

Research on the Application of Virtual Reality Technology in the Teaching of Network and New Media Majors

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Abstract: Blending interactive immersion with imaginative experience, virtual reality (VR) provides crucial breakthroughs in innovative teaching approaches. Network and new media studies are rather new in the interdisciplinary jungle of universities and should, therefore, catch up to the technological level of real-life industries, nurturing applied talents endowed with both field-specific skills and inspiration. Nevertheless, professional teaching has always enjoyed some real-world hurdles—underdeveloped practical scenarios, with technological updates that have fallen behind. The arrival of VR technology allows for the construction of simulated real media production environments and the creation of learning scenarios bridging time and space. The application value of this technology does not just lie in its capacity to empower media production; it signals the reconstruction of teaching logic and knowledge transmission modes. At first, VR technology will reach general curricular orientation in professional teaching, from virtual studios to the attention towards the definition of interactive digital content. However, in this popularization process, several challenges will present themselves: equipment costs, teacher adaptation, and the absence of a teaching evaluative mechanism. How to ameliorate VR's educational potential alongside its technological potential continues to be a vital proposition for driving deeper integration of VR into the learning process.

1. Introduction

With the rapid iteration of the network and new media industry, the requirements for talent training are increasingly high. The traditional classroom teaching mode, which is mainly about lecturing theoretical knowledge with a relatively weak connection to practical aspects, will bedevil the needs of students dealing with complex digital scenes. With virtual reality technology, a new path opens for breaking such teaching space limitations and enhancing the learning experience by embodying an immersive environment that integrates the reality with the realistic one. Some colleges have attempted to apply VR technologies to news gathering and editing simulations, digital marketing training, etc., but the product-scope application presents a fragmented character and not yet formed a systematic teleology. Issues like the high technological threshold, poor quality of VR resources further inhibit uptake. Unlike other teaching tools, another unique feature is that VR technology cannot substitute for learning in class. Instead, VR technology acts by stimulating

students' conscious cognization, which allows for moving from passive receivers to active constructors through contextualized task-driven streams. The unique task for educators in light of professional characteristics is to explore the deeper role of VR technology and the latter's impact on teaching collaboration and the incubation of original content in the teaching scenarios of the network and new media majors. In addition, this study provides theoretical support and possible practical reference for the construction of a new technology-enabled education ecology.

2. The current status of the application of VR virtual reality technology in the teaching of network and new media majors

2.1. Application Scope and Degree

The application of virtual reality technology in the teaching of network and new media majors is gradually expanding, but the degree of penetration still varies significantly. At present, the technology mainly focuses on course modules with strong practicality, such as news gathering and editing, digital content production and new media operation. Some colleges and universities have introduced virtual studio systems, allowing students to complete the whole process of operation from script design to film output in a simulated media production environment; digital marketing courses build dynamic consumption scenarios with the help of VR technology to help learners analyze user behavior trajectories in an immersive manner. In the short video creation course, for example, students wearing VR equipment can freely adjust the lighting, camera position and props layout of the virtual shooting site, breaking through the physical limitations of the traditional laboratory. However, this kind of application is mostly concentrated in head institutions with abundant teaching resources, while ordinary colleges and universities, limited by equipment costs and teacher reserves, still focus on fragmented scene experience and lack systematic course integration. In most cases, VR is only embedded in the teaching process as an auxiliary tool, and the interaction design favors one-way operation, making it difficult to stimulate students' creative participation. It is noteworthy that the number of virtual projects co-constructed by the industry and institutions is gradually increasing, for example, brand planning practical training in the meta-universe or e-commerce live virtual scene development, this kind of industry-teaching integration mode is promoting the deep development of technology application, but the iteration speed of the content is often lagging behind the industry's actual needs [1].

