

Research Article

Implementation of Creator-Based Virtual Simulation in News Interview

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With the development of network information technology, the application of virtual simulation technology in medicine, electromechanical, military, and other fields has changed the traditional field operation mode and achieved good results, but the application of virtual simulation technology in the field of news and communication is very little. This paper takes the construction of virtual simulation news system as an example. Based on the support of 3D modeling technology of Multigen Creator, the functional requirements of virtual simulation news interview system are analyzed, the overall system objectives and architecture are set up, virtual scene database, 3D entity modeling, model optimization, and real-time rendering are established. A virtual simulation system for emergency news interviews is designed and developed, including real-time simulation environment and online operational feedback. This paper discusses the application effect of the system. By means of the questionnaire survey, SPSS23.0 is used to further analyze the feedback data of users. The data show that the expected functions of 3D modeling and real-time simulation of system modules have been realized. The research shows that virtual simulation technology can be successfully applied in the field of news and communication, and can successfully penetrate into the practical dimension of news and communication, change the existing single information interaction mode, and create a new era of real-time simulation.

1. Introduction

The rapid development of computer technology and artificial intelligence technology has brought opportunities for the application of virtual simulation experiment technology in the field of education. Virtual reality, which originated in the late 1960s, has gradually realized the high integration with the depth and breadth of experimental teaching in colleges and universities after decades of maturation. Since the Ministry of Education launched the construction of national virtual simulation experimental teaching center nationwide in 2013, virtual simulation experimental projects of various disciplines have been successively implemented in universities [1]. In October 2018, the Ministry of Education pointed out in the “opinions on accelerating the construction of high-level undergraduate education to comprehensively improve talent cultivation ability,” “to promote the deep integration of modern information technology with

education and teaching, build about 1,000 national virtual simulation experimental teaching projects, and improve the quality and level of experimental teaching” [2]. In the same year, the Ministry of Education announced the first batch of national virtual simulation experimental teaching projects.

However, it cannot be ignored that among the national virtual simulation experimental teaching projects that have been approved, the number of journalism and communication projects is 10, accounting for only 3.4%. In addition, the data obtained from the first simulation teaching competition held by the Chinese simulation society in 2021 showed that journalism and communication accounted for less than 1% of 327 virtual simulation teaching works submitted by 132 colleges and universities across the country. The application of virtual simulation technology is mainly reflected in engineering, medical science, mathematics, physics and chemistry, and other disciplines. Compared with the multi-frequency application of virtual

simulation technology in science and technology, the development of humanities, especially journalism and communication virtual simulation experiment projects, lags behind obviously. Around the world and combining the COVID-19 outbreak, in the construction of emergency news interview fusion virtual simulation experiment platform for practice and theoretical research, related research fields are blank.

The virtual simulation system of emergency news interviews forms powerful support for news interviews with the most intuitive and lifelike experience effect. With its strong immersion and extensive interaction, students can instantly get familiar with the special and strange environment on the “scene,” changing the traditional single information interaction structure, and achieving a good application effect.

Virtual Reality, which can be traced back to the late 1960s, uses advanced technological means to build a virtual simulation system to imitate the real environment of entity existence [3]. This technology relies on the necessary technical guarantee and support brought by the rapid development of electronic technology and digital information technology. The application of VR technology in the early stage is similar to that in the early stage of the development of high-energy computers, with huge volumes and relatively strict requirements for the use of equipment. It is limited to the viewing of secret information in key and special fields, and its single function determines the limited use of this technology.

With the development of digital electronic technology, the well-known head-mounted VR equipment emerged in the 1970s [4], breaking through the limitation of a single functional field of VR equipment, and having abundant involvement and performance in image processing and multimedia technology application field. This emerging technology with the National Aeronautics and Space Administration of the United States of America to the depth of its scope of application, so that VR equipment in a real sense based on optical display for image information interaction, change the existing information interaction structure so that VR technology widely into e-sports, medical, education, and other fields. In the field of e-sports, the application and deep cultivation of VR technology bring a good entertainment experience to players [5].

In the late 1990s, the development and popularization of computer equipment in China laid a solid foundation for the development of information technology in China. The development of Internet market resources has become an important place for the development of China’s information technology industry, and the mainstream direction of Internet market resources development focuses on commercial VR technology. The proliferation of commercial VR technology is driving related fields such as military, medical, and education. The United States and Germany are the first to test VR technology in higher education, accumulating VR technology experience in the field of education. The application of simulation technology in the field of education started in 1989, when professor William Wolf of University of Virginia put forward the concept of virtual experiment for

the first time [6], which became the beginning of virtual simulation experiment research. Subsequently, the iLad remote sharing lab was established at MIT.

Different from foreign virtual simulation technology that entered the field of higher education earlier, domestic virtual simulation technology started late in the field of higher education experiments [7]. Since 2015, China has implemented the “double first-class” education policy, aiming to build China into a higher education country in the middle of the 21st century, enhance international core competitiveness, improve teaching quality, cultivate high-quality talents, accelerate the development of higher education, and realize the modernization of teaching management. Colleges and universities try to carry out virtual simulation experiments teaching by optimizing teaching quality and deepening talent cultivation.

