Exploration and Practice of Deep Integration of Virtual Simulation Technology and Innovative Entrepreneurship Education

Li Zhang, Long Yin, Liucheng Zhang, Li Zhao
Harbin University of Commerce, Harbin 150028, China

Keywords: Virtual Simulation, Innovative Entrepreneurship Education, Integration.

Abstract. With the rapid development of information technology in our country, the application of information technology in the field of education and teaching is deepening. The application of virtual simulation technology in experiment teaching conforms to the development trend of information technology in education.Students can carry out independent experiment in open and interactive virtual environment, which is beneficial to the improvement of practical ability and innovation ability. Based on the combination of virtual simulation technology and innovation and entrepreneurship education, this paper puts forward that virtual simulation technology can build practical platform for innovation and entrepreneurship education. Taking the construction of modern enterprise business virtual simulation center as an example, this paper analyzes the integration of virtual simulation teaching in the experimental teaching courses, practical training, cross-professional comprehensive practice, innovation and entrepreneurship activities.

Introduction

The 21st century is "the era of innovation and entrepreneurship education". Higher education should conform to the characteristics of the development of the times, and focus the educational reform on students' practical ability and innovation and entrepreneurial ability. Deepening the reform of innovation and entrepreneurship education in colleges and universities, that is to adapt to the needs of national innovation-driven development strategy, not only conducive to promoting economic upgrading and upgrading, but also conducive to promoting comprehensive reform of higher education, and promote college graduates entrepreneurship, employment. It is necessary to strengthen the practice teaching in colleges and universities, but the practice teaching in colleges and universities is still the weak link in the cultivation of talents. Therefore, we should attach great importance to the practice teaching construction and reform practice teaching method, practice teaching informatization.

Under the guidance of the national informationization development strategy, the pace of higher education and information technology fusion has been accelerated, and the innovation of personnel training mode has been realized. The application of virtual simulation technology in practice teaching conforms to the development trend and practical needs of educational informationization, so that students can carry out independent experiment in open and interactive virtual environment, which is helpful to enhance students' practical ability and innovation and entrepreneurial ability.

Virtual simulation technology and innovative entrepreneurship education

Virtual simulation technology. With the rapid development of network and computer technology, virtual simulation technology is gradually mature and perfect. Virtual simulation technology is based on communication, network, multimedia, human-computer interaction, virtual reality and other technologies. Virtual simulation technology, using the simulation method in virtual environment is in order to enhance the feelings of the real environment.

It has the following four basic characteristics: the user feel in the real virtual world, access to visual, auditory, tactile and motor sensation, etc., and then produce immersive feelings; Second, interactive, refers to the nature of the interaction, that is, the operability of the object in the virtual environment and the real-time feedback. The user can control the environment with near-natural behavior, and the

virtual simulation system can also give real-time response to the user's operation; Third, the illusory, virtual simulation system is designed by the designer with his creativity, which can not only simulate the objective reality of the environment, can also be simulated in the objective world which does not exist but may occur in the future environment; Fourth, the realistic, the virtual environment gives the user a feeling similar to the objective world, when the user interacts with the virtual environment, the feedback is also consistent with the general laws of the objective world.

In the application of virtual simulation technology to experimental teaching, designers can use a variety of technical means to build a virtual experimental teaching environment for teaching resources and experience background. In this virtual environment, the students can feel the real reality of the scene, real feedback, and real-time interaction can be realized, students continue to form a scientific point of view and insights from the virtual environment to obtain knowledge and skills to promote the construction of its knowledge system, which improves teaching effect.

Innovation and entrepreneurship education. At the beginning of the twentieth century, economist Schumpeter put forward the theory of innovation, which argues that economic development stems from innovation. Innovation and entrepreneurship education ideas originated from Schumpeter's innovation theory. The United States is the first country to carry out innovative entrepreneurship education, its innovative entrepreneurship education began in 1947 Harvard University. The United States has the entrepreneurial education into the entire national education system, which covers the whole process from primary school to graduate education.