2.2. Problems and Challenges

The application of VR technology in teaching the network and new media major is gradually expanding, but different entities enjoy the technology to different levels. Currently, the technology is concentrating on practical course modules, such as news gathering and editing, digital content production, and new media operations. Some colleges and universities introduced virtual studio systems to let their students engage in the entire script design to output process in a simulated media production environment. The dynamic consumption scenarios of the VR technology help analyze an immersive learning experience for user behavior trajectories in digital marketing courses. For example, in a short video creation course, students use VR equipment to freely adjust lighting, camera position, props layout, etc., thus breaking through physical limitations in the traditional lab. However, this kind of application is concentrated mostly at head institutions with ample teaching resources, whereas ordinary colleges and universities still focus on fragmentary scene experiences due to the restrictions incurred by equipment costs and teacher reserves. Oftentimes, VR is merely appended into teaching processes as an auxiliary tool, and interaction design favors one-way operations with poor student creative participation motivation. It is worth noting that the number of virtual projects jointly created by the industry and institutions is gradually increasing, such as brand

planning practical training in the metaverse, or e-commerce live virtual scene development: this integration pattern between industry and teaching is furthering the in-depth development of technology application. However, content with the iteration speed is still inferior to the real industry needs, so it lags behind.

3. Advantages of VR virtual reality technology in teaching network and new media majors

3.1. Providing immersive learning experience

The immersive learning experience created by virtual reality technology for the teaching of the Network and New Media major has reconstructed the cognitive boundaries of traditional classrooms. In practical courses like news gathering and editing, and digital content creation, students use VR devices to enter a three-dimensional dynamic virtual environment, where the deep coupling of senses and cognition breaks the sense of estrangement caused by the screen medium. For example, in the short-video creation course, students can be in a virtual shooting site and independently control multi-camera perspectives. The real-time feedback of light and shadow changes and spatial sound fields allows them to intuitively understand the impact of shot language on narrative tension. In data journalism teaching, abstract information maps are transformed into tangible and disassemblable three-dimensional models. Learners can shuttle through dynamic data streams from a first-person perspective, enabling them to simultaneously gain micro-insights into user behavior and macro-grasp of communication laws. This embodied cognitive mode subverts the two-dimensional "observation - imitation" path in traditional teaching. Students actively construct a knowledge system in scenarios where the virtual and real are intertwined, and their cognitive process shifts from passive reception to context-driven meaning generation. The immersion empowered by technology doesn't simply pursue sensory stimulation. Instead, it activates students' multimodal perception through a highly realistic environment, establishing a deep connection between theoretical concepts and operational experiences. When students are planning a virtual brand press conference or crisis public relations simulation as "present participants," the decision-making pressure and immediate feedback mechanisms further enhance the efficiency of knowledge transfer, laying a cognitive foundation for dealing with complex challenges in real industry scenarios [2].

3.2. Enhancing the effect of practical teaching

The effectiveness of virtual reality technology for network and new media professional practice teaching is enhanced by its high-precision reproduction of real industry scenes and dynamic interaction support. Key aspects of traditional teaching that are limited by equipment configuration and site conditions, such as e-commerce live process rehearsal and cross-platform content distribution testing, can be fully developed in the virtual space. Students can adjust the product display, lighting atmosphere and user pop-up data flow in real time in the virtual live room, and the system instantly generates traffic fluctuations and user feedback, which enables them to intuitively understand the dynamic correlation between the operation strategy and the communication effect. In the interaction design course, the 3D interface prototype can be repeatedly disassembled and reorganized in the virtual space, and the visualization of material touch and user operation paths transforms abstract design principles into perceptible physical feedback. This lossless trial-and-error mechanism not only avoids the risk of physical equipment loss, but also provides an accurate basis for teaching reflection through multi-dimensional data recording. Technical support for the practice of closed-loop breaks the time and space barriers of traditional practical training, students from a single operation imitation advanced to systematic thinking training, the efficiency of the industry cutting-edge skills acquisition significantly improved. Educational observation shows that the

muscle memory and decision-making experience accumulated in the virtual environment can be effectively transferred to real work scenarios, especially when dealing with unexpected situations and complex tasks, students show more mature adaptability.

