

Discussion on the Application of Virtual Technology in Computer Teaching in Higher Vocational Colleges

Liang Qian

Jingzhou Institute of Technology, Jingzhou, Hubei, 434100, China

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Abstract: Virtual technology as a new type technology with the continuous development of science and information technology is capable of virtualizing one computer into multiple logical computers, and extending initially simple server functions into multi-functional Desktop applications. This paper mainly analyzes and discusses the application of virtual technology in computer teaching in higher vocational colleges, hoping to introduce the application value of virtual technology to more people.

Introduction

Application of virtual technology to computer teaching in higher vocational colleges can realize parallel of multiple operating systems on a single physical machine, accelerate the information transmission speed with small the damage to physical machines. Through application of virtual technology, the problems existing in traditional computer teaching can be solved and students' computer competence can be improved.

Problems Existing In Higher Vocational College Computer Teaching

Computer model lacks uniformity. Higher vocational colleges have the problem of using old and new computer and other infrastructure with non-unified configuration, which is mainly because it is not possible to update all existing computer equipment due to capital limitation at the time of computer replacement and upgrading and only a part of the computer can be replaced according to the funding situation. In the end, the new and old computers are used at the same time and computer models cannot be unified. In addition to the fast update speed, new computers with more functions are difficult for unified management. Errors in actual operation that cannot be solved timely have prevented computer teaching activities to be carried out in higher vocational colleges.

Quantity of computer is not sufficient. With the increasing enrollment number in higher vocational colleges reform of education and teaching, limited by the teaching conditions of higher vocational colleges, it is impossible to build more computer classrooms so that the existing number of computers cannot meet the increasing demand for enrollment. In addition, with the increasing number of students, computer science has become more and more important. Under the limited computer teaching conditions, schools have to complete teaching tasks by reducing the time for computer practical teaching, which greatly hindered students to acquire computer skills and seriously reduced the quality of computer teaching.

It is difficult to carry out some subjects. According to the analysis of current computer teaching activities in higher vocational colleges, it can be seen that computer teaching mostly focuses on computer technology teaching, such as software programming teaching, which attaches little importance to knowledge instruction of computer installation, setup, and maintenance. Most are theoretical teaching rather than practice. Thus, the development of teaching activities in some subjects is limited so that students can only operate software facilities without a comprehensive knowledge of hardware equipment, which can be attributed to follow reasons:

Schools with the concern that students damage the computer during practical training set passwords and protection cards on the computer so as to limit students' installation and setting of

software and a lot of teaching contents cannot be effectively implemented. In maintenance teaching, to avoid students' operation from damaging computer, some schools limit the maintenance knowledge explanation to theoretical knowledge, which can hardly help students to completely understand the computer structure and thus reduce knowledge learning efficiency. Some schools under the limitation of experimental teaching conditions cannot carry out some practical activities and can only complete teaching goal by instructing textbook knowledge. But professional knowledge is too hard and obscure for students to comprehend and memorize firmly.

Virtual Technology

Virtual technology as an effective information technology that can achieve resource reasonable configuration in computer science by supporting the joint operation of multiple computers in the same environment through the scientific division of CPU, memory, and disk space. The application of virtual technology in computers has broken the barriers to the physical structure of computers by scientifically and reasonably dividing the computer physical resources for better utilization of computer effect and function, thereby enhancing computer operating efficiency.

At current stage, China at the development phase of virtual technology research and development is witnessing the maturity of virtual technology with the advancement of science and technology. Virtual technology has been widely used in various fields, laying solid foundation for optimizing allocation of resources, improving resource utilization rate and enhancing work efficiency. Virtual technology can provide guarantees for realizing virtual reality and provide strong technological support for the development and transformation of our society by simulating real scenarios in practical applications with the support of multiple technologies and equipment, such as computer servers and operating system.

Virtual technology originated in the 1970s has been the public concern as a new technology. With the improvement of economic technology, virtual technology has developed rapidly and earned widespread application in many fields at present. Virtual technology can realize the simulation of computers by applying virtual software and create a good computer operating environment so that users can operate and understand computer software and hardware in a virtual space, and complete simulation operations such as installation and maintenance. This has played a very promoting role for higher vocational college computer teaching. Schools do not need to worry about teaching conditions or insufficient capital. By simulating environment by virtual technology, the teaching effect of some subjects can be achieved and various problems in previous theoretical teaching can be avoided to strengthen computer teaching effect.

Advantages of Virtual Technology In Higher Vocational College Computer Teaching

Maintain operation simplification. It requires each student to be equipped with a computer in computer teaching activities of higher vocational colleges and to ensure the computer with an independent operation and operating system. Relevant software and hardware facilities must also be complete to reduce the influence of adverse factors on the computer. By applying virtual technology, computer unified management and maintenance can be realized. In that case, once a computer breaks down, other computers will not be affected while guaranteeing computer operating efficiency, thus greatly reducing maintenance difficulty, and strengthening maintenance convenience.

At present, computer series connection is common in many vocational colleges with certain effect on each other so that any fault will lead to the non-use of computer classroom and cause large cost consumption during maintenance. Independent setting of the computer and application of the virtual technology can help to solve the problem of mutual influence in computer operation and reduce maintenance cost. Therefore, schools should purchase computers with strong independence or set up corresponding virtual technology in future computer teaching to guarantee independent operation of each computer and reduce unnecessary operations.

