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Research and Practice of the Perspective and Drawing Teaching Reform of Environmental Design

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Abstract: This paper aims to explore the teaching reform of the course of Perspective and Drawing in the major of Environmental Design. With the rapid development and progress of society, the training objectives of Environmental Design major have become more diversified and complicated. The traditional teaching method can no longer fully meet the needs of students. Therefore, it is of great significance to carry out teaching reform in the course of Perspective and Drawing, improve students' learning effect and practical ability, and cultivate innovative and practical talents in Environmental Design.

Keywords: Perspective and Drawing; Teaching reform; Environmental design

Introduction

Environmental Design is a highly practical discipline that requires students to possess solid hand-drawing skills. As a required course for this major, Perspective and Drawing aims to enable students to master standard drawing criteria, cultivate their rigorous engineering drawing and freehand drawing abilities, lay a solid foundation for shaping abilities, and gradually achieve the ability to express design and creativity accurately and freely[1]. This course is of great significance in cultivating students' spatial imagination and design expression capabilities. However, traditional teaching methods suffer from some problems, such as the disconnect between theory and practice, as well as the use of a single teaching method. These issues limit the development of students. Therefore, based on the author's teaching practice in the Department of Environmental Design at the Beijing Forestry University College of Art and Design, this article aims to explore the teaching reform of the Perspective and Drawing course to improve students' practical and innovative abilities.

1. The Problems with Traditional Teaching Methods

1.1 Separation of Theory and Practice

In traditional teaching methods, teachers often focus on imparting theoretical knowledge, while neglecting the importance of practical operations. As a result, students may learn the theoretical knowledge of Perspective and Drawing, but fail to apply it to subsequent courses and practical operations. This leads to a disconnect between theory and practice[2].

1.2 Single Teaching Method

Traditional teaching methods often adopt didactic teaching, where teachers lecture and students listen, lack of interaction and practical links, it is difficult to stimulate students' interest and enthusiasm in learning. As a result, students may find it difficult to apply the theoretical knowledge to practical applications, and may even disregard the drawing standard in their drawings[3].

1.3 Lack of Practical Project Operations

In traditional teaching methods, teachers often focus on imparting knowledge from textbooks, but lack the training of practical project operation. without providing opportunities for students to work on practical projects. As a result, students may find it difficult to improve their practical operating abilities and problem-solving skills.

2. Teaching Reform Measures

2.1 Content Reform

The teaching content of Perspective and Drawing is extensive, but the class hours are limited to 32. Therefore, streamlining the

content to focus on the essentials and making it more suitable for environmental design majors is an important aspect of teaching reform. The course is divided into four weeks, with a total of 32 class hours. In the first week, the main focus is on architectural drawing and drawing, which involves understanding how to read a set of drawings and how to express a space correctly and properly. The second week: focuses on drawing and understanding the classroom. Students measure the classroom space, and accurately draw its plans, elevations, and sections . This process not only reinforces the drawing knowledge learned in the first week, but also exercises students' spatial imagination and spatial transformation ability from three-dimensional space to two-dimensional space, which is beneficial for subsequent professional course learning. The third week: focuses on one-point perspective, two-point perspective, and axonometric drawing. Students draw perspective and axonometric drawings of the classroom on the basis of last week's drawings, forming a complete set of drawings. The fourth week: focuses on drawing and understanding the stairs. Through measuring and drawing the complex space of the stairs, students' spatial imagination and transformation ability formed in the second week are strengthened and consolidated.

2.2 Strengthening the Combination of Theory and Practice

In order to solve the problem of the disconnect between theory and practice and adapt to the development of the times and industry needs, on the one hand, we introduce practical projects into the classroom, allowing students to master theoretical knowledge through practical operations and reorganize knowledge points from a perspective closer to practical applications. On the other hand, we increase the proportion of experimental courses, where students complete the design and drawing of practical projects under the guidance of teachers, improving their practical operating abilities and problem-solving skills. Thirdly, we encourage students to participate in design competitions, innovative entrepreneurial activities, and other activities to improve their innovation and practical abilities. Additionally, we integrate current mainstream design concepts and technologies into teaching, such as virtual reality technology, 3D printing, etc., enabling students to learn about the latest design tools and technologies.

2.3 Diversified Teaching Methods

To stimulate students' interest and enthusiasm in learning and improve teaching effectiveness, we continuously improve teaching methods, for example case analysis, group discussion and other teaching methods, which not only enriching classroom content, but also increasing student participation. For example, when explaining perspective principles, we use real scene sketch teaching methods to enable students to understand perspective rules through practical operations and improve spatial imagination ability. In teaching, we also pay attention to cultivating students' innovative abilities. We stimulate students' innovative thinking through practical teaching and work evaluation. To stimulate students' innovative abilities and challenge spirit, we deliberately set some challenging tasks or projects, requiring students to complete them independently or in team cooperation. These tasks can improve students' practical operating abilities and problem-solving skills.