The rise of virtual simulation technology experiment teaching is closely related to the government’s high attention and policy. In August 2013, the Ministry of Education launched the construction of the national virtual simulation experimental teaching center, which fully reflects the important position of virtual simulation teaching in the practical teaching system of colleges and universities [8]. In 2016, 300 national virtual simulation experimental teaching centers have been established in mainland China. In 2017, the Ministry of Education issued the “Notice on the Construction of Demonstration Virtual Simulation Experimental Teaching Project” from 2017 to 2020, advocating universities at all levels to actively build virtual simulation experimental teaching projects combining curriculum systems and training objectives. On October 8, 2018, the Ministry of Education and the Publicity Department of the CPC Central Committee issued opinions on “Improving the Cultivation Ability of Journalism and Communication Talents in Universities and Implementing the Education and Training Plan 2.0 for Outstanding Journalism and Communication Talents,” which clearly pointed out that 50 national virtual simulation experimental teaching projects of journalism and communication should be built [9]. On April 29, 2019, the “six excellent and one top” program 2.0 launch meeting was held, and the virtual simulation gold course was clearly proposed to be included in the first-class course construction “double thousand plan.” According to the “Notice on the Construction of Demonstration Virtual Simulation Experimental Teaching Projects” from 2017 to 2020 issued by the general office of the Ministry of Education, the Ministry of Education will identify about 1000 demonstration virtual simulation experimental teaching projects by 2020 [10].

Under this good opportunity, domestic universities actively respond to the local conditions to carry out virtual simulation experiment technology practice and research in a number of disciplines. At present, the domestic construction of Tsinghua university has a mechanical virtual experiment system, the space remote sensing operation robot research, national university of defense technology of virtual battlefield modeling and simulation technology research, Beijing University of technology in civil engineering national virtual simulation lab, Beijing University of aeronautics and

astronautics build research and development of flight simulator, flight simulation and application of special effects in the scene, The virtual technology and system of vehicle vibration test and vehicle driving dynamics developed by Zhejiang University, and the influential experimental system of human-computer interaction and virtual robot research by Harbin Institute of Technology.

2. Related Work

Since the Ministry of Education launched the construction of national virtual simulation experiment teaching center nationwide in 2013, virtual simulation experiment projects of various disciplines have been successively implemented in colleges and universities. In October 2018, the Ministry of Education announced the first batch of national virtual simulation experimental teaching projects. Among the 296 national virtual simulation experimental teaching projects announced by the Ministry of Education, medicine and pharmacy are 74, accounting for 25%; there are 38 items in engineering, accounting for 12.8%, 29 items in chemistry and chemical engineering, accounting for 9.8%, and 20 items in machinery, accounting for 6.8% [11]. It is not difficult to see that the subject areas of virtual simulation technology have obvious commonalities: the real working environment is a high risk, and there is personal danger in field experiments or investigations; field experiments require expensive equipment, fast wear and depreciation of equipment, short product replacement life cycle, and high experimental costs; in particular, the operation procedure of medical field experiment has irreversibility, and a slight error poses a threat to life and health. The virtual simulation technology is no different from maximizing the experimental teaching effect with a low-cost mimicry environment. On the other hand, only 10, or 3.4%, were approved for journalism and communication. According to the data of the national virtual simulation experiment teaching project sharing platform in 2022, journalism 19 items, radio and television 12 items, communication 7 items, network and new media 5 items, editing and publishing 2 items, and advertising 1 item. At present, digital publishing, fashion communication, international news, and communication have no projects. Compared with the widespread application of virtual simulation technology in science and technology, the development of virtual simulation experiment projects in humanities is still lagging behind [12]. This is related to the traditional humanities paradigm. The traditional liberal arts education emphasizes the self-sufficiency of the subject knowledge system, and the humanistic theory is elaborated more than the technology or technical thinking. With the penetration and development of new technologies, humanities should shift from a self-sufficiency knowledge system to social demand orientation under the guidance of new technologies. Supported by the global new scientific and technological revolution and based on the new economic development model, the new humanistic thinking of interdisciplinary integration has not yet become a consensus. It can be seen that most universities in China have not taken advantage of the existing geographical resources and

teaching resources to develop virtual simulation experiment projects but it also brings great development potential and space in the application of simulation experiment teaching.

According to the names of the projects that have been established, the subjects of the successful journalism experiment projects are mainly news gathering and reporting in the traditional media environment. For example, Wuhan University's "Data News Writing Process Simulation Experiment Teaching Project," Renmin University of China's "Virtual simulation Experiment Teaching Project of Integration of Major Themes in Media Reporting and Public Decision support." The topics of communication programs include "Virtual Simulation Experiment of Mobile News Client Development" of Huazhong University of Science and Technology, "Virtual Simulation Experiment of Integrated News Reporting of Science and Technology Powerful Country" of Shanghai Jiao Tong University, and "Virtual Simulation Experiment of Quantitative Empirical Research Ability Test" of Beijing Foreign Studies University. Web and new media topics, such as Zhejiang University's "Online Video Production and Publishing Virtual Simulation Major Experimental Teaching." Current project themes focus primarily on traditional information operations. Lack of new media digital product production, creative communication, and writing topics; the applicants are mainly from China's top-notch universities with strong comprehensive strength. The virtual simulation projects of journalism and communication in nondouble first-class universities are still blank. Investigate its reason, the equipment used for VR 360 panoramic shooting mainly includes SLR camera, fisheye lens, tripod, panoramic head, spare battery, camera bag, SD card, etc. The hardware cost is not low. In addition to the cost of conventional equipment and hardware, it needs a lot of production time and technical support to make the virtual news and communication platform. However, the lack of compound talents restricts the construction of virtual simulation platforms of nondouble first-class universities. Application talents of virtual simulation technology not only need strong professional knowledge structure, accurate grasp of platform theme direction and innovative media thinking but also need to be able to skillfully apply virtual simulation technology. Due to the limitation of capital, equipment, technology, and talent demand, virtual simulation project is difficult to put into practice in nondouble-first-class universities.

