

Research on Training Mode of Virtual Reality Skill Talents with "Integration of Post Class Competition Certificate" as the Core

Guangke Qi

Wenzhou Polytechnic, China

Abstract

With the rapid development of modern science and technology, virtual reality technology has been applied in many fields, and more and more "core", the training of virtual reality application technology professionals has also caused more attention of the society. Under such circumstances, many universities in our country have set up virtual reality application technology major, and each has a characteristic in the construction of talent training mode. However, from the perspective of the quality of talent training, the application of new technology poses great challenges to professional teachers.

Keywords

Post Course Competition Certificate; Virtual Reality; Talent Training Mode.

1. Introduction

Teachers in most schools are transferred from other majors or industries, and there are some problems such as backward technical level and insufficient practical ability, and unreasonable professional curriculum setting. The virtual reality skill talent training mode with "integration of post courses and certificates" as the core aims to solve such problems. The job and vocational skills, vocational skills grade standard, vocational skills competition and professional curriculum system should be organically integrated, and all elements should integrate and promote each other. Through the analysis of core positions, core competencies, professional skill competition standards and skill certificate standards, the core courses of majors are determined, the curriculum system of virtual reality majors is constructed, and the training program of professional talents is improved. Improve the important foundation of students' vocational skills for better development, and train more excellent talents in new technology; Based on the social needs, effectively promote the professional teaching content and The Times; The important position of the virtual reality major in the professional group of artificial intelligence is clarified.

2. Research Status

As of May 4, 2022, the author uses CNKI as the main retrieval platform and searches with different keywords of "post, competition and certificate". The search results are shown in Table 1. "Post course Match Certificate + Virtual Reality" is a keyword search, and there are 36 research papers in total. All the papers in the search results are articles of post course Match certificate integration of other majors combined with virtual reality technology, and no papers directly study post course Match certificate integration of virtual reality majors. Feng Fan, Zhou Liping et al started from automotive majors and big data and accounting majors respectively. Put forward the implementation of vocational skill level certificate system, strengthen the integration of "post course competition certificate", innovative professional school-enterprise cooperation personnel training program. With the keyword search of "virtual reality and 1+X" and "virtual reality + skill certificate", the author has explored 17 talent training modes related

to virtual reality major. Li Hexiang started with the problems faced by "1+X" virtual reality application development grade certificate system and proposed the construction of virtual reality talent training mode. "Virtual reality + competition" as a keyword search, a total of 94 papers related to the research on the training mode of virtual reality professionals. Zeng Tianshan et al proposed the national vocational college skills competition, which played a leading and demonstration role in the reform and development of vocational education. With "virtual reality + integration of production and education" as the keyword search, a total of 7 papers related to the research on the training mode of virtual reality professionals, mainly. To sum up, at present, there are few researches on "post course competition certificate" for virtual reality major in China, and the research time is short, mainly starting from 2020. Most of the researches are from skills certificate, post and skill competition which are integrated into the talent training of virtual reality major, and there is a lack of researches on "post course competition certificate" which is integrated into the talent training program for virtual reality majors from multiple perspectives. The reason is that the major of virtual reality technology application is a new major with short development time, and there are few researches on the talent training program related to it. As a large number of colleges and universities have successively opened professional courses of virtual reality technology, virtual reality technology has been continuously innovated and improved in recent years, with the double support of the rapid improvement of hardware equipment performance and software programming technology, the business model of VR virtual reality technology is becoming more and more mature, the business map has been formed, and the related ecological chain is becoming more and more perfect in the continuous adjustment. A large number of trained professionals have been able to supplement the VR industry. Meanwhile, the application scope of VR virtual reality technology in different industries has been continuously popularized and expanded, as shown in Table 1.

Table 1. Keyword Search Table

No	Keywords	Number of papers	Primary Coverage
1	Virtual Reality+Post Course Competition Certificate	36	Other majors combine virtual reality technology to conduct post course competition certificate financing
2	virtual reality + 1+X virtual reality + Skill certificate	17	The virtual reality application development grade certificate system faces the question to start, proposed the virtual reality talented person training pattern construction
3	virtual reality + competition	94	The national vocational college skills competition has played a leading and exemplary role in the reform and development of vocational education
4	virtual reality + Integration of production and education	7	Cultivate high-quality talents by "cooperation between production and learning, seeking common development"

