Research on the Innovative Cultivation of Students Majoring in Environmental Art Design in Higher Vocational Education

--Take the Course of Commercial Display Space Design as an Example

Chunye Zheng

Wenzhou Polytechnic, Wenzhou, 325035, China.

Abstract

In view of the current situation and problems of higher vocational students majoring in environmental art design, relying on the course "Commercial Display Space Design", integrating three-dimensional space resource database, creating a complete curriculum system of granular knowledge, in order to achieve practical research to effectively improve students' spatial imagination ability and finally enhance their innovation ability. Its realization path puts forward three steps: "consolidate the basic professional knowledge" is the foundation, "hierarchical teaching, foster strengths and circumvent weaknesses, effective cooperation" is the key, and "increase field research and domestic and foreign skills competition, expand students' comprehensive vision" is a necessary means to improve.

Keywords

Higher vocational education, Environmental art design professional, Innovation ability, Commercial display space design, Promotion and training.

1. Introduction

At present, innovation is widely valued by people, and the environmental art design major pays attention to students' unique perspectives and creative expression. In daily teaching, we found that students have great differences in the reproduction and understanding of three-dimensional space in their minds. Most higher vocational students lack a good sense of space, and a small number of students have a good sense of space. When teachers convey the design concept and explain the design scheme, it is not enough to only use language, pictures and text. If they can use three-dimensional space model, animation, video and other resources, then understanding the relevant content will be more specific and image. At present, students often have a variety of design conditions in the course homework, competition certificate or in the process of upgrading the examination.

2. Current situation and emerging problems

2.1. There is no accurate concept of size for the spatial scale, and the three-dimensional spatial design and spatial scale prediction are not quite accurate.

For example, students may have designed a 2-meter diameter chair for a 30m² storefront, and only 0.3 meters for the porch of the door. The design of the stair step width is too narrow. The reason is that students lack their spatial thinking exercise and their basic spatial perception ability is weak. For example, students cannot distinguish between plane, facade, ceiling and ceiling view, nor can they understand the relationship between three-dimensional space and

face view. This needs to be carefully described and correctly guided, otherwise the subsequent courses will be difficult to progress, let alone innovative. For example, students have no concept of the size of the spatial scale, can not distinguish between one meter and three meters, or the spatial difference between one meter high solid wall and 0.5 meters of solid wall, or the different height of solid wall give people different space feelings and so on. If you can let the physical object, training base, VR virtual simulation base to participate in, nature is very good. However, without these devices, how to make students feel the space easily and intuitively, and use the three-dimensional space model to simulate the real space is still very effective. In particular, to explain the complex space, and to understand the relationship between the space. When students understand the three-dimensional space, if they have the model assistance, they can play with the space and clear the real state of the space, which will help students to verify the advantages and disadvantages of their design works. The design works are originally the best choice after selection, comparison and repeated "exercises". When making various comparisons and space adjustments, if there is a real-time intervention of three-dimensional space software, it will inevitably make the design more understandable and simple, which plays an important role in guiding and improving the subsequent growth of students.

2.2. The design progress is difficult and has low efficiency.

Due to the lack of students' three-dimensional spatial scale, the design progress is repeated, changed back and forth, and there is no goal and direction, often confused and unable to start, which is not conducive to students to improve their design ability, let alone innovation ability. Even after the three-year course, the number of students has not made any improvement in space design.

In view of this, we advocate the use of three-dimensional space resource database, to optimize the curriculum system according to students' cognitive level, talent training objectives, and enterprise job needs, and to integrate three-dimensional space resources into the course in a granular way. Take the course "Commercial Display Space Design" as an example, whether in the process of course design, teaching and explanation, or task layout, in the process of case explanation, there are different degrees of three-dimensional space resources integrated.

The following is an experimental exploration of how to improve students' innovation ability through three-dimensional space resources in the course of "Business Exhibition Space Design" of environmental art design major in higher vocational colleges.

3. Practice of three-dimensional space resources in the course of "Business Display Space Design"

3.1. Three-dimensional model of excellent cases + construction process + large sample + construction process video

Since the curriculum system focuses on the standard drawing of construction drawings and the sorting of spatial relations, it is very important to create a complete and in-depth interpretation model for students to reference, interpret and learn. In this three-dimensional model, it can be displayed in batches from rough room, concealed works, hard installation completion to soft decoration completion module in batches. The key node pattern can be created according to the actual construction process. If students want to understand the size of a node, they can not only dismantle it one by one, but also watch the relevant installation process video. In this way, students can integrate multiple knowledge points together, making it more interesting to consult the information. More importantly, through these models, which collect the construction process, construction technology, standard drawing specifications and spatial relationships, students can learn more freely and more efficiently. This is a standard resource base, which needs to strictly verify the correctness, standard and standardization of the model.

Can also add some exercises, let students do some relevant standards and norms of judgment, so that students timely find and perceive the correctness and understanding of their own standards.

3.2. Integration of the material resource base

Materials have always been given, and the precision of materials is also the difficulty and key points to overcome. Students 'understanding of materials is abstract, and it is difficult to establish material resource database. However, modular materials can be established. Different parts and different types use different layers and color modules, which is convenient to establish students' thinking on the types and attributes of materials.

