

Application of Kujiale Virtual Technology in Soft Decoration Design Course--Take Wenzhou Polytechnic as an Example

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Abstract: In order to better meet the needs of talents in enterprise positions, focusing on the vocational skills needs of target positions such as soft decoration designers and custom furniture scheme designers, the teaching content and teaching methods of high-skilled applied innovative talents are effectively extracted. Relying on the Kujiale platform, the teaching reform of the soft decoration design course is carried out, and a virtual training and practical teaching platform for the soft decoration design course is created.

1. Introduction

With the continuous improvement of people's living standards, the continuous improvement of people's living environment and living requirements, the popularity of soft decoration is also rising, resulting in a huge shortage of soft decoration design professionals and optimistic employment prospects. Therefore, in response to this development trend, many higher vocational colleges have set up soft decoration design courses to cultivate high-skilled professional soft decoration design talents to meet market demand. Through the study of relevant courses in the direction of soft decoration, students will have the basic knowledge and practical skills of soft decoration design that must be possessed in soft decoration design work.

“Soft Decoration Design” is an important main course for the furniture design and manufacturing major of Wenzhou polytechnic. The goal of the course is to enable students to master the basic content and practical operation ability of soft decoration design, so as to be able to quickly meet the job requirements of enterprises and achieve high-quality employment. Soft decoration design is a very systematic work. It needs to go through design, procurement, logistics, on-site decoration, etc. Among them, on-site decoration is an important part of testing what students have learned. However, due to the “Closeness” of school education, This late stage of practice is difficult to implement, so that talent training cannot well meet the society's training requirements for soft decoration design talents, especially the “zero-distance high-quality employment” serving the region is difficult to truly realize.

Virtual technology was first used in the military field. Since the 1980s, it has gradually penetrated into people's production and life. Its biggest feature is that it can have an interactive experience. In terms of teaching reform, many foreign universities have used virtual technology to carry out a series of educational reforms and application innovations worthy of attention and

learning. For example, in the United Kingdom, the Open Science Laboratory of the British Open University has built a 3D immersive environment that A research and development platform for virtual instruments, interactive multimedia experiments and online analysis and research, students can complete the entire experimental project through the network. In China, colleges and universities have also started to carry out research on the application of virtual simulation technology and teaching reform in different disciplines and majors.¹ The three modules of the comprehensive experimental module of packaging design and the innovation module of packaging design are the starting points to build a virtual simulation experimental teaching and innovation platform for packaging design, and apply it to practice to achieve expected results; In China, virtual simulation technology is used to use 3D virtual fitting system and CAD pattern-making software to solve the difficult problem of understanding the relationship between plane and three-dimensional modeling of ready-to-wear; another example is the application of virtual simulation technology in urban planning and design practice courses to build a virtual environment space, Realize human-computer interaction and experience realistic scenes; but it is not difficult to find that the application and development of virtual simulation technology requires large capital investment, and the starting point is difficult.

Kujiale is a future-oriented design platform and ecological solution platform for large home furnishing. The most important thing is that it does not need to invest a lot of money in the teaching stage, and it is suitable for different requirements in the teaching of soft decoration design courses. Kujiale software not only includes floor plans of different structures across the country, but also can build floor plans of different interior structures according to course requirements through Kujiale, providing a large number of soft decoration design courses for the use of virtual scenes.

Therefore, Kujiale virtual technology is introduced into the “Soft Decoration Design” course, based on new technologies, according to the training goals of professional talents, and around the functional skills requirements of soft decoration design positions, the teaching of soft decoration design courses is reformed, and the soft decoration design courses are reformed.

2. Analysis of the Current Situation of Soft Decoration Design Course Teaching

2.1 The Teaching Content is Relatively Stagnant and Not Suitable for the Development of the Industry, and It is Difficult to Meet the Needs of Soft Decoration Designers.

Soft decoration design is developed with the development of fashion and technology. It is influenced by new technologies, new information, and new trends, and it develops in constant updates and replacements. The teaching of soft decoration design courses must promptly absorb the latest achievements of technological development, the latest consultation, the latest fashion information, and update the teaching content and training methods in a timely manner to adapt to the new requirements of technical development soft decoration design positions for talents and skills. However, in the soft decoration teaching, especially in the soft decoration design training operation stage, it requires a lot of soft decoration materials and training venues, which requires a lot of capital investment, which is difficult to achieve in schools. This has resulted in the update of trend information by soft decoration design students, greatly reducing the ability to apply new technologies and innovation. At the same time, higher vocational colleges are mainly aimed at cultivating skilled talents, and do not pay special attention to the cultural and artistic accomplishment of design students, which is different from the professional quality requirements of soft decoration designers. Professional soft decoration design should have a certain understanding of history, architecture, art, economy, philosophy, fashion, etc. To this end, it is necessary to solve the contradiction between the rapid update of design material information, the rapid development of technology and the relative lag of education, and create a new situation for the training of soft

decoration design talents.

