts and outstanding practical performance. It is precisely because of these basic characteristics that the degree of difficulty in professional teaching is increased to a certain extent.

Computer network technology is the binding product of telecommunication technology and information technology. Based on the comprehensive and efficient features of computer functions, network technology has become an important medium of long-distance communication, breaking through the limitation of time and space, and promoting the information interaction and resource sharing of social individuals.

As computer network technology is widely involved, so it further expands the application scope and fully meets the development requirements of the new era. In the 21st century, the whole society is gradually becoming networked, informationized, and digitized. Computer network technology has been expanded and applied to all aspects of production and life, which has greatly improved efficiency.

As the cradle of cultivating high-quality technical talents, higher vocational colleges should take the training of computer network technology application talents as the core development goal. Computer network technology is highly practical and requires students to improve their practical skills based on a comprehensive grasp of theoretical knowledge, especially networking and security defense technologies. In the daily teaching process, through step-by-step theoretical reserves and practical accumulation, students' core professional literacy is strengthened.

With the development of the times and the advancement of science and technology, the demand for computer network technical talents has further expanded. For this reason, various higher vocational colleges have listed computer network technology as a compulsory course, and have increased the special investment to improve the quality of talent cultivation and meet the needs of the times.

The core goal of setting up Computer Network Technology major in higher vocational colleges is to enable students to master solid theoretical knowledge of computer network technology, to gradually inspire students' thinking, and to use the accumulated theoretical knowledge flexibly. Higher vocational colleges must establish complete computer network management system, carry out computer system security maintenance work, and effectively solve problems in production and life. Before explaining computer operation technology, schools should carry out theoretical knowledge teaching in advance, so that students can fully understand the origin, development history and application of computer network technology. On this basis, schools organize a variety of practical training activities. All in all, higher vocational colleges need to draw up scientific and feasible teaching plans and train application-oriented talents of computer network technology to meet the needs of social development for high-quality talents and promote the prosperity and development of market economy.

Problems in Teaching of Computer Network Technology in Higher Vocational Colleges

At present, although the practical teaching work of Computer Network Technology major in higher vocational colleges has achieved remarkable results, there are still many outstanding problems that need to be solved urgently. These problems are embodied in the following aspects: backward teaching concept, single teaching mode, insufficient special investment, imperfect hardware facilities configuration, and inadequate teaching management. They will be discussed in details below.

Backward teaching concept. The development of computer network technology in China is relatively late, and the popularity of computer network technology in higher vocational colleges is far from that of western developed countries. Most of the teachers of computer network technology major in higher vocational colleges are backward in their ideas. They still use the traditional teaching mode in the actual teaching work, pay attention to one-way theoretical knowledge and forced indoctrination, and pay little attention to practical skills training. If such a teaching mode is simply adopted, the overall teaching effect can be imagined. For the teaching of computer network technology specialty, theoretical knowledge infusion can help students lay a solid foundation, but practical skills training is more important. Only by taking into account both theoretical infusion and practical guidance can we ensure that students master computer network technology and thus meet the needs of industry development.

Single teaching mode. Affected by the traditional teaching model, the computer network technology teaching in vocational colleges still follows the teacher-centered model. In the process of practical teaching, unidirectional and compulsory indoctrination is often adopted. Students just passively accept knowledge, let alone deep thinking and self-experience. As time passes, this greatly weakens the enthusiasm of students to participate in the interaction, at the same time, it also limits students' creative ability, and even leads to students' weariness of learning. This singular teaching mode cannot enhance the effect of theoretical teaching. For computer network technology majors that emphasize practical skills, it cannot guarantee teaching efficiency. If the students' practical operation ability of computer network technology is insufficient, they will find that their theoretical knowledge cannot be flexibly applied to practical work, and cannot meet the needs of enterprises for high-quality skilled talents. Students growing up in this teaching mode will face the fierce talent competition and make them completely at a disadvantage. They will be marginalized by the talent market, and fall into the awkward situation of not finding a job.

Insufficient special investment. Nowadays, the lack of investment is also a problem in the teaching of computer network technology in higher vocational colleges. The network equipment of most vocational colleges has a long service life, the daily maintenance is not in place and the performance is degraded, which make it not meet the teaching needs. Meanwhile, due to the lack of special support funds, the speed of equipment renewal is slow, which is out of line with the development of modern teaching. Due to the limitation of teaching equipment, in the process of lecture teaching, teachers are often unable to display teaching content in three dimensions, which greatly reduces the quality of teaching.

Inadequate teaching management. In addition to objectivity issues such as teaching concepts, teaching models, and investment in teaching, there are also problems of incomplete, irrational, and non-standard management in the teaching of computer network technology in higher vocational colleges. Generally speaking, most vocational college students have relatively weak cultural foundations and poor self-discipline ability. As a result, in terms of theoretical indoctrination and practical guidance, there are generally situations such as fixed thinking, one-sided understanding and inattention. If the teachers cannot manage students strictly, this will lead to low classroom teaching efficiency and has imperfect overall teaching effect. At present, the most higher vocational colleges lack a perfect management system, as well as humanized classroom behavior constraints management regulations, making students ignore classroom discipline, which greatly reduces the quality of teaching.

