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Research and Practice on Classroom Teaching Reform of Landscape Architecture Planning and Design Based on OBE Concept (Part 1) (Residential Landscape Planning)

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Abstract: The Outcome Based Education (OBE) concept is becoming an important framework for improving teaching quality and cultivating students' core competitiveness, especially in the context of deepening educational reform. This article takes the course "Landscape Architecture Planning and Design (I): Residential Landscape Planning" at Guangdong Technology College as a case study to systematically explore the teaching reform path and its practical effects based on the OBE concept. Firstly, after a comprehensive analysis of the current status of the curriculum, identify the shortcomings in the current teaching mode. Subsequently, based on the core concept of OBE, multidimensional reform strategies were proposed, including precise positioning of course objectives, systematic optimization of teaching content, innovative teaching methods, and establishment of diversified evaluation mechanisms. The research provides valuable reference and inspiration for the improvement and innovation of related courses in the future.

Keywords: OBE Concept; Landscape Planning of Residential Areas; Classroom Teaching Reform; Teaching Practice; Results Oriented

1. Introduction

1.1 Research Background

Global education reform is constantly advancing, and Outcome Based Education (OBE), as a teaching model that focuses on learning outcomes, is increasingly being widely applied in various courses [1]. Landscape architecture is a major that cultivates applied professionals who can adapt to the needs of the country and industry in the new era, undertake urban and rural greening, rural revitalization, and ecological civilization construction [2]. The OBE philosophy emphasizes clear learning objectives, systematic teaching design, and the use of scientific evaluation methods to enhance students' practical abilities and professional qualities. As a core course in landscape design, "Landscape Architecture Planning and Design (I): Residential Landscape Planning" not only imparts relevant professional knowledge, but also pays special attention to the cultivation of students' comprehensive abilities. Therefore, how to effectively implement the OBE concept in this course to improve students' design ability and overall quality has become an important issue in current education reform. According to the instructions of the Chinese Ministry of Education and the National Development and Reform Commission that local universities should attach importance to applied teaching, this article explores the reform measures for the curriculum system of landscape architecture planning and design from formulation to implementation [3].

1.2 Research Objective

This study aims to reveal the shortcomings in the teaching mode of "Residential Landscape Planning and Design" course, and propose multidimensional reform plans based on the core concept of OBE. By clarifying course objectives, systematically optimizing teaching content, innovating teaching methods, and establishing a diversified evaluation system, this study explores how to effectively enhance students' professional abilities, practical skills, and comprehensive qualities. Through practical verification, this study provides a theoretical basis and practical basis for the teaching reform of landscape architecture

design major, and valuable references and inspirations for the improvement and innovation of related courses in the future. It flexibly applies comprehensive design methods and practical teaching methods, emphasizes student-centered approach, and enables students to form creative thinking patterns, which is conducive to cultivating applied design talents who combine theory and practice [4].

1.3 Research Methods

This study combines literature analysis, case study, and practical testing methods. Firstly, through literature analysis, gain a deeper understanding of the basic theory of OBE concept and its application in curriculum teaching; Next, we will explore curriculum reform strategies based on the OBE concept through case studies; Finally, evaluate the effectiveness of the reform using practical testing methods to form a systematic reform experience.

2. OBE Concept and Its Application in Curriculum Teaching

2.1 Overview of OBE Concept

The OBE philosophy emphasizes putting students' learning outcomes at the core, with the aim of ensuring that students can achieve expected learning outcomes through setting clear learning goals, developing systematic teaching strategies, and implementing a scientific evaluation system. It focuses on the comprehensive development of students in terms of knowledge, skills, and attitudes, and emphasizes the enhancement of practical application abilities. Effective implementation of the OBE concept requires comprehensive adjustments to curriculum design, teaching methods, and evaluation systems to ensure optimal educational outcomes.

2.2 Application of OBE Concept in Classroom Teaching Reform

In the process of course teaching, the implementation of OBE concept is mainly reflected in the following aspects:

Clear course objectives: Course objectives need to be closely aligned with industry demands and professional standards, and clearly define the knowledge, skills, and attitudes that students should possess after completing the course. When setting course objectives, students' future career development needs should be fully considered to ensure that the course content and teaching methods can effectively support students in achieving these objectives.