There are many kinds of research on the application and efficiency of virtual simulation technology at home and abroad. Chasson et al. pointed out that the internal motivation for learning comes from students' sense of acquisition and self-identification of learning activities. Virtual simulation technology enhances learners' learning motivation by providing learners with personalized services, colorful presentation forms, and timely feedback [13]. Andreev et al. hold a similar view that virtual simulation can bring positive emotions such as relaxation, pleasure, and satisfaction to students. Thus, students' internal motivation for learning can be stimulated [14]. Putz et al. focused on the study of factors influencing the learning effect of virtual simulation systems [15]. Some domestic scholars focus their research on

virtual simulation technology in fields closely related to social life, such as Li's research and design of a subway driving simulator based on simulation technology [16], Lu and Dong pointed out that the construction and practice of virtual simulation experiment teaching center for materials majors [17], Yao et al. pointed out that application of virtual simulation experiment teaching in molecular biology experiment teaching [18]. There are few studies on the application of virtual simulation in the field of news and communication. Liu proposed to build a "hierarchical + gradient" virtual simulation experimental teaching system and a "multi-platform + collaborative" virtual simulation experimental teaching matrix with the goal of gold course construction [19]. Taking journalism and communication majors as an example, Fan explored the application effects and influencing factors of virtual simulation experiment teaching projects in cloud environments through empirical methods [20]. Yang and Sun put forward measures to construct the sustainable development model of "VR + Journalism education" on the basis of analyzing the application status of virtual reality technology in journalism and communication practical teaching [21]. The research at home and abroad focuses on the application of virtual simulation technology in the field of science and technology, but the application research in journalism and communication is few. In cnKI.COM, the comprehensive search of "virtual simulation news and communication" in the categories of works, conference papers, journals, master and doctoral papers shows only 161 relevant literature, and 11 literature related to the virtual simulation platform of journalism and communication involving nondouble first-class universities, accounting for 6.83%. Continue to discuss and study, help to fill the theory of the deficiency and lack.

3. The Architecture of Virtual Simulation News Interview Platform Based on Creator

News interview is a basic skill for journalists. As a professional basic course for undergraduate students of journalism, news interview is the main course for students of journalism and communication to understand and master the knowledge of news interview, and it is also an indispensable compulsory course for journalists. The teaching of this course focuses on enabling students to master the internal laws and methods of news acquisition, learn to use the basic principles of news acquisition, and lay a solid foundation for news acquisition in the future. The classroom teaching of journalism interviews focuses on cultivating and training students' professional skills and creativity.

Theory should be put into practice. However, at present, the practical teaching of this subject is limited to the lack of social resources, and most of it is merely theoretical teaching in class. There are few practical forms for students to go out of school and truly understand and master the skills of interviews. Therefore, the reform of education and teaching is imperative. Especially in the news interview of emergency that cannot reach the interview site due to objective factors, it is an important part of the teaching content of news interview. In view of this, the author and her team built a

virtual simulation experimental teaching platform for the integration of emergency news interviews and reporting, and simulated the real environment through VR virtual simulation teaching experiment, making a positive attempt and discussion for the virtual simulation experimental teaching of news and communication in independent colleges.

3.1. Construction Purpose. According to the definition of the concept of emergency defined in The Law of the People's Republic of China on Emergency Response (2019.08.30), an emergency is a natural and accidental disaster, public health and social security event that occurs suddenly, causes, or produces serious harm to the society and requires immediate management measures. From SARS, which first broke out in Guangdong in 2003, to COVID-19, which is now raging around the world, people's lives and health have been endangered and society has been greatly affected in many aspects. From SARS, which first broke out in Guangdong in 2003, to COVID-19, which has now affected 210 countries, territories, and regions around the world, endangering people's lives and health and causing a huge impact on many aspects of society. Public health emergencies are characterized by abruptness, difficulty in approaching, inability to reproduce the scene, and inability for journalists to arrive at the scene for the first time. In actual teaching, it is difficult for teachers to restore the news scene through traditional teaching methods such as pictures and texts, and it is difficult to leave an intuitive impression on students. In view of the fact that students have little real interview experience and the innovative thinking advocated by the school, the author makes a preliminary attempt to build a virtual simulation news interview platform based on creator. Before the teaching of the news interview course, students have learned "Integrated journalism," "Network Journalism Practice," "Introduction to Media science," "Media Development History," "Network Public Opinion Monitoring and Research," "Web design and Production" and other related courses, and have certain media literacy and technical operation ability. On the basis of students' full understanding of news events and knowledge of relevant news points, through the experimental mode that teachers combine virtual simulation technology with news interview teaching, students can have an immersive and interactive experience and master the methods and skills of news interview of emergencies represented by public health emergencies. This project aims to cultivate students' news sensitivity, news information acquisition ability, emergency response ability, humanistic care, and journalism professionalism in public health emergencies.

3.2. Construction Roadmap. Combined with the outbreak of the public health crisis of COVID-19, a virtual simulation environment is set for interviews of Novel Coronavirus infected patients in Wuhan Jinyintan Hospital. The new model of "virtual simulation experience—evaluation and feedback of experimental results—effect improvement" is adopted to allow users to enter the virtual scene independently. Immersive and interactive experience of all links of on-site interview,

exercise users' ability of information collection, writing, and verification, and cultivate news sensitivity, professional ethics, and self-protection awareness.

This system restores the specific situation that the reporter interviews in the crisis scene of public health events for the students. Here, users can not only enter the hospital hall, doctors' offices, and nurses' stations, observe the surrounding environment and equipment and facilities, but also learn various information about medical staff and patients, such as the psychological status of medical staff, epidemic control situation, patient admission rate, and discharge rate. At the same time, users need to select appropriate clothing equipment for protection before entering the hospital, so as to ensure personal safety.