3. Main Research Contents

The main research content of this topic is the research on the training mode of virtual reality skill talents with the core of "integration of post course competition certificate". With the core of "integration of post course competition certificate", it integrates the job post, curriculum system, vocational skill competition and vocational skill level certificate into each stage of talent training, requiring vocational colleges to deepen the integration of production and education, and strengthen the depth and breadth of cooperation with well-known enterprises. According to the industry, industry and market requirements for talents, combined with the advantages and characteristics of the university's own development, organically integrate the 1+X

certificate system and vocational skills competition, promote the organic connection between industry and major, post and course, and further enhance the adaptability of talents training; This project will be divided into five stages from the first year to the third year, to determine the ability of each stage students need to have the goal, gradually develop professional quality, progressive improvement of professional ability; From the perspective of the market, the field and the workplace, cultivate the skills talents that meet the needs of the market, the field and the workplace, and gradually improve the practical ability of students; With "integration of post courses and certificates" as the core, the "five-order and three-stage" talent training mode is used to cultivate high-quality virtual reality technicians, 3D modelers, animation designers and other skilled talents in line with industry standards, as shown in Figure 1.

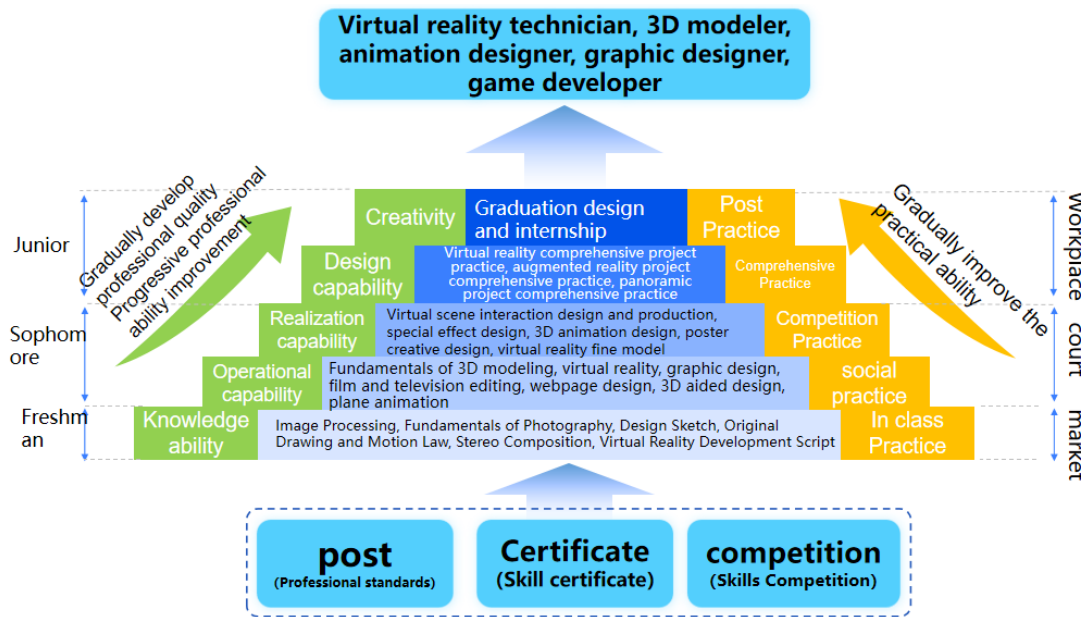


Figure 1. Talent training mode

3.1. Integration of Posts and Courses

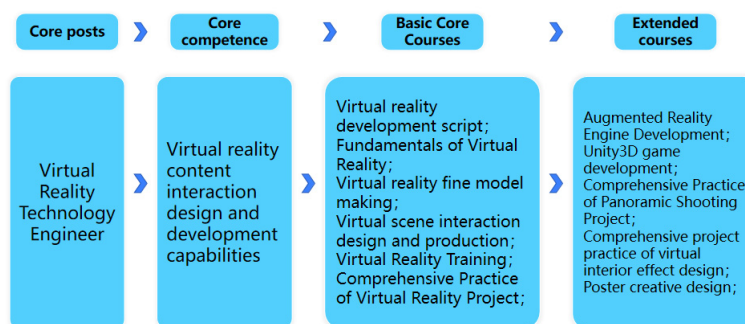


Figure 2. Integration of posts and courses

Before and after the professional with Shanghai Hyman Heng Digital Technology Co., LTD., Zhongke Taiyue (Beijing) Technology Co., LTD., Yilian Technology Network Co., LTD and other enterprises to maintain long-term in-depth integration of industry and education cooperation. According to the enterprise interview and industry survey, the major core positions are determined as: virtual reality technical engineer. Virtual reality and its related fields of work mainly include: virtual reality technology application development, computer programming and development, 3D modeling, 3D animation and other enterprises and public institutions in the virtual reality application design and production related fields of product planning, design,

coding, testing, maintenance and service departments and positions. According to the standard of "virtual reality technical engineer" of the new occupation, the core competence of the major is determined, so as to determine the core curriculum and extension curriculum of the major, as shown in Figure 2.