Optimize teaching content: Adjust teaching content according to course objectives, ensure that the content is closely linked to learning outcomes, and value the practicality and foresight of knowledge. Optimizing teaching content should not only include updating theoretical knowledge, but also covering the latest technological developments and industry trends, enabling students to master cutting-edge knowledge and flexibly apply it in practical applications.

Innovative teaching methods: Adopting various teaching methods such as project driven, case analysis, and simulated practice to improve students' practical operation ability and problem-solving ability [5]. The innovation of teaching methods should focus on students' active participation and practical operation, and enhance their comprehensive quality and innovation ability through practical projects and case analysis.

Scientific evaluation system: Construct an evaluation system based on learning outcomes, comprehensively evaluate students' learning effectiveness through multidimensional evaluation methods, covering process evaluation and outcome evaluation. A scientific evaluation system should focus on students' knowledge mastery, skill application ability, and comprehensive quality, and provide timely and effective feedback to promote their further development.

3. Teaching Reform Strategies for Residential Landscape Planning and Design Course Based on OBE Concept

3.1 Repositioning of Course Objectives

The traditional course of "Residential Landscape Planning and Design" mainly focuses on imparting theoretical knowledge, but there are shortcomings in practical application and comprehensive ability cultivation. Based on the OBE concept, the repositioning of course objectives should include the following aspects:

Course objective 1: Master the methods and procedures of landscape architecture design,

combine theory with practice, design different plots reasonably, pay attention to the feasibility of design, be able to analyze and study the environment and sustainable development through landscape architecture, identify corresponding countermeasures, and lay a good foundation for future real project design.

Course objective 2: Master the basic principles of landscape design in residential areas, be able to analyze and understand the design conditions of specific environments, master new design techniques, styles, materials, design priorities, etc., and possess creative thinking and practical abilities in residential area landscape design.

Course objective 3: Understand the disciplinary background and professional trends of landscape planning and design, and master the norms and methods of residential landscape design. The basic knowledge required to be understood and mastered, as well as the responsibilities that landscape designers shoulder in their work;

3.2 Optimization of Teaching Content

Based on the repositioning of course objectives, the optimization of teaching content includes:

Theoretical section: Enhance the explanation of basic concepts, design principles, methods, and technologies in residential landscape planning and design, while introducing content on emerging technologies (such as digital design, intelligent landscape systems, etc.) and design trends (such as green design, sustainable development, etc.). When optimizing the theoretical part, emphasis should be placed on introducing the latest knowledge to ensure that students master the current design concepts and technologies. In addition, breaking down complex theoretical knowledge into easy to understand small modules helps students gradually absorb and comprehend. Each module should revolve around core concepts to ensure that students have a clear understanding of the meaning of each section and its application in design practice.

Practical part: Design cases related to real projects to enable students to apply their learned knowledge in practical operations, thereby enhancing their practical skills and problem-solving abilities. For example, an actual residential landscape project can be created, covering all aspects from research, scheme design to rendering and implementation. When optimizing the practical part, it is necessary to emphasize the integration with the actual work environment to ensure that students design and implement in real situations.

Integrated section: Integrating interdisciplinary knowledge such as ecology, sociology, psychology, etc. to broaden students' horizons and cultivate their comprehensive analytical abilities. Through comprehensive projects, students can integrate knowledge from different disciplines and enhance their overall abilities. For example, designing an interdisciplinary residential landscape project that combines knowledge from ecology, sociology, and psychology to enhance students' comprehensive analytical and problem-solving abilities.

Update course content in line with industry trends: Regularly revise the teaching syllabus to incorporate the latest research findings and technological advancements in the field of landscape design, ensuring that course content stays in sync with industry demands. This can be achieved by introducing the latest cases, technologies, and design concepts, ensuring that the knowledge learned by students is cutting-edge and practical.

Add on-site inspections and research activities: arrange for students to participate in on-site inspections of actual projects and encourage them to conduct in-depth research on the surrounding environment. By observing the real landscape of residential areas, students can better understand design principles and norms, and combine theory with practice to enhance their practical abilities.