3.3. Promoting the cultivation of innovation ability

Virtual reality technology has opened up a multi - dimensional experimental space for cultivating the innovation ability of students majoring in network and new media. In traditional teaching, the creative verification links that are difficult to carry out due to physical conditions and resource limitations are transformed into instantly iterable digital sandboxes in the virtual environment. For example, in the metaverse brand curation course, students can freely construct surreal exhibition spaces and map user behavior data into dynamic interactive devices in real - time, breaking through the budget and venue constraints of physical curation. In the interactive narrative design teaching, non - linear plot branches are visualized as a path network in the virtual scene, allowing creators to intuitively test the rationality of the narrative logic by switching character perspectives. The zero - cost trial - and - error environment created by the technology relieves students' psychological burden when facing physical projects and stimulates their bold exploration of media forms and communication strategies. In the hybrid teaching model where augmented reality information is superimposed in the virtual space, students can operate 3D interface prototypes and real devices simultaneously, and cross - media fusion creativity naturally emerges in embodied operations. Educational practice shows that the high - frequency instant feedback and scene reset functions in the virtual environment prompt students to form a creative thinking closed - loop of "conception - verification - iteration". This training of the ability to transform abstract creativity into spatial and interactive objects is reshaping the innovation genes required for new media talents to cope with the rapid industry changes [3].

4. Application Strategies of VR Virtual Reality Technology in the Teaching of Network and New Media Majors

4.1. Optimization of teaching content and curriculum system

The integration of virtual reality technology with the curriculum system of network and new media majors needs to reconstruct the hierarchical design of teaching content with the orientation of ability progression. Lightweight virtual scene training modules are embedded in basic courses, such as setting up 3D dynamic poster design units in visual communication courses, where students intuitively understand the communication logic guided by visual focus by adjusting the light and shadow parameters and movement trajectories in virtual space; advanced courses focus on interdisciplinary integration of complex scenarios, and integrate data visualization, interaction design and new media operation into virtual project-based courses. Taking digital marketing teaching as an example, a dynamic market environment simulation system can be constructed, and students need to complete the analysis of user profiles, advertisement placement testing and communication effect tracking in the virtual consumption scenario synchronously, and the modular disassembling and reorganization of the real industry project strengthens the coherence of knowledge application. Curriculum iteration needs to pay attention to the balance between technical tools and creative expression, to avoid falling into the misunderstanding of equipment operation training, for example, in the short video creation course, the teaching of virtual filming tools should focus on the innovation of the language of the scene rather than simply memorizing technical parameters. Some colleges and universities try to transform industry certification standards into virtual practical training levels, and after students complete virtual tasks such as meta-universe brand planning, cross-platform content distribution, etc., the system automatically generates

competency maps and pushes targeted intensive training.

4.2. Innovation of teaching methods and means

The teaching method innovation driven by virtual reality technology is reshaping the classroom ecology of network and new media majors. The hybrid teaching mode organically connects virtual training with theoretical lectures, and the teacher's role is transformed from a knowledge transmitter to a scene builder and a thinking guide. In the virtual newsroom scenario, when students operate the whole-media content production process in groups, the teacher can cut into any link in real time to provide corrective guidance, and the dynamically adjusted difficulty coefficients make the teaching rhythm more in line with the individual cognitive curve. The intelligent assessment system captures students' operating trajectories and decision-making paths, generating a visual ability analysis map to provide a basis for the development of personalized learning programs. In the live e-commerce teaching, the virtual simulation system can simulate special situations such as sudden disconnection and public opinion crises, and students can independently debug the equipment parameters and tactics in a stressful environment, and the contingency plans recorded by the system are automatically transformed into teaching casebook resources [4]. Some of the courses try to build cross-regional virtual collaboration projects, where students from different institutions plan virtual exhibitions together through digitalization, and the creative collision inspired by cultural differences injects multiple perspectives into the creation of new media content. The technology-enabled dynamic sand table deduction mechanism enables abstract concept teaching to be visualized as an interactive cognitive construction process. For example, in the explanation of the principle of algorithmic recommendation, students can observe the immediate changes of the content distribution path by adjusting the virtual user profile labels.