2.2 The Current Situation of Soft Decoration Design Course Teaching

The soft decoration design project in the enterprise is divided into three stages. It includes the design stage, the procurement stage and the stage of the stage. In the design stage, it is mainly to comprehensively use soft decoration elements (furniture, fabric, lamps, hanging paintings, accessories, green plants and flowers, etc.), in a specific space for a specific target group, to design a soft decoration matching their lifestyle. Then it went through the procurement stage and entered the stage of setting up the market. When the purchased products arrive at the site, the designer will properly arrange the soft furnishing products in suitable positions according to the design plan, so as to create a home environment suitable for life.

The “Soft Decoration Design” course is more suitable for the needs of enterprises for soft decoration design positions. Project-based teaching is used in teaching. Taking the real project of the enterprise as a case, combined with the arrangement of the course, the soft decoration knowledge is decomposed into customer positioning, style analysis, color analysis, conceptual soft decoration design scheme and deepening scheme to explain. Through the course study, the students have mastered the relevant soft decoration knowledge and applied it to the design of the soft decoration scheme. During the implementation of the whole soft decoration design course, a large number of soft decoration material libraries are needed to support the teaching. But until now, there is no systematic software resource library for teaching use. Teachers need to use different e-commerce platforms to meet their teaching needs. To a certain extent, with the help of the soft decoration resources in various e-commerce platforms, the teaching is promoted and the teaching is carried out smoothly. However, most e-commerce platforms do not have reasonable planning and classification for different styles of soft clothing materials, causing students to be confused about the theoretical content of soft clothing. Moreover, in the process of teaching, it is difficult for teachers to control different e-commerce platforms, making it difficult to control the classroom.

At the same time, it is also the most important point that students lack practical experience. At present, the professional skills of soft decoration design graduates generally remain in the computer design stage, and even if students have completed a complete set of soft decoration design plans, they are not very mature about the relationship between space and the size of soft decoration elements. In addition, as a professional soft furnishing designer, in addition to professional design capabilities, it is also necessary to have procurement capabilities, cost control capabilities, and capabilities such as placement and acceptance. This is of course related to many factors, of which the shortage of practical training teaching resources and training teaching venues is one of the important factors. Due to the lack of practical training rooms for soft decoration, students have limitations in skills training, and it is difficult to experience work experience related to actual positions. Therefore, how to solve the contradiction between the needs of practical training and the integration of soft decoration design job skills is also one of the educational difficulties of soft decoration design courses.

3. Analysis of Kujiale Virtual Technology

As a future-oriented design platform and ecological solution platform for large-scale home furnishing, Kujiale is committed to the research and development of cloud rendering, cloud design, BIM, VR, AR, AI and other technologies to realize the panorama of “what you see is what you get” A new mode of VR design and decoration.² Its most powerful feature is the ability to quickly establish a virtual simulation space and generate an interactive experience. According to the survey, as a front-end platform for custom furniture design, Kujiale can quickly design solutions for

customers at the storefront port, and can quickly generate panoramic renderings and quotations through cloud rendering; in the interior design industry, it launched a VR intelligent interior design platform, which realizes a new mode of “what you see is what you get” panoramic VR design and decoration. It can generate decoration plans in 5 minutes, renderings in 10 seconds, and VR parties with one click, attracting more than 3 million interior designer. Compared with soft decoration design, Kujiale platform has also settled 12,000 brand enterprises, which provides a powerful material resource library for the soft decoration design process, and can provide diversified solutions for the soft decoration home furnishing industry. Its VR&AR technology is the highlight of the virtual display function module, which can make the soft decoration design realistic, present the design plan realistically, and realize the space roaming browsing and experience without limitation.

4. Research of Kujiale Virtual Technology in Soft Decoration Design Course

According to the characteristics of Kujiale virtual technology, it is applied to the soft decoration design course. Rely on the virtual technology in Kujiale to make up for the lack of practical teaching system in the soft decoration design course.

4.1 Use the Technology in Kujiale to Carry out Teaching Reform, So as to Meet the Needs of Docking Positions.

Kujiale software application technology and job talent training are closely combined in the curriculum reform, and the soft decoration design course is reformed in combination with the post requirements of furniture designers and soft decoration design companies in Wenzhou.