3.2. Integration of Certificates and Courses

The major skill certificates include: Adobe International Certification, Digital Creative Modeling Skill Certificate, and Virtual Reality Technical Engineer Skill Certificate. The introduction of international standards, from the shallow to the deep, step by step into each stage of the course teaching, in order to meet the individual needs of students, expand the caliber of students' employment, for the pluralistic society to cultivate compound talents.

3.3. Integration of Competition Courses

Table 2. Competition and Course Accommodation Table

Curriculum Events	Plane direction	Film and television animation	VR interaction
digital image processing	√		
graphic design	√		
3D Animation Design and Production		√	
Introduction to Game Engine		√	√
Virtual reality fine model making	√	√	√
Virtual scene interaction design and production		√	√
Special effect design		√	
Film and television editing		√	
Poster creative design	√		
Augmented Reality Application Development			√
Plane Animation Design and Production	√	√	
Comprehensive Practice of Virtual Reality Project		√	√
Comprehensive Practice of Augmented Reality Project		√	√

The major currently participates in the following skills competitions: National Vocational College Skills Competition, World Skills Competition 3D Digital Game Art Competition, New Vocational Skills Competition Virtual reality technology Engineer competition, Zhejiang University students Multimedia Works Competition, College Students Creative Advertising Design Competition, Future Designers National College Digital Design Competition, China Good Creative Digital Design Competition, Internet + Entrepreneurship and Entrepreneurship Competition, etc. According to the direction, the competition can be roughly divided into graphic design direction, film and television animation direction and VR interactive direction. Different competition items are integrated into professional courses, as shown in Table 2. The course teaching content, homework and final works are combined with the competition standards, so that every professional teacher and student can participate in the competition,

and truly promote teaching through competition. By participating in vocational skills competition and various discipline competitions, it can drive the discipline construction of colleges and universities and promote the enthusiasm of teaching quality improvement. At the same time, the transformation of the results of the competition can feed back the improvement of the curriculum system and quality evaluation system of colleges and universities, forming a positive cycle of teaching reform, as shown in Table 2.

4. Key Issues Addressed

4.1. Strengthen the Dynamic Adjustment of Talent Training Program

With the "post Course Competition Certificate" as the core, the professional standard of the core post, skill certificate, skill competition into each stage of talent training; From the first year to the third year, there are five stages. At each stage, students need to have the ability goal, gradually develop professional quality and gradually improve professional ability. From the perspective of the market, the field and the workplace, cultivate the skills talents that meet the needs of the market, the field and the workplace, and gradually improve the practical ability of students; With the "integration of post courses and certificates" as the core, the "five-order and three-stage" talent training mode is used to cultivate high-quality virtual reality technicians, 3D modelers, animation designers and other highly skilled talents in line with industry standards. With the development of the economy and the continuous updating of the industry, the job demand and career orientation of virtual reality technology application majors will definitely not remain unchanged forever, but will surely change accordingly. It is necessary to keep close to the latest technology, combine with the post standards and changes of artificial intelligence professional groups, and continue to update the talent training program.