3.3. 3d modeling of learning exercises and tasks

Students do not recognize the task and practice after class. Three-dimensional modeling of task arrangement can be used to enable students to have a more specific experience of space, geographical location, sunlight illumination, etc., which is conducive to the promotion of subsequent design (Figure 1-2 Task details).
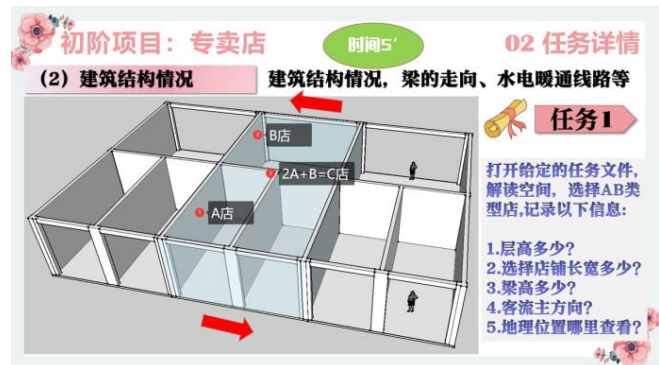

Figure 1 Task details 1

Figure 2 Task details 2

For the environmental art design majors of middle and higher vocational colleges and colleges, the best thing is to let students learn software courses systematically and deeply, which is mainly because software courses are relatively effective, easy to master, and directly verify whether it is correct or not. Unlike the content of innovative thinking and design sense, there are certain subjectivity, market fluctuations, time difference and regional factors, we cannot immediately know the quality of their works, which takes time to accumulate experience and other factors to determine, so it is normal for students to be confused. However, the problem of excessive emphasis on software teaching and light innovation training will also make students' innovation ability insufficient or even missing. In today's society, products are updated rapidly, ideas emerge in endlessly, and technology is developing rapidly. It is more important to cultivate students' innovation ability in the teaching of environmental art design major.

What are the first innovation capabilities included? Innovation ability can be roughly divided into three stages: creativity, innovation and entrepreneurship. The school is the easiest to implement, and it is also good at "creativity". In the later innovation stage, the school needs enterprises to join and transform the creativity into specific products, while the last stage of entrepreneurship needs the intervention of the market and capital. How to better connect the creative and innovation stage has always been the industrialization focus of the world's famous engineering universities. At present, the talent education in most colleges and universities has not clarify the relationship between the two, resulting in the thinking of teaching and talent training still stay in the "scientific paradigm". Under this paradigm, while trying to cultivate innovative talents, it does not consider using existing technologies to develop products to meet

the market demand. Therefore, during the school period, we mainly focus on the first two stages, and the last stage is different from person to person, according to the time change, rather than excessive. How to improve the students' creative and innovative ability, and what role does the three-dimensional space expression ability play in the two stages?

4. Exploration of the path to improve students' innovation ability in the course of "Business Display Space Design"

4.1. Consolidate the basic knowledge of the major

The solid basic knowledge is the prerequisite for the realization of all innovation. Professional basic knowledge must ensure its accuracy, understanding and mastery, especially the relevant theoretical knowledge and the basic knowledge of three-dimensional spatial thinking.

Here, two ways can be adopted. On the one hand, it adopts the team support system, emphasizing the ability of teamwork, and establishing the teamwork degree award, which can not be the best work, but it can be the most harmonious collaboration. Collaboration ability is also an important factor in workplace competition. It also helps to select student teams to participate in competitive competitions. On the other hand, the stratification task of resource library is adopted. According to their own learning status, choose different levels of learning difficulty, which can help students to flexibly choose the task of training objectives. Help to clear their own ability characteristics, facilitate self-positioning and work choice.

4.2. Hierarchical teaching, foster strengths and circumvent weaknesses, effective cooperation

In hierarchical teaching, students' abilities are measured in multiple dimensions. In addition to professional skills, three-dimensional spatial performance ability, teamwork ability, language expression ability, communication and problem solving ability are scored. Team work is not just two strong work together. If the character between two people is not good, communication is not smooth, it is not as good as the two high cooperation but the general level of the team. Two people need to learn to communicate properly with each other, the tacit understanding of cooperation and the appropriate division of labor. There are differences between a person's innovation and that of the team, and each has its own advantages and disadvantages. The two types are adjusted according to the situation of the students, and each person has his own characteristics and suitable mode. Our instructor is to identify the characteristics of different students, foster strengths and circumvent weaknesses, effective cooperation.

4.3. Increase field research and skills competitions at home and abroad to expand students' comprehensive vision

Let students go out from the campus, not only to the enterprise, to the city and even contact with rural culture, is an important part to comprehensively improve students' learning ability. If fully funded, hold summer camps, practice in enterprises, summer vacation social practice, participate in domestic and foreign skills competitions and rural research and other regular activities. Basically contact the third party enterprise, sign the relevant agreement, invest a small amount of money can be achieved. However, if students go to further places, live down to experience, or cross-border and cross-international way, it requires a considerable amount of funding and investment. At this time, the relatively less expensive three-dimensional space model can also be integrated into the practice of expanding the comprehensive vision.

5. Conclusion

In a word, for the environmental art design majors in middle and higher vocational colleges, "consolidating the basic professional knowledge" is the foundation, "hierarchical teaching,

foster strengths and circumvent weaknesses, and effective cooperation" is the key, and "increase field research and domestic and foreign skills competition, expand students' comprehensive vision" is a necessary means to improve.

Acknowledgements

References

[1] W. X, Y. Mei, Art education research, Research on the training path of multi-mode innovative talents in environmental design--Take the environmental design major of a university in Zhejiang Province as an example, 2022, December.

[2] Wu. J, Chinese University of Science and Technology, The influence of information technology on the cultivation of innovative talents--Take environmental design major as an example, 2018, April.

[3] Zhao. Y, Huang CH, Art and Literature for the Masses, Exploring the training path of environmental design and practice talents under the perspective of rural revitalization. 2020, Feb.

[4] Liu.G, Heilongjiang Science, "To promote the learning " of environmental design professional talent training mode . 2021, Dec.

[5] Li.K, Grand View, Research on project-based practical teaching in environmental Design majors, 2021, Sep.