Strengthening computer-aided design training: During the course teaching process, software applications are introduced into course assignments, and CAD, SU, Lumion and other software required for the subject are flexibly applied to enhance students' computer operation skills and software application abilities. Breaking the boundaries of time and space, achieving the integration of virtuality and reality; Guide students to perceive residential landscape design from multiple scenarios and perspectives [6].By simulating real design projects, students can become familiar with the operation of relevant software and develop their ability to meet technical requirements in practical work.

Diversified case analysis: Introduce various types of cases, covering different design styles and technical means. Encourage students to analyze cases from multiple perspectives, including design concepts, environmental impacts, and economics, in order to enhance their analytical and evaluative abilities.

3.3 Innovations in Teaching Methods

The innovation of teaching methods is an important means to achieve the OBE concept, mainly including:

Project driven teaching: By designing and implementing practical projects, students can enhance their comprehensive abilities while solving real-world problems. For example, a simulation project can be established to encourage students to complete a residential landscape design project in groups, covering multiple stages such as research, scheme design, rendering production, and implementation. The core of project-based teaching is to encourage students to solve problems in practice, thereby enhancing their practical skills and overall quality.

Case analysis: Introduce successful cases for in-depth analysis to help students understand design concepts and practical experiences. Through case analysis, students can learn the best practices and design ideas in the industry. For example, analyzing successful residential landscape projects both domestically and internationally can help students understand different design ideas and methods, thereby enhancing their design abilities and innovation awareness.

Enhance classroom interaction: Adopt a centralized hanging chart evaluation format, allowing students' design works to be displayed and evaluated in the classroom. This approach not only allows students to receive guidance from teachers, but also stimulates their creativity and obtains new inspiration through feedback from classmates.

Group discussions and teamwork: Regularly organize group discussions to facilitate student grouping for project design. In team collaboration, students can leverage their individual strengths and work together to tackle challenges in design. This interactive form helps to enhance their communication and collaboration skills, while improving the overall design level.

3.4 Reconstruction of Evaluation System

The evaluation system based on the OBE concept should have the following characteristics:

(1) Multidimensional evaluation: This evaluation method should cover multiple aspects such as knowledge mastery, skill application, and comprehensive ability. Students' knowledge mastery can be evaluated through exams, assignments, and project outcomes, while their skill application ability can be assessed through the implementation and presentation of practical projects. The key to multidimensional evaluation is to comprehensively reflect students' learning outcomes and ensure that the evaluation results truly reflect their actual abilities.

(2) Process evaluation: This evaluation method should focus on students' performance and progress in the learning process, and conduct phased assessments. By conducting periodic evaluations of student project progress, we can provide timely feedback on their learning status and offer improvement suggestions. The core of process evaluation is to pay attention to the dynamics of learning, adjust teaching strategies and methods in a timely manner, and help students achieve progress in the learning process.

(3) Outcome evaluation: This evaluation measures students' learning outcomes through the quality and practical application effects of the final results. For example, through the presentation and review of the final project, students' design abilities and practical application effects can be evaluated. The focus of outcome evaluation is to ensure that students can achieve the expected learning goals and outcomes, thereby evaluating their ultimate learning outcomes.

4. Curriculum Reform Practice Based on OBE Concept

4.1 Implementation Steps

Develop a reform plan: Based on the optimized course objectives and teaching content, design a detailed teaching reform plan that includes multiple aspects such as teaching plan, teaching resources, and teaching methods [7]. When formulating reform plans, it is necessary to fully consider the actual situation to ensure the feasibility and effectiveness of the plan.

Carry out pilot teaching: Implement pilot

teaching in some classes or courses to verify the effectiveness of the reform plan. This semester, two classes will be selected for pilot teaching during the 2024-2025-1 semester to compare the teaching effectiveness before and after the implementation of the reform. The core of pilot teaching lies in testing the effectiveness of reform plans through practical operations, collecting feedback, and adjusting and optimizing reform measures in a timely manner.

Collecting feedback: Using methods such as questionnaire surveys and interviews to collect feedback from students and teachers, in order to adjust and optimize reform measures in a timely manner. For example, conducting regular course evaluations to understand students' views on teaching content, methods, and evaluation systems. The key to feedback collection is to identify the problems and deficiencies in the implementation process of the reform, and then make adjustments and optimizations to enhance the effectiveness of the reform.