Traditional emergency news is confined to the classroom teaching, teaching mode because of breaking news events immediacy, the scene is difficult to reproduce, the reporter to the first arrival event scene, this system set the interview situation simulation reduction, task-driven, project management. The three stages strengthen the immersive virtual simulation technology, interactive and idea. In the interview situation reduction key link, is meticulous divided into background knowledge, news, online testing, test results, feedback, etc., and set in each link of different tasks, such as according to the field observation information check, what problem can carry, interview the purpose, to encourage students to actively explore, to complete the corresponding task. This project adopts the gamification setting mechanism, which will give immediate feedback according to the completion of the task of the virtual reporter. The correct operation will be encouraged, and the improper operation will be reminded accordingly, which can effectively motivate the experimenter, continuously increase the difficulty of the challenge and stimulate the interest in participation.

3.3. Technical Support. High-speed network exists, high-performance server, large capacity storage, network firewall, virtual simulation experiment management platform, and other equipment and facilities are used for virtual simulation experiment project operation. Network the system deployed on a LAN server must have a broadband speed greater than 50 MBIT/s and can support 100 concurrent online users. Users can use computers, mobile phones, tablet computers, and other devices to log in to the virtual simulation experiment platform to complete the experience under the broadband network environment.

The opening and operation of the virtual simulation project of emergency news interview rely on the support of the open virtual simulation experiment teaching management platform, and the two are connected seamlessly through the data interface. Based on computer simulation technology, multimedia technology, and network technology, the platform adopts service-oriented software architecture development and integrates physical simulation, intelligent guidance, automatic correction of virtual experiment results, and teaching management. The construction target is a virtual experiment platform with good autonomy, interactivity, and extensibility.

At present, the representative development tools for virtual simulation experiment projects include Unity, 3D Max, Maya, Nibiru Creator, MuGeDa, Pr, Animator, Captivate, Flash, etc. Multigen Creator is a real-time visualization 3D software system, which is a professional software for real-time visual simulation. Multigen Creator features powerful polygon modeling, vector modeling, and accurate generation of large area terrain. Built-in Vega Prime-based previews, the users can browse the processing modeling (RPM) wizard tool to quickly create buildings and other objects, and create wySIWYG 3D modeling environment. Its various plug-ins can efficiently and optimally generate real-time 3D (RT3D) database, which can be connected to the real-time simulation software. Multigen Creator features polygon modeling and modification tools such as construction points, extrusion, subdivision, and T-vertex elimination. Viewing volume and clipping planes can be set, and functional nodes such as DOF (degree of joint freedom), LOD (level of detail), and Switch (logic Switch) can greatly meet the requirements of virtual simulation system for a news interview. Based on this, the system uses Multigen Creator 3D modeling software and Vega Prime real-time driver software as technical support and adopts distributed virtual reality system (DVR), that is, virtual reality systems scattered in different geographical locations are connected together through the Internet. The unified structure, standards, protocols, and databases are adopted internally to form a synthetic virtual environment that is coupled with each other in time and space. To satisfy multiple participants to simultaneously participate in a virtual space and freely interact and work collaboratively. The most typical examples of such systems are multi-user virtual environments that are widely used abroad, such as Second Life, Active World, Whyville, and Kitley platforms [22].

The design idea of the system is shown in Figure 1. 3D software modeling and processing, 3D engine driving, and the virtual simulation system is constructed and completed. The basic process of the system is mainly divided into 6 links, including construction objectives, field investigation, overall design, test and verification, interactive roaming, and practical application, as shown in Figure 2. Among them, database construction, modeling, texture mapping, and integrated rendering are the key links of actual construction.

4. Design and Implementation of Virtual Simulation Emergency News Interview Platform

4.1. 3D Visualization Modeling Technology. The system needs 3D visualization modeling of protective equipment and interview equipment room, hospital office area, and hospital outpatient building. Protective equipment and interview equipment room area set up equipment racks, protective clothing, masks, cameras, microphones, and other object models; the office area includes a desk, computer, file cabinet, screen, and other models; it is shown in Figure 3. In the modeling of Wuhan Jinyintan Hospital, the outpatient

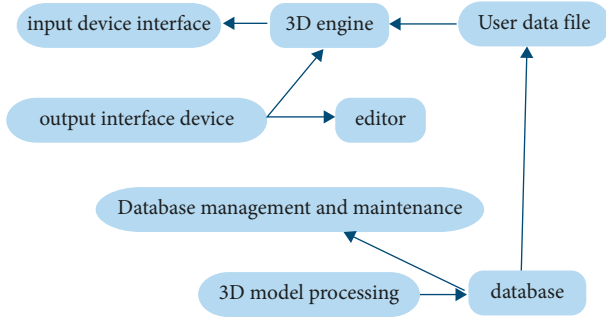


FIGURE 1: Construction idea of virtual simulation system.

building hall, doctor's office, and nurse's office were mainly created.