Since 2012, Kujiale has gradually taken the lead in the market with its unique ideas and product concepts. Because it is suitable for beginners to learn, and it is quick to get started, and the effect of drawing is good³, more and more enterprises use it as a design tool. Then, the technical requirements corresponding to different jobs are also slightly different.

The soft decoration design positions for the store are divided into custom designers and soft decoration designers. In order to meet the needs of such soft decoration designers, the soft decoration design course is reformed, and the whole house custom design software in Kujiale is used to call the design module to quickly and automatically generate the design scheme. At the same time, a bill of materials can be generated with one click, so that students can fully understand the job requirements of store port designers. Soft decoration designers for professional soft decoration companies. In the soft decoration design course, use the Kupinxiu software in Kujiale to design the soft decoration scheme. Create a deep three-dimensional interactive experience of panorama and single product, which can be experienced in real time regardless of the venue. Check out the panorama effect of your own soft furnishing customization scheme in the panorama. At the same time, the Kupinxiu function in Kujiale is integrated into the teaching of soft decoration design courses, and the list is output quickly, and the products and other materials and styles are displayed in 720°, so as to guide students to establish brand awareness, price awareness and other job skills requirements.

Through such a teaching mode, to match the technical needs of different positions, students can quickly integrate into the atmosphere and environment of virtual practice, thereby improving students' practical ability⁴.

4.2 Based on Fiction and Reality, Use Kujiale to Build a Virtual Practice Teaching Base for Soft Decoration Design Courses⁵

Soft design and hard design are interpenetrated. In application, both are designed to enrich the conceptual space to meet the needs of home furnishing and to show people's individuality. However, in many alienated spaces, hard decoration may not solve the problems caused by the apartment type, and soft decoration design can often make up for the problems that hard decoration cannot solve. Then, use Kujiale to build a teaching practice base and carry out teaching practice.

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The course of “Soft Decoration Design” is divided into a theoretical part and a practical part. The content of the theoretical part is to explain the style, material and matching skills of soft decoration elements: furniture, lamps, accessories, hanging paintings, green plants, and fabrics. Each knowledge point of soft decoration design is decomposed and taught in the form of modules. In the construction stage of the soft decoration material database, the knowledge that must be mastered in the soft decoration design: brand recognition and product modeling, are realized through the brand communication and commodity modeling tools in Kujiale; in the material management stage, the brand communication and product modeling tools are used to realize The Kupinxu tool masters the product style, product material and product size in the soft decoration design; in the building stage of the house type gallery, the decoration cloud design software in Kujiale is used to realize the floor plans and elevations that need to be known in the soft decoration design. The knowledge of space size measurement in the picture; in the stage of soft decoration design, it is necessary to understand the relevant knowledge of target customer positioning, spatial color positioning, soft decoration style positioning and quotation production. Both Pinxiu VR and Kool VR can be implemented.

The content of the practical part is based on the theoretical content, and the design of the soft decoration elements is carried out according to the plane CAD drawings. They should be selected and matched to match the size on the CAD drawing and the overall interior decoration style. In the practical part, the skills training for different goals uses the technology in Kujiale to divide the course into three modules: single module, combined module and VR&AR technology module. In a single module, take a single space, such as a bedroom, as the training target, use the software technology in Kujiale to quickly build the space, and then carry out soft decoration design and matching. Through the virtual space, the soft decoration training of different styles of bedroom styles can be carried out, and the effect can be displayed intuitively. In the combined module, the exclusive modules of Kujiale are used to quickly build different types of indoor spaces, and different functional modules are used to carry out the overall soft decoration of the space to meet the individual needs of customers. In the VR&AR technology module, scene construction can be completed quickly to improve efficiency. One-click synchronization of the solutions in the Kujiale software to achieve realistic real-time light and shadow display, rapid output of virtual real scenes, and display and interaction of different scenes.

5. The Specific Implementation Steps of Kujiale in the Teaching Process of Soft Decoration Design

The soft decoration design course based on project-based teaching is composed of 6 modules, namely furniture soft decoration configuration design, fabric soft decoration configuration design, lighting soft decoration configuration design, hanging painting soft decoration configuration design, ornament soft decoration configuration design, green decoration. Planting soft equipment configuration design composition. It requires a lot of soft decoration materials, and Kujiale does not

necessarily have modules for all the materials. Therefore, in order to make Kujiale implement smoothly in the teaching process, the courses are divided into: before class, during class and after class.