2.4 Introduction of Digital Technology

To improve teaching effectiveness and students' practical operating abilities, we introduce digital technology into the classroom. This not only improves students' drawing efficiency, but also cultivates their digital design thinking. For example, in the teaching segment, when teaching orthographic projection, we utilize the three-dimensional modeling function of CAD software to enable students to more intuitively understand the relationship between three-dimensional space and two-dimensional planes. Additionally, CAD software can help students better understand the proportions and sizes of drawings, thereby improving their graphic skills. Three-dimensional modeling and rendering technology can also assist students in better understanding object perspective relationships and lighting effects. For example, when explaining shadows and lighting, we can utilize SketchUp software to simulate the sun's illumination effects at different angles, enabling students to more intuitively understand the generation and changes of shadows.

In the practical operation segment, while completing freehand drawings, we also guide students to use digital technology for practical operations. For example, using CAD software for actual project design and drawing, or utilizing three-dimensional modeling software for virtual reality presentations. This practical teaching approach can help students better understand the application of digital technology in design, improving their practical operating abilities and innovation abilities.

Additionally, we utilize digital teaching resources to enrich teaching content and forms. Such as digital textbooks, online courses, multimedia courseware, etc. For example, utilizing interactive graphics and animations in digital textbooks can help students better understand perspective principles and graphic techniques. Utilizing online courses allows students to explore and learn relevant content independently.

2.5 Establishing a Diversified Evaluation-Feedback System

To comprehensively evaluate students' learning situations, we have established a diversified evaluation system. This system

includes regular performance, practical activity participation, stage work, project evaluation, final work, and multiple other aspects. It not only comprehensively evaluates students' comprehensive qualities from multiple perspectives but also promptly identifies learning problems in students and provides timely feedback and guidance. On the other hand, teachers will continuously adjust and improve teaching methods and content based on assessment results to improve teaching effectiveness. Additionally, they will continuously adjust and improve the assessment mechanism based on student feedback and assessment results to ensure its effectiveness and fairness. At the same time, we have also introduced the work evaluation segment to encourage student innovation and experimentation, improving evaluation objectivity and comprehensiveness.

3. Effect of Teaching Reform

Through the implementation of teaching reform, students' practical operating abilities and innovation abilities have been significantly improved. At the same time, the teaching quality has also been improved. Specifically, the effect of teaching reform is reflected in the following aspects:

1.Improvement of students' practical operating abilities

By introducing practical projects and digital technology, students are better able to apply theoretical knowledge to practice. Their drawing skills and design expression abilities have been significantly improved.

2.Enhancement of innovation abilities

The application of multiple teaching methods has stimulated students' innovative thinking. They actively think and try in class, and have come up with some creative design plans.

Improvement of teaching quality

The implementation of teaching reform has prompted teachers to continuously update teaching content and methods, especially cutting-edge digital technology, to improve their teaching level. At the same time, the construction of a diversified evaluation system has made evaluation more objective and comprehensive, further improving teaching quality.

3.Increased industry recognition

With the improvement of students' comprehensive qualities, our graduates have been widely recognized in the industry. They have solid basic skills and innovative abilities, and can quickly adapt to the needs of industry development. This has won the college a good reputation in society.

Conclusion

Through the discussion on the teaching reform of the Perspective and Drawing course in environmental design majors, we can draw the following conclusions: teaching reform can further enhance students' learning effectiveness and practical abilities, and cultivate more innovative and practical environmental design professionals. In teaching reform, introducing multimedia teaching methods, carrying out practical projects, and establishing links with the industry are effective methods. By strengthening the combination of theory and practice, diversifying teaching methods, introducing digital technology, and establishing a diversified evaluation system, we have successfully improved teaching quality and delivered more outstanding talents to the environmental design industry. At the same time, we should closely monitor course effect evaluation and student feedback to continuously improve and refine teaching reform measures. We will continue to deepen teaching reform and explore more suitable teaching models and methods for student development.

References:

[1] Jin Chengyu. Teaching reform of design major perspective and drawing [J]. China Science and Technology Information 2005 (4): 292.

[2] Liu Yunjun. —— Take the course of "Interior Design Drawing and Fluoroscopy" as an example [J]. Cultural and educational materials 2019 (23): 194.

[3] Cheng Xia. Thoughts on the teaching reform of the perspective and drawing course of Art and Design major [J]. Cultural and educational materials 2009 (10): 106.