4.1.1. Examples of Technology. The instance technique in Multigen Creator minimizes the repetition of building the same model, greatly save and free up memory space. When multiple models with the same physical structure are required to construct simulation scenes, the data of one model can be shared and its position can be changed through matrix transformation to improve the rendering performance of the system. Through matrix conversion, the shared model can be rotated, translated, zoomed in, and zoomed out in virtual space to complete the construction of multiple models. Assume that the geometric transformation matrix of the 3D model is T_{3D} , and its expression is as follows:

From the perspective of a transformation function,

$$T_{3D} = \begin{bmatrix} a_{11} & a_{12} & a_{13} & a_{14} \\ a_{21} & a_{22} & a_{23} & a_{24} \\ a_{31} & a_{32} & a_{33} & a_{34} \\ a_{41} & a_{42} & a_{43} & a_{44} \end{bmatrix} \text{ it can be divided into four:}$$

$$T_{3D1} = \begin{bmatrix} a_{11} & a_{12} & a_{13} \\ a_{21} & a_{22} & a_{23} \\ a_{31} & a_{32} & a_{33} \end{bmatrix} T_{3D2} = \begin{bmatrix} a_{14} \\ a_{24} \\ a_{34} \end{bmatrix} T_{3D3} = [a_{41} \ a_{42} \ a_{43}]$$

$$T_{3D4} = [a_{44}]$$

Among them, T_{3D1} produces geometric transformations such as proportion and rotation; T_{3D2} produces projection transformation; T_{3D3} produces translation transformation; T_{3D4} produces a global scale transformation. For example, to translate the model from point $A(x, y, z)$ to point $B(l_x, l_y, l_z)$, the translation equation is mentioned below:

In order to scale the model relative to the origin of coordinates, the scaling ratio is (t_x, t_y, t_z) , and the transformation matrix equation is: $[x' \ y' \ z' \ 1] = [x \ y \ z \ 1]$

$$\begin{bmatrix} t_x & 0 & 0 & 0 \\ 0 & t_y & 0 & 0 \\ 0 & 0 & t_z & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}$$

If the rotation operation is to be carried out, it is assumed that β Angle is rotated around the coordinate axis relative to the origin of the coordinate system, the transformation equation of its rotation around the three coordinate axes is:

We rotate it around the x -axis $[x' \ y' \ z' \ 1] =$

$$[x \ y \ z \ 1] \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & \cos\beta & \sin\beta & 0 \\ 0 & -\sin\beta & \cos\beta & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}$$

We rotate it around the y -axis $[x' \ y' \ z' \ 1] =$

$$[x \ y \ z \ 1] \begin{bmatrix} \cos\beta & 0 & -\sin\beta & 0 \\ 0 & 1 & 0 & 0 \\ \sin\beta & 0 & \cos\beta & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}$$

We rotate it around the z -axis $[x' \ y' \ z' \ 1] =$

$$[x \ y \ z \ 1] \begin{bmatrix} \cos\beta & 0 & \sin\beta & 0 \\ -\sin\beta & 1 & \cos\beta & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}$$

4.1.2. Texture Mapping. Texture mapping refers to mapping 2d images to corresponding points of 3D models without increasing the number of polygons, so as to enhance the realistic visual effect of the model and improve its truthfulness of the model. After the basic modeling is completed, texture mapping can be further combined with material and light and shadow fusion to enhance the fidelity of the model. Texture can provide the best 3D line elements due to the full use of perspective transformation. In addition, texture can reduce the number of polygons in the virtual environment, and speed up the transformation and refresh frequency of the graphics display.

The basic modules for texture mapping are texture toolbox, texture palette, and MoD texture. After the basic modeling of the main geometric model construction, material, and light source is completed, texture production is started to complete the preparation of texture. After that, texture import-setting the current texture-selecting target geometry-applying texture, texture mapping is completed, and the model effect is checked by window preview/LynX preview/Vega preview.

In the process of texture preparation, image processing tools such as photoshop can be used to process images. When the model texture is in JPG format, it cannot be displayed in the real-time operating environment of Vega. Thus, when the texture is prepared, the texture can be saved to the graphics output formats acceptable to openflight, such as 8-bit grayscale format, 8-bit grayscale and 8-bit alpha channel format, 24-bit tricolor format, 32-bit tricolor, and 8-bit alpha channel format. Multigen Creator supports a variety of general standard image formats, commonly used mainly INT, INTA, RGB, and RGBA, when mapping texture using RGB and RGBA two formats, its purpose can be better compatible with Vega. When rendering texture, the real-time system requires that the size of the texture image in the horizontal and vertical directions must be 2 to the power of n , such as $32 * 64$, $128 * 256$, and other ways conducive to system reading, otherwise, it will not be displayed normally or distorted. Second, it is recommended to use the corresponding path of the texture. Use the List Texture tool to change the path, otherwise, the texture will not be displayed.

Texture space is a coordinate space with U and V as horizontal and vertical axes, respectively. The minimum unit of a two-dimensional texture image in the texture space is the grain element. After the texture image is loaded into the texture memory, the real-time system can call texture resources in the model database at run time. Calculation formula of texture memory for: X direction texels size

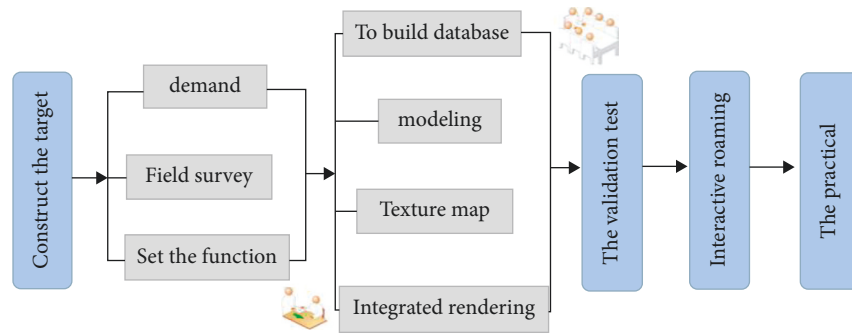


FIGURE 2: Development flow of virtual simulation system.



FIGURE 3: Outpatient hall of Wuhan Jinyintan Hospital.