In the United States colleges and universities are generally opened innovation and entrepreneurship education courses, college students innovation and entrepreneurship education is regarded as the "direct driving force" of national economic development. China's innovation and entrepreneurship education began in 1999 in Qinghua University organized the first venture plan contest. With the joint efforts of the government and universities, innovation and entrepreneurship education has been rapid development.

Virtual simulation technology provides a platform for innovation and entrepreneurship education. Practice teaching is a very important part in the process of cultivating students' practical ability and innovation ability. However, the practice of education in colleges and universities, especially the practice of teaching is still relatively weak in the process of personnel training, and there is a between the requirements of innovation and entrepreneurship training requirements. Colleges and universities to carry out innovation and entrepreneurship education is in response to national strategic requirements, and actively respond to social needs, change the mode of personnel training, training with innovative entrepreneurship and ability of innovative professionals important measures.

However, it is urgent to solve the problems in the innovation and entrepreneurship education, such as high training cost, the experimental process is irreversible and some experimental projects are not accessible and other characteristics. In view of this reality, colleges and universities should actively carry out virtual simulation experimental teaching resources and platform construction, and explore innovative ways of cultivating innovative talents. The virtual simulation experiment teaching platform can effectively integrate all kinds of experimental teaching resources, establish the experimental teaching system which is conducive to the cultivation of innovative talents, construct the experimental teaching platform with advanced technology, resource optimization, operation efficiency, open sharing, virtual reality combination and high simulation virtual experimental environment, for students to self-learning, independent experiments and innovative practice to provide the basic conditions. Through the guidance and demonstration of virtual simulation teaching, we try to realize the organic integration of professional education and innovation and entrepreneurship education. In the process of knowledge transfer, we should pay attention to the cultivation of students' innovative spirit, entrepreneurial consciousness and innovative entrepreneurial ability.

The deep integration of virtual simulation teaching and innovative entrepreneurship education

The use of virtual simulation teaching, innovation and creative knowledge content will continue to penetrate into the curriculum experiment, training, school year internship, comprehensive internship and other links, the establishment of a full range of practice experiment innovation entrepreneurial curriculum system, greatly promote innovation and entrepreneurship education in practice , and thus improve the quality of innovative entrepreneurship education.

The deep integration of virtual simulation teaching and economics and management experiments. In the process of teaching experiment, the virtual simulation teaching method is used to carry on the enterprise operation environment, business processes, to achieve the the "authenticity" of the teaching environment and the teaching content. In the “virtual reality environment” students have a more specific and more comprehensive understanding of the teaching content, the ability of students to deepen and strengthen the theory and practice of the theory, and then reviews the knowledge and application, so as to realize the self construction of the students' knowledge system. At the same time, combined with comprehensive case teaching, project teaching, task driven and other teaching methods to achieve experimental curriculum and practical problems, taking the actual problem as the starting point, the use of virtual simulation teaching resources, to carry out all kinds of independent design experiment, and organize the students to carry out various forms and flexible exchanges, seminars and other activities, to enhance the teaching effect.

The deep integration of virtual simulation teaching and management training. The virtual simulation teaching is integrated into the teaching and learning of the management class. Using virtual simulation technology to achieve teaching, to build a comprehensive, hierarchical, multi-module training teaching content system, to form a variety of comprehensive training projects, to enhance the comprehensive design of the proportion of experimental projects, paying attention to student theory and practice the ability to cultivate.

It is difficult to integrate all the contents into a complex enterprise ecosystem. In order to clearly show the modern enterprise business operation ecological environment to the students, the center from the enterprise supply chain panorama and public service organization operation of two aspects of the design of modern enterprise business operation of the ecological environment system. In the supply chain panorama simulation, students in the training process to serve as suppliers, manufacturers, distributors and retailers role, so that students experience the supplier business, production or service enterprises, distributors and third-party logistics enterprises, so that students feel the survival and development of enterprises and the environment, perception of the correct business ideas and management ideas, but also more profound experience of competition between enterprises, training students innovative entrepreneurial ability. In the simulation of public service agencies, students through business, taxation, social security and other government service agencies and banks, accounting firms, law firms, human resources companies, bidding centers, exhibition centers and other public service agencies related business. To experience the financial, taxation, industry and commerce, accounting firms, exhibitions and other public services on business management activities, so as to enhance their practical ability to engage in related work.

