

# *Research on the Application of VR Technology in Logistics Equipment Application and Management Course Teaching*

Ke WANG\*

School of Business

Chongqing Vocational College of Transportation

Chongqing, China

**Abstract**—This paper analyzes the problems existing in the course teaching of logistics equipment application and management, and focuses on the application of VR technology in the course teaching of logistics equipment application and management by introducing VR technology. Compared with the traditional teaching mode, the advantages of VR technology in the teaching of logistics equipment application and management are summarized. Finally, it is concluded that the application of VR technology in the teaching of logistics equipment application and management effectively enhances students' interest in learning and improves the teaching effect of the course.

**Keywords**—VR technology; Logistics equipment application and management course; Teaching; Advantage

## I. INTRODUCTION

With the continuous development of intelligent and unmanned logistics management in the future, the application and management of logistics equipment will play a dominant role in the whole logistics management, directly determining the survival and development of logistics enterprises. This requires future logistics vocational education to pay more attention to training students' ability of application, maintenance and management of logistics equipment, so that students can master the operation and maintenance methods of logistics equipment, so as to meet the development needs of future logistics enterprises. However, there are many kinds of modern logistics equipment, especially some intelligent logistics equipment with high maintenance cost. Moreover, the updating speed is very fast. At present, it is difficult for vocational colleges to provide a complete, safe and effective logistics equipment teaching platform in the teaching of logistics equipment due to the constraints of capital, personnel, safety, site and other factors. At the same time, due to the limitations of current logistics equipment teaching conditions, the teaching is mainly carried out in the traditional single mode, such as pictures, video, etc., which requires too much imagination on students and too little practical training for students to improve their learning interest and sense of acquisition, making the teaching quality and effect difficult to meet the requirements. VR technology can be used to create a variety of realistic logistics equipment models, through VR special equipment operation, can achieve the same effect as the

actual operation of equipment. The logistics equipment teaching platform established by VR technology can realize the man-machine interactive learning mode between students and machines, greatly improving students' learning interest and teaching effect [1-3].

## II. PROBLEMS EXISTING IN THE COURSE OF LOGISTICS EQUIPMENT APPLICATION AND MANAGEMENT TEACHING

### A. Logistics Equipment Investment, Teaching Equipment Shortage of Teaching Means Single

The teaching of logistics equipment application and management needs the support of corresponding logistics equipment, such as automated three-dimensional warehouse, circulation processing equipment, sorting equipment, continuous conveying machinery and other logistics equipment. This requires a large amount of capital investment by the school, which also requires a high maintenance cost in the later period after the one-time capital investment. Besides, with the progress of technology, the equipment also needs to be updated in time. However, it is often difficult for the school to update the equipment in time, which leads to the generation gap between the actual use of logistics equipment in the school and enterprises. Due to the lack of logistics equipment, teachers' teaching methods can only be expressed through text, video, pictures and other forms. The traditional teaching methods are single, students have no interest, and it is difficult to achieve the teaching effect.

### B. High Safety Pressure and Limited Practical Operation

When students carry out practical operation of logistics equipment, schools often do not arrange or seldom arrange practical training of logistics equipment with certain safety risks from the perspective of safety. Such as the operation of large mechanical equipment such as forklifts and cranes, it is difficult for students to improve their equipment operation ability. In addition, university-enterprise cooperation as a school teaching practice and important platform of training students, but the teaching of school and enterprise cannot do a seamless docking, at the same time, the enterprise will be from the perspective of their own interests and security, restrict students for logistics equipment of dangerous operation, this

greatly reduces the student to a certain extent the teaching effect of practice.

### *C. Logistics Equipment Has a High Degree of Specialization and Few Qualified Teachers*

Logistics equipment is highly specialized and increasingly intelligent. At present, it is difficult for one teacher to have the qualification of practical operation and maintenance of multiple kinds of equipment, or for multiple teachers of logistics major to have the qualification of practical operation and maintenance of multiple kinds of logistics equipment. For example, forklifts, which are commonly used in logistics equipment, have few teachers with teaching qualifications, while for more specialized logistics equipment like gantry cranes, there are even fewer teachers with teaching qualifications. Therefore, the requirements on teachers in the course of logistics equipment application and management will become too high, or it is difficult to carry out good practical teaching in actual teaching. These problems reflect the logistics equipment application and management of the actual difficulties of course teaching, applying VR technique is applied to logistics equipment and the teaching of management courses, through VR technology will be the real logistics equipment form, structure, operation process, safety, special treatment of simulation and visualization display, can effectively solve the large logistics equipment, updated quickly, the problem such as teaching means a single, VR technology can provide teachers with more abundant teaching methods and means, provide students with realistic man-machine interactive learning mode, enable students to effectively master the basic structure, working principle and operation process of logistics equipment in their interest, and greatly improve the teaching effect.