FIGURE 4: Modeling equipment room.

multiplied by the Y direction texels size multiplied by the number of color channels. The X- and y-direction pixel size represents the length and width of the texture image respectively. After importing the texture image into MultiGen Creator, select the geometric model object to be pasted with the texture, and then use the texture mapping tool to map the texture image to the polygon surface of the model. Three-point mapping, four-point mapping, surface mapping, and column mapping are the main mapping methods. According to different mapping objects, select the corresponding mapping mode; according to the production requirements, the flexible use of texture mapping tools to complete texture mapping. Texture mapping can preview the mapping effect in LynX. Based on the consistency of MultiGen series software products, as long as the built model can see a good mapping effect in LynX, it can be normally applied in the simulation system developed based on Vega.

Specific to the construction of a single model, such as a female doctor, basic modeling, batch processing rendering tools, texture mapping, etc., can be used to make the prototype of the model concrete and vivid step by step. Figures 3 and 4, respectively, show the interview equipment room for modeling protective equipment and the outpatient hall of Wuhan Jinyintan Hospital. Figures 5 and 6 show the process of a female doctor from prototype to finished product. The system for model construction, model optimization, texture mapping, model rendering maximum quality production, and original scene plot, reflect the required model scene or object high fidelity, and improve the user's sense of immersion.

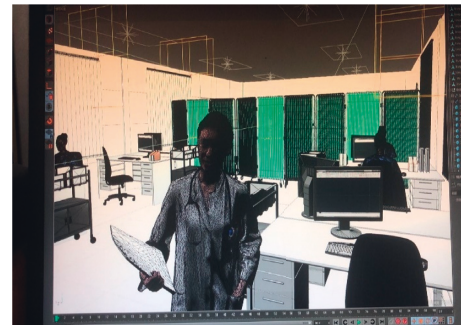


FIGURE 5: Model the female doctor prototype.

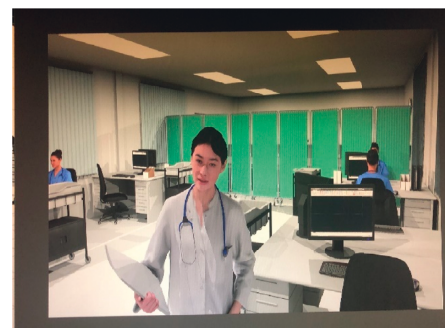


FIGURE 6: Modeling a female doctor.

4.2. System Application. The model of this project adopts classroom teaching integrated with virtual simulation experimental platform teaching, task-driven and online testing, and experimental result evaluation.

4.2.1. Virtual Simulation Experiment Platform Classroom Teaching. Teachers adopt the problem-oriented PBL (Problem-based Learning) teaching mode to conduct theoretical teaching from four dimensions: brief introduction of emergency, basic requirements of emergency interview, virtual simulation experiment, and humanistic care of emergency interview.

In the brief introduction of emergencies, teachers can focus on four types of emergencies, such as natural disasters, accidents, public health, and social security, with high pixels and strong impact images to enhance students' memory of the types of emergencies. With a positive attitude, the transmission mechanism should continue to explore the value determination, theme selection, and interview perspective of emergencies, enrich the interview strategies of catastrophic events, and find their own role and space. Therefore, the basic requirements of the emergency interview are to do a good job in planning the report and determine the report scheme; second, to prepare for the interview, make interview plan, make necessary material preparations, and interview outline in advance; when teaching interview preparation, students should clarify the latest background of COVID-19, policy requirements for epidemic prevention and control, information points to be obtained. The necessary material preparation can be carried out on the virtual simulation news interview platform. The teacher is required to introduce the functional modules in the virtual simulation system and their use methods, and explain the experimental requirements, experimental content, and experimental process. After mastering the types of emergencies and interview requirements, students entered the interview simulation scenario of COVID-19, a public health crisis.

The experiment project reproduced the specific situation of the all-media journalists entering Wuhan Jinyintan Hospital for interviews in 2020 when the COVID-19 epidemic was raging around the world and Wuhan was completely shut down, as shown in Figure 7. The first step is in the interview equipment and protective equipment room. All media reporters need to select appropriate interview equipment and protective equipment. If they make a wrong choice, they will be prompted accordingly. All media reporter has entered the hospital clinic, the doctor's office, the nurse station, experiential observation interview hospital treated patients, patients can open information, control epidemic situation, pay attention to health care workers and patients' psychological status, interview questions reveal of humanistic care, manifests the journalist's occupational morality and comprehensive quality.

4.2.2. Task-Driven and Online Testing. This project mainly evaluates the ability of all-media journalists to obtain information, interview information, and check information, as well as their awareness of self-protection. In the task-driven aspect, the abilities and skills to be assessed are divided into preparation before the interview, background acquisition, obtaining news clues, interview plan, interview outline, interview questions, news writing, news release, and other links. Different tasks and tests are set up in each link. For example, when interviewing doctors, appropriate questions can be asked about what aspects of the event. After the selection of all-media reporters, warm tips will be given for attention. Human-computer interaction friendly interface, not only promotes the exploration desire of all media journalists, at the same time but also strengthens the adhesion of virtual simulation experiment platform users.

4.2.3. Evaluation of Experimental Results. The evaluation of experimental results takes students as a group to evaluate the virtual simulation experiment platform experience, and students can share their experimental experience or summarize the shortcomings of the experiment. The teacher comments and summarizes the practical operation of each group. Through continuous review between teachers and students, students can understand the significance of news interviews about public health emergencies and relevant policy requirements, master the methods and skills of news interviews of public health emergencies, and master various methods and skills of acquiring information in news interview of public health emergencies.