5.1 Before Class

Before starting the soft decoration design course, the relevant learning task requirements are distributed. Students need to enter the Kujiale platform for self-study. Use the corporate tutors on the Kujiale platform to master the relevant technologies of Kujiale in time. And think about the problems to be solved. At the same time, it is necessary to understand the style, brand, material, size, etc. of Kujiale's existing soft decoration material resources. In addition, the soft decoration materials found from other channels and to be used in the soft decoration design scheme need to be imported into Kujiale through modeling, rendering, etc., prepare for the soft decoration projects in the subsequent soft decoration design courses.

5.2 In Class

According to the specific soft decoration design project arranged by the teacher, the students draw the interior floor plan through Kujiale, and use the cool

Knorr can generate three-dimensional real scenes in functional form with one click. Then use soft decoration elements such as furniture in Kujiale for soft decoration design. In the implementation of the whole course, students are the mainstay, students design plans, students report plans, and teachers assist and guide. Teachers should pay attention to the common problems of students in a timely manner, guide students to explore the key functions of Kujiale technology independently, and provide help when needed. In order to test the design effect, Kujiale technology is used in the whole scheme, and the soft decoration scheme is designed for the purpose of real presentation. The immersive realism not only allows students to design a good soft decoration design scheme, but also makes Students can further intuitively understand the theoretical knowledge in soft decoration design.

5.3 After Class

After students complete the soft decoration design scheme through the technology in Kujiale, they will form a QR code. Students need to publish the QR code. Different people can watch the final effect of soft decoration design by scanning the QR code, and give relevant feedback. Students need to collect relevant questions and then make design revisions and refinements. In this process, students learn to summarize and think, guide students to discover the advantages and disadvantages of Kujiale technology in the program, and strengthen students' ability to deal with problems and innovation.

6. Summary and Evaluation of the Course

The whole course is based on project-based teaching, and students through independent learning, students as the main teacher and supplemented by other forms, with the help of Kujiale virtual technology to carry out the reform of the soft decoration design course in the furniture design and manufacturing major of Wenzhou Vocational and Technical College.

As a product of scientific and technological development, Kujiale's spatial cognition and artificial intelligence technology, distributed three-dimensional big data and multimedia digital information processing clusters have improved the technical support for the reform of soft

decoration design courses. There are soft decoration elements of different brands in Kujiale, and you can provide different styles of soft decoration elements and use them in the theoretical knowledge explanation part of the soft decoration course. In the practical part of the soft decoration design course, use Kujiale to build a 1:1 virtual house type library with different shapes, and then students can combine soft decoration elements: furniture, lamps, fabrics, accessories, paintings, and green plants with 1:1: 1 way is displayed in the space. Through this intuitive and concrete display of the final effect of soft decoration design, students can use virtual technology to generate human-computer interaction, from the design of soft decoration scheme to the presentation of soft decoration scheme, and promote their theoretical knowledge of soft decoration. In-depth understanding and summary of soft decoration solutions. Through this form, students can deeply appreciate the exploration from the initial design of the soft decoration scheme to the final presentation of the soft decoration scheme, so as to improve their practical ability and problem-solving ability. During the entire course completion stage, it was found that compared with the effect of the previous course, the students had a significant improvement in the size relationship between the various elements in the space. The whole design scheme seems more reasonable.

As the application of Kujiale technology has changed the practical module of the soft decoration design course, the grading standard of the relative course has also changed. In addition to the regular attendance, classroom performance and other forms, it is worth mentioning the like rate of students' works. From the time when the work is released to the time when the viewing channel of the work is closed, the final score value given by the soft decoration design work with a high rate of likes will also be high.

Of course, there are also some problems in the application of Kujiale as a technical tool in the reform of soft decoration courses. It has certain limitations. As a technical tool for virtual simulation, Kujiale is more likely to be reflected in the presentation of real scenes. There are too few soft decoration material resources and fewer styles, and the overall needs to be further improved. Secondly, it was found that during the whole teaching process, individual students were overly dependent on Kujiale and were unwilling to collect some excellent and fashionable soft furnishing materials as design resources in the scheme. The main reason is that students are reluctant to make virtual material modules suitable for Kujiale. Over time, it may cause students to lose content such as mainstream brands.

7. Conclusion

The development of information technology has promoted the development and reform of education. The teaching reform of the practical part of the soft decoration design course is carried out through Kujiale. Set up virtual training venues suitable for soft decoration design courses to achieve the goal of soft decoration design courses for personnel training, and help students achieve the purpose of employment at the fastest speed. Although there are shortcomings in the whole curriculum reform, some achievements have also been achieved. Through the virtual technology in Kujiale, students enter an immersive experience and design a soft decoration scheme. Through the mastery of theoretical knowledge and the design and creation of real projects, Kujiale's virtual technology has achieved certain results in the reform of the soft decoration design course in the furniture design and production major of Wenzhou Polytechnic.

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