Summarize experience: Summarize reform practices to form replicable teaching experiences and models. Summarize the successful experiences and challenges in pilot teaching, in order to establish the best practices for reform. The key to summarizing experience lies in systematically analyzing reform practices and providing reference and guidance for further teaching reforms.

4.2 Practical Cases

Taking the reform of the "Landscape Architecture Planning and Design (Residential Landscape Planning)" course at Guangdong Technology College as an example, this article introduces the specific steps, effects, and existing problems of the reform implementation

Repositioning of course objectives: After multiple rounds of discussion and research by the course team, the course outline has adjusted the content and frequency of practical training projects. The original seven design tasks have been changed to four design assignments, and all hand drawn drawings have been transformed into two hand drawn and two computer-generated drawings. This effectively introduces students from the hand drawn stage to the computer-generated drawing stage, laying a solid operational foundation for subject design competitions and graduation projects. Propose to reform and innovate the teaching of "Residential Landscape Planning" course guided by the concept of "integration of intelligence and technology"[8].

Optimization of teaching content: Introduction to emerging technologies and design trends has been added, and case studies related to actual projects have been designed. Due to the fact that landscape design originates from the perception and interpretation of site features, experiencing landscape sites must come before formal training and become the foundation of design learning [9]. Encourage students to conduct practical research before undertaking real projects, in order to truly perceive and understand the terrain conditions. The optimization of teaching content enables students to master cutting-edge knowledge, improve practical operation ability and comprehensive quality. After integrating several years of course teaching content, practical projects are introduced into the course teaching, from the generation of conceptual plans in the early stage to construction drawings in the later stage, from comprehensive unit price to overall quotation. The complete project process is explained, laying a good foundation for students' future work as Party A and Party B, and smoothly completing the transition from students to the workplace.

Innovative teaching methods: Project driven teaching, case analysis, and simulation practice have been adopted to enhance students' practical operation ability and comprehensive quality [10]. The innovation of teaching methods has effectively improved students' comprehensive abilities and problem-solving skills.

Reconstruction of evaluation system: A multidimensional evaluation system has been established, including process evaluation and outcome evaluation, to comprehensively evaluate students' learning effectiveness. The reconstruction of the evaluation system has effectively improved students' learning outcomes and comprehensive abilities.

4.3 Evaluation of Reform Effectiveness

Comprehensive ability improvement: The implementation and evaluation of actual projects significantly enhance students' design

ability, problem-solving ability, and teamwork ability. The reform measures have effectively improved students' comprehensive quality and practical operation ability.

Improvement of teaching quality: The optimization of course content and teaching methods has increased students' satisfaction and participation in the course, and the teaching effect has been significantly improved. The reform measures have effectively promoted the improvement of teaching quality and student learning outcomes.

Professional ethics cultivation: In practical projects, students demonstrate good professional ethics and innovative abilities, thereby enhancing their professional ethics. The reform measures have successfully cultivated students' professional ethics and comprehensive abilities.

5. Conclusion and Suggestion

5.1 Main Conclusions

The teaching reform of the course "Landscape Architecture Planning and Design (Residential Landscape Planning)" based on the OBE concept can effectively enhance students' comprehensive abilities and professional qualities, and improve the teaching quality of the course. By clarifying course objectives, optimizing teaching content, innovating teaching methods, and restructuring the evaluation system, the reform measures have achieved significant results, providing a feasible reform path for landscape design education.

5.2 Improvement Suggestions

Continuously optimizing course content: Based on industry development trends and student needs, continuously optimize course content to maintain its cutting-edge and practical nature. The continuous optimization of course content should focus on aligning with industry demands, ensuring the forward-looking and practical nature of the course content.

Strengthen teacher training: Improve teachers' understanding and application ability of OBE concept, and ensure the effective implementation of reform measures. Regularly organize training and seminars to enhance teachers' teaching abilities and reform awareness. The key to teacher training lies in improving teachers' understanding and application ability of OBE concepts, ensuring the effective implementation of reform measures.

Expand the scope of reform: Promote the application of OBE concept to other courses and majors, forming a systematic teaching reform system. Explore reform strategies in different curriculum areas, enrich reform experience and models. The key to expanding the scope of reform lies in promoting the application of OBE concepts to other courses and majors, forming a systematic teaching reform system.

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