However, due to the difference in personal subjective evaluation, the evaluation of experimental results will be different, which becomes the most prominent problem encountered in the construction and application of the system. It is suggested to adopt the control method of process evaluation. Through the student's experimental data acquisition and data analysis of the process, teachers can maximize the student's acquire the cognition of experiment content, based on the quantitative evaluation of the data to reduce the subjective deviation of a single teacher evaluation, provide students with more diverse, more objective, more comprehensive evaluation, stimulate students to raise their ability of practice better. The feedback mechanism of the system needs to be further improved.

Virtual simulation technology breaks through the original traditional classroom teaching method in the emergency news interview system, successfully infiltrates into the practical dimension that news and communication are particularly missing, changes the existing information interaction structure, and combines online and offline innovative modes. A new ecological development environment of practical education was established by using various experimental teaching methods such as scene virtual restoration, task-driven, and online testing.

4.3. System Application Effect. Six months after the operation of the system, the author issued questionnaires to 498 students who had used or had contact with the platform. A total of 498 users were undergraduate students majoring in journalism and communication who had graduated or were in the first, second, and third grades. A total of 317 valid questionnaires were recovered after excluding irrelevant invalid samples. SPSS23.0 was used to analyze the data in this paper. In the dimension of frequency analysis, response percentage = number of response cases/total number of responses, and case percentage = number of response cases/number of effective cases are taken as the benchmark, and the data results are shown in Table 1.

In order to test the application effect of virtual simulation news interview platform, six response variables are set. As can be seen from Figure 8, 84.8% chose "improved ability of cooperation, expression, and communication"; 79.9% of the students chose "deepen the understanding and memory of knowledge"; 76.4% of the students thought they have solved practical problems in practice. Nearly 70% of the



FIGURE 7: Enter the virtual simulation experiment platform.

TABLE 1: Application effect of virtual simulation news interview platform based on creator.

	The response		Percentage of cases (%)	
	The case number	The percentage (%)		
The application effect of virtual simulation news interview platform ^a	Deepen the understanding and memory of knowledge	247	18.5	79.9
	The ability of cooperation, expression and communication has been improved	262	19.7	84.8
	Know how to use what I've learned to solve problems	236	17.7	76.4
	The ability of knowledge acquisition and utilization has been improved	216	16.2	69.9
	Improve the ability to analyze and solve problems	215	16.1	69.6
	The ability of autonomous learning has been improved	157	11.8	50.8
Total sum	1333	100.0	431.4	

^aBinary groups are tabulated with a value of 1.

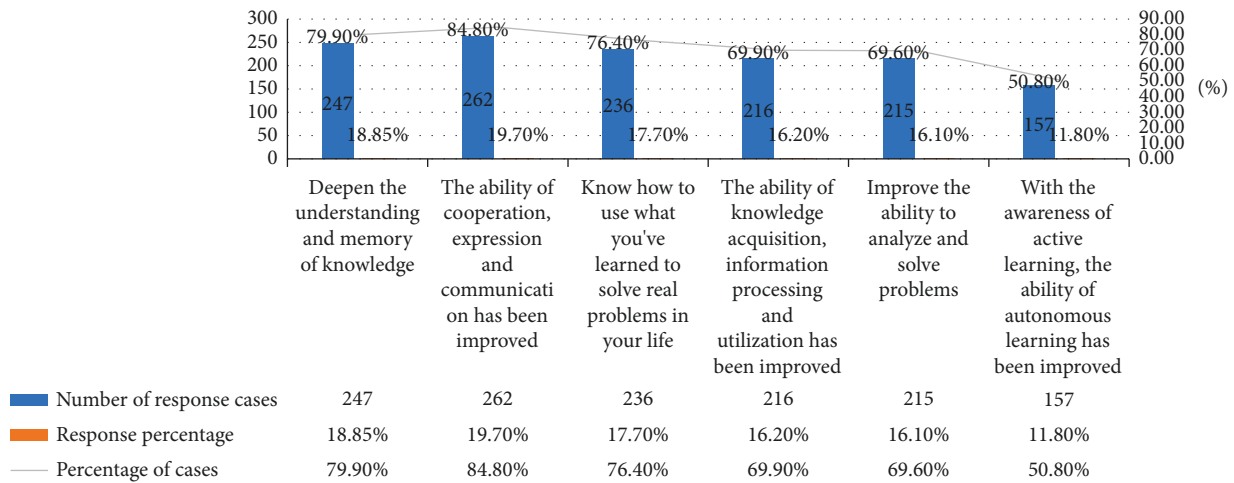


FIGURE 8: Response variables of virtual simulation news platform application effects.

students believe that their abilities in knowledge acquisition, information processing and utilization, problem analysis, and problem-solving have been improved. In addition, about 50.0% of the students believe that their active awareness of learning has been enhanced and their ability to do independent learning has been improved. Data show that the application of the virtual simulation emergency news interview platform based on Creator improves students' teamwork, knowledge understanding, analysis and solution of practical problems, autonomous learning, and other aspects to varying degrees.

5. Conclusion

This paper describes the architecture and design ideas of the virtual simulation emergency news interview system, and mainly studies the key technical issues such as important instance technology and texture mapping of 3D interactive simulation. Taking the COVID-19 public health event as the carrier of virtual environment, in the virtual simulation system, Design and realize the construction of the whole three-dimensional interactive simulation system can be stable in real-time operation. First of all, in the process of system implementation, the problem of how to interact and optimize the model in the system, the modeling technology of 3D model, and how to create the simulation effect of the real environment are solved. Secondly, this paper stated the application method of the system, through the questionnaire investigation, using SPSS23.0 feedback data to make further analysis to the users, set up six response variables, test and application effect of virtual simulation platform of news interview, case percentage points more than 50%, the function of show that the system has good scalability, The expected functions of system module 3D modeling and real-time simulation have been realized. The research shows that virtual simulation technology can be successfully applied in the field of news and communication, changing the current single information interaction mode.