4.2. Reconstructing Curriculum System and Developing Modular Curriculum Resources

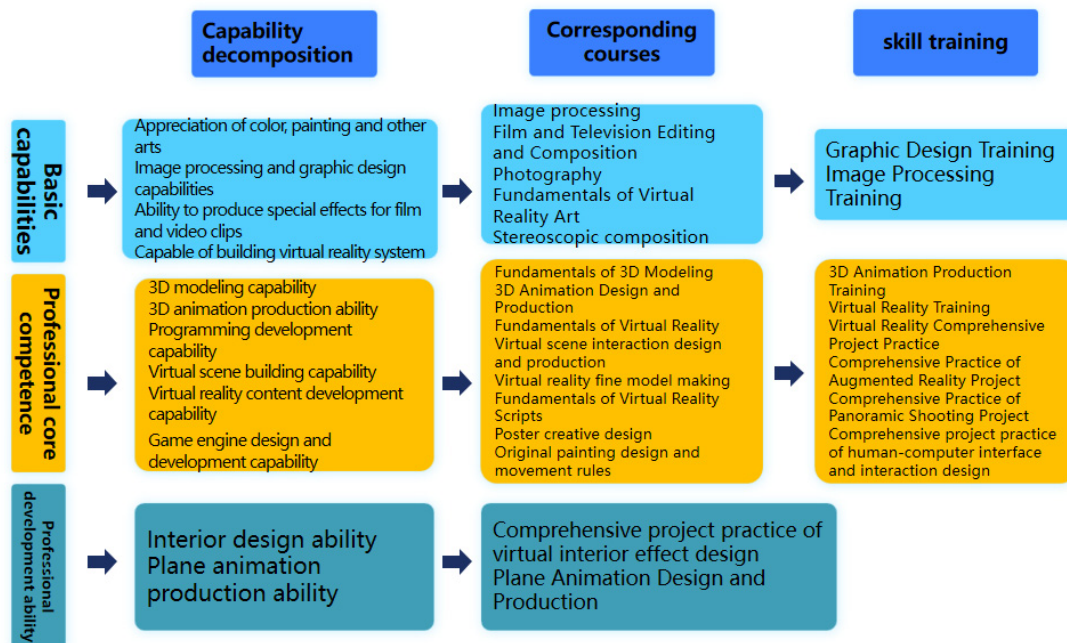


Figure 3. Decomposition of professional competence

Through the combing of professional core competence, the professional competence is decomposed into basic competence, core competence and expansion competence, and the professional curriculum system and practical training system are reconstructed according to

the decomposition of competence, as shown in Figure 5. Integrate the knowledge points and vocational skills, reconstruct the course in a modular way, pay attention to the increase of practical teaching links, improve the adaptability of the course. The teaching standards and syllabus are determined according to the skills competition standards and skills certificate requirements of the course content, so as to form a professional curriculum system, as shown in Figure 3.

4.3. Integration Plan of Post Course Competition Certificate

The major of virtual reality technology application puts forward the research on the training mode of virtual reality skill talents with the core of "integration of post class competition and certificate", and organically integrates the enterprise's job posts with vocational skills, vocational skills grade standard, vocational skills competition and professional curriculum system, so that all elements can integrate and promote each other. According to the professional skill competition and skill certificate, the corresponding knowledge and skills are analyzed to determine the professional courses. In this process, the employment standard is integrated into the curriculum system, as shown in Figure 4.

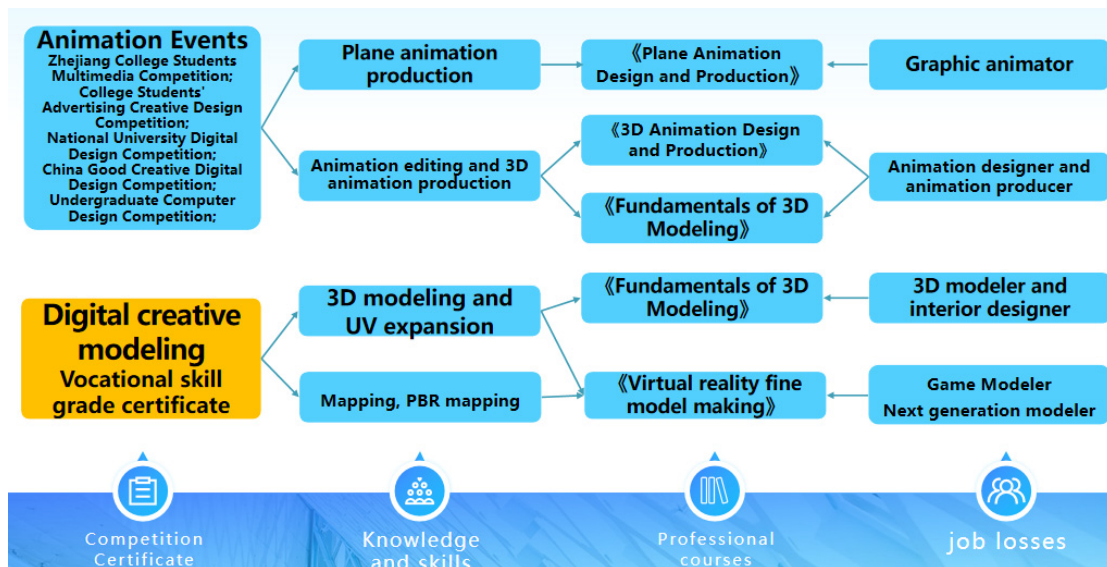


Figure 4. Integration scheme

4.4. Achievement Transformation of "Post Course Competition Certificate"

Centering on the learning results of "Post course Competition Certificate", we will realize the mutual integration and exchange of post, course, competition and certificate learning results, promote the credit system reform, promote the recognition, accumulation and conversion of various learning results, and focus on students' sustainable development. In accordance with the Implementation and Management Measures for the Integrated Project of Three Classes of the Artificial Intelligence professional Group of the College and in combination with the actual situation of the major, the grades and credits of the first class will be converted for students' skills competition, vocational qualification certification, innovation and entrepreneurship, social service, enterprise practice, professional volunteer service and other projects. The participating students can take part in the competition instead of the study of the corresponding professional courses, and can obtain the corresponding course results according to the specifications and results of the competition. The students who have obtained the certificate can also directly obtain credits and be exempted from the examination of the relevant professional courses.