The deep integration of virtual simulation teaching and cross-professional comprehensive practice. In the completion of the corresponding pre-course, students have the relevant professional skills. Making full use of the advantages of virtual simulation platform, realize the management of various kinds of professional knowledge integration, from the overall situation, overall planning and design, break professional restrictions, to achieve the integration of resources, so that students in the same division time to complete the corresponding training project. Through the virtual simulation technology to carry out cross-professional comprehensive training, simulation and practical work will be closely integrated with a wide area, all-round, multi-level to allow students to experience the "real" business management and management of the entire process, to achieve professional knowledge of the depth of integration , thereby enhancing the students' practical ability and innovative entrepreneurial ability.

The company's operations and management practices include ERP sandbox enterprise simulation, enterprise operations and competitive simulation and entrepreneurial combat simulation, including simulation operations, production management, marketing management, strategic management, raw material procurement management, financial management, competitor analysis, and other experimental projects. In the virtual enterprise business environment, which is set up by software, through a series of training sessions such as simulation operation, confrontation training, teacher evaluation, student perception and so on, students will combine the theoretical knowledge with the simulated business activities, so that students in the analysis of the market environment, the development of corporate strategy, marketing planning, organization of internal production, financial management and a series of activities, the perception of scientific management, training team spirit and innovation and entrepreneurship.

Virtual simulation teaching into all kinds of innovative business activities. To achieve virtual simulation teaching into all kinds of innovative business activities， we set up "innovation and entrepreneurship lectures", "Sun Island Forum" and other forms of lectures, web lectures, to provide students with the latest information, sharing innovation and entrepreneurship experience. Organized the May 4th Science and Technology Festival, with the "Challenge Cup" competition and students' innovative business achievements as the key to highlight the innovative entrepreneurship education and practical teaching results. To carry out various disciplines competitions, "Internet +" innovation and entrepreneurship competition, college students management decision contest, ERP sand table simulation contest, GMC Enterprise Management Challenge, enterprise management network virtual operation competition, and so on, students in the competition continue to self-transcend, to enhance their innovative entrepreneurial ability.For the students innovation and entrepreneurship training program to provide business practice site, a total of more than 30 enterprises in this hatch, 15 registered entities.

Acknowledgment

This work is supported by Hei Longjiang Province teaching reform and teaching research project: A Study on the "Five in One" Practical Teaching Model Based on the Cultivation of Innovative and Enterprising Ability of College Students in Commercial Colleges.

References

[1] Weiguo Wang. Construction Consideration and Suggestion of Virtual Simulation Experimental Teaching Center. Research and Exploration in Laboratory. Vol. 32 (2013), p. 5-8.

[2] Ping Li, Changjie Mao, Jin Xu. Construction of the National Virtual Simulation Experiment Teaching Centers, Improving the Experimental Teaching informatization in Higher Education. Research and Exploration in Laboratory. Vol. 32 (2013), p. 25-28.

[3] Li Zhang, Liucheng Zhang, Fengxia Wang. Construction and practice of virtual simulation experimental teaching center for modern business operation. Experimental Technology and Management. Vol. 31 (2014), p. 1-4.

[4] Xiaohui Xu, Cao Lan, Dongxiang Zhang. System construction of virtual simulation experimental teaching platform on entrepreneurship in comprehensive universities. Laboratory Science. Vol. 19 (2016), p. 90-93.

[5] Weiguo Wang, Jinhong Hu, Hong Liu. Dongxiang Zhang. Current Situation and Development of Virtual Simulation Experimental Teaching of Overseas Universities. Research and Exploration in Laboratory.. Vol. 34 (2015), p. 214-219