The design of this system has been directly applied in practice and has been piloted in the major of network and new media. The simulation system and traditional classroom teaching of news interviews complement each other and are recognized by teachers and students majoring in journalism and communication. After the system becomes more mature, the category of news events on the platform will expand to a broader category of natural emergencies and social emergencies. The innovative construction of the experimental system opens up the first step for the application of virtual simulation technology in the field of journalism and communication and provides the research foundation and certain practical experience for further expanding the application effect of virtual simulation technology in the field of journalism and communication.

Data Availability

The data used to support the findings of this study are available from the author upon request.

Conflicts of Interest

The author declares that she has no conflicts of interest or personal relationships that could have appeared to influence the work reported in this paper.

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References

- [1] J. Yang, "Research status and development of virtual reality technology at home and abroad," *Information/Communication*, vol. 1, pp. 50–56, 2020.
- [2] D. Yang, "The new normal of virtual simulation teaching under the vision of internet +," *Journal of tianjin association of vocational colleges*, vol. 20, no. 8, pp. 47–50, 2018.
- [3] H. Liu, Y. Song, and L. T. Ma, "Development status of virtual simulation teaching," *Education Teaching Forum*, vol. 17, pp. 124–126, 2020.
- [4] F. Wang, "Analysis of the construction of the teaching project of news communication class virtual simulation experiment teaching projects," *Satellite TV and Broadband Multimedia*, vol. 17, no. 8, pp. 8–13, 2020.
- [5] Y. Wang and T. Zhang, "Research on virtual simulation test teaching of computer network courses based on university data analysis," *Science and Technology Vision*, vol. 12, pp. 124–132, 2019.
- [6] X. P. Sun and L. Chen, "Design framework of computer network virtual experiments under large data," *Laboratory Research and Exploration*, vol. 36, no. 12, pp. 113–124, 2018.
- [7] L. Q. Feng, W. H. Zhang, and Z. Ren, "Research on virtual experimental teaching design for constructivism," *China Education Technique and Equipment*, vol. 15, pp. 119–127, 2018.
- [8] L. Chen, "Research on Architecture of High School Information Technology Virtual Simulation Experiment Platform Based on VRP", Ningbo: Ningbo University, 2017.
- [9] G. M. Deng and T. Yan, "Cross-media learning styles, theories and resource Environment for the Intelligent Age- Inspiration from international multimedia learning research," *The Journal of Distance Education*, vol. 15, pp. 61–69, 2019.
- [10] Q. Yao, "Discussion on the application of virtual simulation technology in the construction of news communication laboratory," vol. 2pp. 139–152, New West, 2019.
- [11] M. Wu and L. Chen, "Research on teaching application of Media major based on Virtual simulation technology," *Journal of Beijing University*, vol. 6, pp. 57–67, 2018.
- [12] Z. Q. Wei and Y. J., "Discussion on application strategy of national demonstration virtual simulation experiment teaching project," *Experimental Technology and Management*, vol. 35, no. 9, pp. 236–238, 2018.
- [13] G. S. Chasson, C. Elizabeth Hamilton, A. M. Luxon, A. J. De Leonardis, S. Bates, and N. Jagannathan, "Rendering promise: enhancing motivation for change in hoarding disorder using virtual reality," *Journal of Obsessive-Compulsive and Related Disorders*, vol. 25, Article ID 100519, 2020.

- [14] V. V. Andreev, L. N. Vasilieva, V. I. Gorbunov, O. K. Evdokimova, and N. Timofeeva, "Creating a psychologically comfortable educational environment as a factor of successful academic program acquisition by technical university students," *Universal Journal of Educational Research*, vol. 8, no. 10, pp. 4707–4715, 2020.
- [15] L. M. Putz, F. Hofbauer, and H. Treiblmaier, "Can gamification help to improve education? Findings from a longitudinal study," *Computers in Human Behavior*, vol. 110, Article ID 106392, 2020.
- [16] D. X. Li, "Research and design of subway driving Simulator based on computer simulation technology," *Electronic test*, vol. 15, pp. 20–25, 2016.
- [17] Y. L. lu and W. Q. Dong, "Construction and practice of virtual simulation experiment Teaching center for material specialty," *Laboratory research and exploration*, vol. 37, no. 11, pp. 153–157, 2018.
- [18] Q. S. Yao, J. Y. Qin, and X. H. Zhang, "Thinking on the application of virtual simulation experiment teaching in molecular biology experiment teaching," *Health vocational education*, vol. 38, no. 5, pp. 82–83, 2020.
- [19] Z. Y. Liu, "Research on virtual simulation experiment teaching reform of journalism and communication specialty," *Guide to journalism studies*, vol. 12, no. 3, pp. 36–39, 2021.
- [20] Y. L. Fan, "Research on the Influencing factors of virtual simulation experiment teaching project sharing application," *Interview and editing*, vol. 8, pp. 140–145, 2021.
- [21] F. Yang and X. W. Sun, "Research on practical teaching of journalism communication based on virtual reality Technology," *Media education*, vol. 21, pp. 104–110, 2021.
- [22] A. A. Boniello and A. A. Conti, *Minecraft Our City, an Erasmus Project in Virtual World: Building Competences Using a Virtual World*, pp. 293–315, IGI Global, Pennsylvania, 2021.