Reduce cost loss. In the information age, with the increasing demand for computer talents in the society, higher vocational colleges are gradually using computer majors as core content for cultivating more professional talents to meet social development needs. However, while strengthening training, schools will inevitably purchase more computers and build computer classrooms, which will undoubtedly increase costs and lead to large cost expenditures. In view of this, higher vocational colleges can strengthen the virtual network security of existing teaching equipment by reasonably applying virtual technology and creating a virtual teaching environment to meet the requirements of teaching assignments, reduce fund investment, and enhance teaching quality. At the same time, the saved capital can be used for innovating and developing virtual technology for improving technological level of colleges and universities, providing guarantee for improving computer teaching quality, and achieving the goal of computer talent cultivation.

It can be seen that applying virtual technology in higher vocational college computer teaching can help to reduce teaching input cost and save more economic benefits, which will greatly promote the development of higher vocational colleges. At the same time, applying virtual technology can help to create a good learning environment for students, reduce previous teaching problems and strengthen students' computer skills, and facilitate the effective implementation of teaching activities. Besides, virtual technology can lower the times of computer maintenance to a certain degree and facilitate schools to carry out management work.

Practical Application of Virtual Technology In Higher Vocational College Computer Teaching

To solve problems described above, it is necessary to strengthen the application of virtual technology in higher vocational college computer teaching, and integrate virtual technology with computer teaching through reasonable methods to enhance teaching level and promote to improve students' comprehensive capabilities.

Computer maintenance experiment. Computer maintenance teaching contents include computer system formatting, reinstallation, software download, and system partitioning. Too many operation contents and repeated operations will greatly damage the computer, shorten computer service life, and reduce operating efficiency. To remit the damage caused by teaching practice activities to the computer, it is feasible to set up virtual scenarios by virtual technology so that students can complete relevant computer maintenance operation steps in the virtual scene without affecting computer software and hardware, and it can improve computer utilization rate. The specific working principle is as follows: form a relatively independent virtual space by installing a virtual machine in the computer, and realize the isolated operation from the original system. By doing so, any operation procedure in the virtual space will not influence the system, and it is easy for recycling after completing the operation.

Virtualization operating system experiment. Virtual machine characterized by strong independence can be applied in computer teaching to separate a complete virtual space and simulate the specific situation of the computer so that students can independently complete operating control of the computer and maintain computer security. In addition, virtual machine installed in the hard disk drive, CMOS and operating system can simulate the computer hard disk and memory, thus making the operating environment more real and providing guarantee for some practical courses that originally cannot be provided. For example, when implementing a folding experiment in a virtual system, even accidental deletion of some software during the operation will not affect the real computer system. During post-processing, the functions of the virtual system can be restored only by performing resetting operation, which can greatly enhance teaching efficiency and improve computer utilization rate.

Virtualization of network security. Applying virtual technology in computer teaching can strengthen security protection of computer networks, construct a safe network environment space, and reduce risks. Setting secure access permissions at the time of data and programs visit for encrypted storage of file information can avoid the impact of virus attacks on the computer and internal data and improve its security. At the same time, compared to computer repurchasing, reformation operation can

be completed by installing related software inside the computer can complete through the application of virtual technology, which can greatly reduce the cost loss and save more capital expenditure.

Virtualization application of network security Network security is regarded as an important content in teaching activities. In previous computer teaching activities of higher vocational colleges, most learning goals were achieved by instructing theoretical knowledge without too many practical operation activities out of the concern that students may cause network security problems due to improper operation and damage computers. After adopting virtual technology, above problems can be solved to deepen students' mastery and understanding of network security knowledge. With the support of virtual technology, students can be provided with a virtual operating environment so as to boldly carry out corresponding practical operations while learning theoretical knowledge. While carrying out practical teaching activities, schools do not need to worry about capital cost as virtual technology has greatly reduced the capital loss and the difficulty of computer repair and maintenance, increased the use frequency of computer classrooms, and supported students to enhance their ability.

In addition, teachers should combine the technical characteristics, reasonably design teaching content, perfect teaching design, and promote the smooth implementation of teaching activities. For example, when applying virtual technology, teachers can apply VMware Workstation to computer teaching content setting according to the requirements of teaching goals, guarantee the teaching content to be efficiently implemented and solve problems of multiple machines, multiple operating systems, and multiple experimental environments in previous teaching. VMware Workstation is mainly used to realize experimental teaching environment setting and promote the practical activities to be carried out.

Measures To Improve Higher Vocational College Computer Teaching Effect

Strengthen classroom interaction effect. Computer teaching is to realize the core goal of improving students' skill level by carrying out practical teaching activities. So, it is necessary to set interactive teaching content in the teaching process according to the characteristics of virtual technology, mobilize students to participate so that they can acquire the main points of the knowledge in interactive communication and discuss the existing problems. Teachers can provide guidance to students' practical training in combination with theoretical knowledge to improve students' skills. In actual teaching activities, teachers can demonstrate or students can operate by themselves with no worry about damaging the computer system. In addition, in practical training activities, teachers should focus on observing the students' operation, and correct the problem timely to avoid accidents.

Complete teaching summary. It is necessary to carry out summary work in computer teaching to clarify teaching achievements, which plays an important role in improving teaching models. In the summary process, teachers can allow students to participate, and ask students to independently summarize learning results of the previous stage by group discussion, and to discuss and analyze the existing questions, propose their own opinions so as to complete teaching reform. In addition to self-summary, teachers should sort out students' discussion results and provide reliable support for next-stage teaching activities.

Summary

Application of virtual technology in higher vocational college computer teaching has not only innovated the teaching mode and teaching concept, but also reduced the cost of computer teaching, created a good practice environment for students on the basis of improving teaching quality, and made contributions to enhancing students' comprehensive capabilities.

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