## III. APPLICATION OF VR TECHNOLOGY IN LOGISTICS EQUIPMENT APPLICATION AND MANAGEMENT COURSE TEACHING

### *A. Demonstration Application of VR Technology in Logistics Equipment Application and Management Course*

The course of logistics equipment application and management is a course with strong demonstration and practical operation teaching. The operation of logistics equipment needs to be carried out on the basis of mastering the basic structure, working principle and equipment operation process of logistics equipment. Although the traditional pictures and videos can achieve certain effects, they are too abstract and require students' imagination. It is difficult to effectively explain the basic structure, working principle and operation process of logistics equipment, especially some complicated equipment. By creating various logistics equipment models through VR technology, teachers can clearly and intuitively demonstrate the basic structure, working principle and operation process of logistics equipment to students by using VR equipment. It improves the teaching effect. Meanwhile, students can learn the basic structure, working principle and other relevant knowledge of logistics equipment clearly and intuitively through VR equipment at any time. It improves students' cognitive efficiency and learning interest.

### *B. Practical Application of VR Technology in Logistics Equipment Application and Management Course Teaching*

An important content in the teaching of logistics equipment application and management course is the practical operation teaching of equipment. The practical operation teaching of logistics equipment has always been a prominent problem. Second, in traditional teaching, most teachers can only show the operation process of various logistics equipment to students through pictures, video and other forms, which requires high imagination of students and makes it difficult to achieve teaching effect. Third, the general types and quantities of logistics equipment in schools are small, which is difficult to meet the training time of students' actual operation and has poor timeliness. This makes the effect of practical operation teaching difficult to be satisfied effectively, and students' practical application ability will be relatively weak, especially not suitable for the goal of training technical talents in higher vocational colleges. Through the application of VR technology, the teacher in the field of teaching can demonstrate by VR equipment manipulation of virtual logistics equipment, VR technology can achieve logistics virtual devices with the operation of the real logistics equipment without any differences, students can through to manipulate all kinds of virtual logistics and VR devices, can be clear, intuitive feel the entire operating process of logistics equipment, realize in the true sense of undifferentiated experience. At the same time, learning can not be restricted by time and space, and can be repeated for many times, which can greatly improve students' interest in learning, enable students to master the operation method of equipment to the maximum extent, and maximize the effectiveness of logistics equipment practical operation teaching.

### *C. Application of VR Technology in Equipment Operation Safety Standard Teaching of Logistics Equipment Application and Management Course*

An important content in the teaching of logistics equipment application and management course is the standard teaching of operation safety. There has always been a prominent problem in the practical teaching of logistics equipment, which is the safety problem of equipment training. Second, students did not carry out effective simulation operation before the actual operation, so they could not effectively master the operation process of the equipment. Third, the students did not carry out effective special situation disposal rehearsals. Although teachers will emphasize the necessity of safe operation and safety measures in the practical training process, most students will not pay attention to it, so there will be relatively big safety hidden dangers in the practical training teaching, which is not conducive to the effective teaching of teachers, and is not conducive to the safety of students. Through the application of VR technology, teachers can use VR equipment to teach safety precautions and special situation disposal methods before the practical operation of logistics equipment. VR technology can realistically simulate various special situations and disposal methods in the actual operation of logistics equipment. It can effectively improve students' safety awareness and special situation handling ability during practical training, and ensure the safety of logistics equipment practical operation teaching to the maximum extent.

#### IV. THE ADVANTAGES OF VR TECHNOLOGY IN THE TEACHING OF LOGISTICS EQUIPMENT APPLICATION AND MANAGEMENT

##### A. *Strong Intuitive Sense of Reality Makes Learning Improve Learning Interest*

VR technology to build the virtual logistics equipment, so that the students can be very intuitive and realistic observation of the basic structure and working principle of logistics equipment, and can be real in front of the practical operating experience of logistics equipment operation process, improve training learning efficiency, so as to make the learning process, vivid image, easy to understand and operate, stimulate students interest in learning at the same time, also improve the students' ability of equipment operation [4-5].

##### B. *Real-time Open Sharing of Teaching Resource Platform Improves Teaching Effect*

VR technology to build the platform for the virtual logistics equipment of teaching resources can make the students not be restricted by time, space, can be repeated many times for logistics equipment of virtual operation training, can better grasp the basic structure and working principle of logistics equipment, and can be as realistic an experience as logistics equipment in the operation process, improve training learning efficiency, training equipment utilization, and further enhance the teaching effect.

##### C. *Virtual Interactive Learning can Effectively Stimulate Students' Enthusiasm*

VR technology to build the platform for the virtual logistics equipment of teaching resources can make students get the man-machine interactive experience and achievement, students can through the use of VR equipment to produce a man-machine communication experience, can put your own thought, presented by VR technology, thus forming a way of human-computer interactive learning, greatly improved the students' learning interest and achievement, and students from passive learning into active learning actively.

#### V. CONCLUSION

VR technology and logistics equipment application and management of the organic integration of teaching, for the teachers and students provides a vivid and interesting teaching platform and the way of logistics equipment course, will be used in the past images, video, etc. Let the students to understand knowledge more vivid display, improves the teaching quality, enhancing the students' learning enthusiasm. In a word, VR technology breaks the limitation of time and space in logistics teaching and allows man-machine interactive teaching to enter the classroom. It changes the rigid and rigid teaching mode into more interesting and improves the teaching efficiency by teaching and learning through lively activities. At the same time, it can effectively save the teaching cost, improve the practical training benefit, and avoid all kinds of potential safety hazards in the practical training. Of course, VR technology also has some problems in the application of logistics equipment and management course teaching, which will be the main content of the next research.

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