Specific Strategies to Improve the Teaching Level of Computer Network Technology in Higher Vocational Colleges

Improve hardware facilities configuration. One of the important reasons for the derailment of computer network technology teaching in higher vocational colleges is the lack of investment and the limited special support funds. The flexibility of computer network technology is embodied in the organic integration of theory and practice. However, throughout the development of the current situation, some vocational colleges have not been equipped with perfect teaching equipment, such as network training room, laboratory and so on. The imperfect configuration of infrastructure makes teaching work rely on teaching materials and lack of practical training.

“Real knowledge results from practice. ”Without complete hardware facilities, students cannot be assured of mastering computer application technology. For this reason, to improve the teaching quality of computer network technology majors, all vocational colleges should further improve the configuration of hardware facilities and create a high-quality learning environment for students. Laboratory and hardware facilities are the necessary conditions to carry out the practice of computer network technology, and simulation laboratory and virtual laboratory are also the fundamental guarantee to carry out the practice of computer network technology. Therefore, higher vocational colleges should increase special investment, establish laboratories, improve hardware facilities,

optimize teaching conditions, so as to promote the organic integration of theoretical education and practical guidance, and cultivate high-quality skilled talents.

Change teaching concept, improve teaching means and strengthen teaching management. Aspiration is the driving force of action. In order to fundamentally improve the current situation of computer network technology teaching, it is necessary to change the teaching concept, optimize the teaching methods and strengthen the teaching management from the grassroots educators. For example, some teachers are deeply rooted in the idea of "emphasizing theory but neglecting practice". They only focus on consolidating the foundation, superficially think that practical skills are acquired in practical work and lack of attention to practical skills guidance. Obviously, it is quite wrong. Mastering theoretical knowledge is the key content of strengthening students' professional quality of computer network technology, but it does not mean that practical operation skills are not important. If the students have solid theoretical knowledge and no practical skills, they will lose the ability of post competition.

What's more, the limitations of teachers' ideology have greatly restricted the innovation of teaching methods and weakened the management functions of teachers. This is also the root cause of the low teaching efficiency of computer network technology major in higher vocational colleges. In this regard, higher vocational colleges should start from the upper leadership team, deepen their understanding of the computer network technology specialty, strengthen teaching management, and promote the reform of the teaching system.

For example, establishing a perfect teaching management system of computer network technology to guide students to study purposefully, organizationally and strategically, urge students to review, which constantly improve students' professional level. Or higher vocational colleges can also carry out computer network technology professional teaching seminars from top to bottom, and adjust the teaching mode of computer network technology combining the characteristics of disciplines and students. For example, using multimedia tools makes abstract things concrete, makes complex things simple. It is easy for students to understand, and reduces the psychological pressure; fully implement task-based teaching mode, enhance students' self-awareness, and promote the integration of multi-disciplinary, expand the knowledge, in order to create a relaxed and pleasant learning atmosphere for students. Fully implementing the task-based teaching model is good to enhance students' self-cognition ability, and promotes the integration of multi-disciplines, expands the knowledge, creating a relaxed and pleasant learning atmosphere for students.

Increase attention and investment in practical teaching. Establish professional training room. Take a vocational college as an example. There were only some public teaching rooms and a few electronic network equipment in the school, which could not meet the teaching needs of computer network technology specialty, resulting in the low level of students' practical operation skills. After reporting this situation to the superior departments, the school leaders attached great importance to it, and started to set up comprehensive wiring training room and network engineering training room in succession, which greatly improved the teaching environment of computer network technology specialty.

The comprehensive wiring training room system is the main site of simulation exercise of computer network technology major, including technology subsystem, management subsystem, equipment subsystem, horizontal subsystem and vertical subsystem. The coordination of each subsystem is helpful to train students' engineering design ability and optimize the practical operation level.

The network engineering training room is equipped with 7 groups of network training platforms, which include 2 access switches, 2 three-layer switches, 2 multi-service routers, 1 wireless router, 1 firewall and 1 management equipment. At the same time, each group is equipped with an independent cabinet, which provides convenient conditions for the experiment. In short, establishing professional training room can improve the teaching conditions of computer network technology major to a large extent, consolidate the theoretical basis of students, cultivate their practical operation skills, and enhance their post adaptability.

Promote the organic integration of theory and practice. Combined with the characteristics of computer network technology course, the theory module and practice module are integrated into the training room to form an integrated system of teaching and research. On the basis of theoretical teaching, the network structure, transmission medium, hardware facilities and topology structure are observed to improve teaching efficiency and enhance the overall effect. According to the stage teaching objectives, the training items are designed according to the order from simple to difficult, the training hours are adjusted, the practical operation ability of students is cultivated step by step, and the core professional quality of students is improved.

Summary

In summary, the teaching work of Computer Network Technology major in higher vocational colleges should keep pace with the needs of the development of modern society, which is the core goal of computer network technology teaching in higher vocational colleges. Teachers should master the characteristics of computer network technology, optimize teaching methods, and help students to lay a solid theoretical foundation while improving their practical skills in order to promote the all-round development of students.

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