5. Construction of Curriculum System for Virtual Reality Technology Application

The key to the integration of "Post Course Competition Certificate" is to link the industry and employment. The integration path can unite the industry, enterprises and schools. Through the integration of industry and education and school-enterprise cooperation, the real job group can be used to jointly analyze the job demand and career orientation, formulate the talent training program and develop the curriculum system, and integrate the contents of the school competition, the provincial competition and the national competition. Give full play to the role of the competition benchmark, maintain vitality, and integrate qualification certificates, grade certificates, training certificates, etc. to test and evaluate, supplement and enhance the dynamic adjustment of talent training programs, restructure the curriculum system, and actively develop modular course resources. The main objectives of this project include:

Integrate the vocational post standard, skill competition standard, skill certificate related standards, norms and content into the core curriculum system of the virtual reality technology application major, dynamically adjust the talent training program and reconstruct the curriculum system; Through the analysis and evaluation of the existing professional curriculum system, based on the post ability of virtual reality technicians, combined with the professional construction foundation and the current industrial development and talent needs, the core curriculum of the major is reconstructed and integrated into the professional talent training program, so as to continuously improve the flexibility, adaptability and pertinency of the training of skilled talents, as shown in Figure 5.

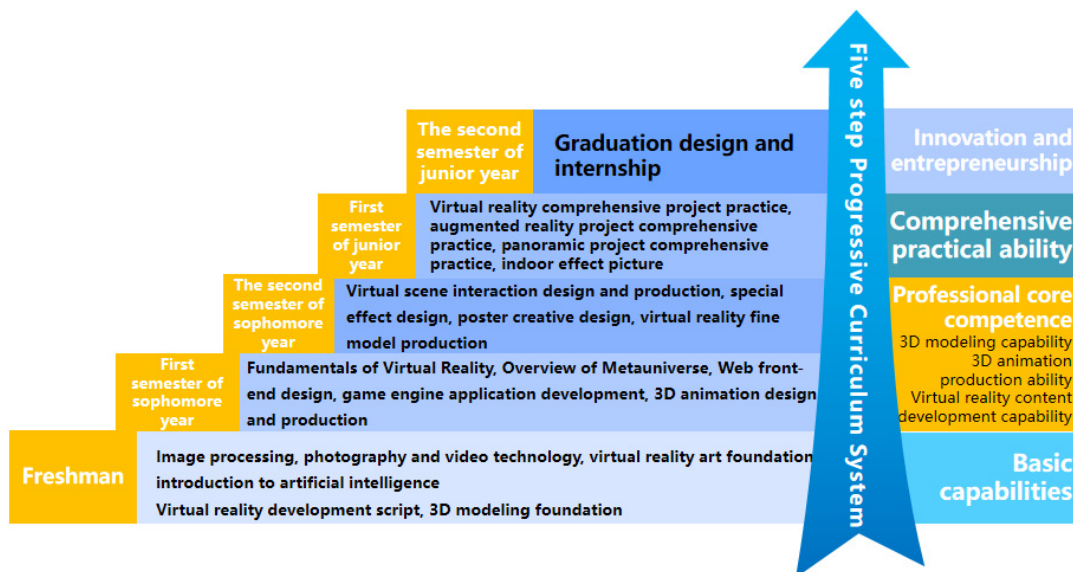


Figure 5. Curriculum system

Link industries, improve employment quality, and cultivate high-quality skilled personnel; To promote the professional teaching content in line with The Times according to the social needs; Strengthen cooperation between schools and enterprises to promote the promotion of teachers. According to the integrated needs of "Post Course Competition Certificate", optimize the construction of practical training room, establish a virtual reality practical training base suitable for professional development, and promote the good development of practical teaching.

6. Conclusion

Through project guidance, project practice, social training, enterprises, participating in teaching competition, guiding students to participate in vocational skills competition and innovation and entrepreneurship competition, etc., to improve teachers' innovation ability and social service ability; Classroom teaching should not only teach students knowledge and skills, but also cultivate students with good moral sentiment, professional quality, as well as self-improvement, self-learning ability. The integration of "Post course competition Certificate" is a process of the integration of the whole process and multiple elements, which organically integrates ideological and political elements into the curriculum system.

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