4.3. Development and utilization of teaching resources

The development and utilization of virtual reality teaching resources requires the construction of a modularized system of layered classification and the formation of a sustainably updated digital asset library. The professional foundation layer builds a standardized virtual scene library, covering common templates from virtual studios to three-dimensional product display spaces, which supports teachers to call and create twice according to their needs; the feature expansion layer focuses on regional culture and industry needs, for example, transforming local non-legacy skills into interactive virtual workshops, so that students can not only master the new media production technology but also understand the modern translation of cultural symbols in depth in the process of digital restoration. Logic. The resource sharing mechanism breaks down the barriers between institutions. The cloud-based resource platform jointly built by different institutions supports the collaborative development of virtual scenarios and copyright tracing, and the original teaching scenarios uploaded by teachers can be transformed into standardized resources for the use of the alliance institutions after being reviewed and approved by the Academic Committee. Dynamic access to cutting-edge industry resources is especially critical. The virtual case pack developed in cooperation with head enterprises integrates user behavior data and emergency scripts from real projects, so that students can come into contact with the latest live broadcasting tactics adjustment strategies or public opinion response plans in the virtual space. Resource iteration needs to establish a teaching feedback driving mechanism, the operating heat map and cognitive trajectory data of the students in the virtual training are analyzed by machine learning to automatically optimize the scene complexity and interaction node design to ensure that the teaching resources are always dynamically adapted to the cognitive laws of the learners.

4.4. Improvement of teachers' ability and training

The promotion of virtual reality teaching paradigm puts forward brand-new requirements on teachers' ability structure, and it is necessary to build a dual-track training system of “technology empowerment + education reconstruction”. Specialized training focuses on the training of design thinking for virtual teaching scenarios. Teachers learn to transform abstract knowledge points into interactive three-dimensional learning modules under the guidance of embodied cognition theory by participating in virtual teaching and research projects, for example, designing the phenomenon of the information cocoon in communication science into a traversable virtual information maze. The industry linkage mechanism introduces enterprise technical experts into teacher training, and new media operation teachers can participate in the whole process of virtual live room development, mastering the underlying logic of linking user behavior data and virtual scenes. The tiered certification system establishes qualification standards for virtual teaching designers, with the primary certification focusing on the operation of basic tools and the application of standardized scenarios, and the advanced certification requiring the completion of the original development of interdisciplinary virtual course packages. Teacher development centers established by institutions can set up a virtual teaching case sharing platform, which includes typical cases with design idea disassembling videos and student cognitive data feedback, forming a dynamically updated experience database. Some pioneering teachers have tried to form a cross-campus virtual teaching and research community to collaborate on the development of a meta-universe brand marketing sandbox in the cloud, where the practical wisdom of different institutions is precipitated into reusable teaching gene fragments [5].

5. Conclusion

The integration of virtual reality technology with the teaching of network and new media majors marks the digital transformation of education into a deep water zone. The essence of technological empowerment is not to pursue tool innovation, but to cultivate composite talents adapted to the future media ecology by reconfiguring the teaching relationship and knowledge production mode. Current practice shows that VR technology is effective in enhancing learning immersion and optimizing the efficiency of practical training, but its application still needs to be alert to the tendency of technological supremacy. The dynamic adaptation of teaching content and curriculum system, the systematic enhancement of teachers' digital literacy, and the design of evaluation mechanism combining virtual and real are the core elements to ensure that the application of technology does not deviate from the essence of education.

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