Exploration on the Path of Industry-Education Integration Teaching in the Course "Principles of Interior Design"

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Abstract: Against the backdrop of the in-depth advancement of the digital transformation of the construction industry and the rural revitalization strategy, interior design education is confronted with the dual challenges of "disconnection between theory and practice" and "separation between technology and ethics". This paper focuses on the reform of the course "Principles of Interior Design" and proposes a "three-dimensional collaborative" model. It realizes the unity of knowledge, ability and value, thus providing a replicable paradigm for the integration of industry and education in design courses.
***Keywords*:** principles of Interior design, teaching reform, industry-education integration

1. Teaching Dilemmas in the Course Amidst Industry Changes

1.1 Structural Contradictions Between Industry Demand and Teaching Supply

In recent years, the interior design industry has shown three major transformation trends: first, the penetration of digital technologies, requiring practitioners to have parametric design capabilities [1]; second, the orientation towards sustainable development, with the "dual carbon" goal promoting the upgrading of green design standards[2]; third, the revival of regional culture, with rural renovation and urban renewal projects putting forward higher requirements for local design [3]. However, a survey conducted by the National Steering Committee for Architecture Disciplines in Institutions of Higher Education shows that:the survey shows that 68% of colleges and universities still use the traditional model of "theoretical teaching + virtual cases" in the course "Principles of Interior Design", and the coverage of cutting-edge technologies and practical needs is less than 30% .

1.2 Limitations of Existing Reform Explorations

The teaching reforms carried out in the academic community can be summarized into three categories: technology-oriented reforms focus on software operation training but ignore the systematic construction of design principles[4]; culture-oriented reforms emphasize the application of traditional elements but lack integration with modern design methods [5]; project-oriented reforms introduce enterprise cases but result in insufficient practical depth due to vague rights and responsibilities between schools and enterprises [6]. The course "Principles of Interior Design" addresses the above issues and proposes a "theory-practice-ideological and political education" trinity reform framework, systematizing theoretical teaching, realigning practical projects, and infiltrating ideological and political elements. Through two years of practice, a distinctive solution has been formed.

2. Theoretical Framework: Model Construction Based on Industry-Education Integration

2.1 Theoretical Basis and Model Design

This study takes the OBE concept as the core and deconstructs the course objectives into three dimensions: the knowledge dimension , the ability dimension, and the quality dimension. A student-centered collaborative teaching model of "college tutors + part-time industrial teachers" is constructed. Part-time industrial teachers deeply participate in curriculum design and practical guidance, integrating cutting-edge industry technologies and real project experience into classroom teaching. On this basis, a closed-loop teaching chain of "goal setting-teaching implementation-evaluation feedback" is formed.

2.2 Reconstruction of Modular Teaching Content

Centering on Core Knowledge Points, the Basic Module (64 class hours) adds the unit "Introduction to Digital Twin Technology" to consolidate students' theoretical and technical foundation; the Characteristic Module (32 class hours) develops special projects such as "Analysis of Lingnan Arcade Space" and "Strategies for Renovation of Huizhou Folk Houses" in

combination with regional characteristics; the Cutting-edge Module (16 class hours) focuses on industry frontier fields such as aging-friendly design and application of low-carbon materials. Part-time industrial teachers update the teaching content dynamically and periodically in accordance with the needs of actual projects.3. Practical Path: Teaching Innovation from Classroom to Field.

3. Implementation Process of "Dual Tutor System" Project Teaching

This curriculum teaching innovation selects three types of typical projects as teaching carriers and adopts the dual tutor system for teaching. College teachers take the lead in theoretical and cultural guidance, while part-time industrial teachers are responsible for practical technology and industry standard control. The teaching process is carried out in the form of "flipped classroom + on-site workshop". Before class, case materials are pushed through "Yu Classroom"; during class, the focus is on problem-solving; after class, students submit comprehensive reports including technical descriptions and ethical reflections [7].

3.1 Application of Digital Teaching Tools

In teaching practice, Sketch Up is used to quickly create basic models of interior spaces, and then 3D Max is used for material refinement and light rendering, enabling students to intuitively simulate the light effects of different materials in the space; AutoCAD is used to complete accurate construction drawing preparation and on-site data collection, realizing the whole process from conceptual design to construction drawings. At the same time, relying on Yu Classroom, a work certification platform is built, and a knowledge graph database is constructed synchronously to store data at each stage of the design process, ensuring the traceability of design ideas and modification processes, and facilitating synchronous classroom teaching and achievement display.

3.2 Construction of Process Evaluation System

From the perspective of industry-education integration, the reform of the assessment method for the course "Principles of Interior Design" is carried out around three dimensions: process assessment, achievement assessment, and ideological and political assessment in the course.

Through dimensions such as the elaboration of design concepts, value orientation in the project implementation process, and responsibility in team cooperation, the organic infiltration of ideological and political elements is realized. The weight setting of each dimension not only highlights the importance of process learning but also takes into account the quality of achievements and value guidance, forming a comprehensive, dynamic and three-dimensional evaluation system.

4. Practical Effects: Empirical Analysis Based on Typical Cases

4.1 Relevant Manifestations of Students' Ability Improvement

After learning and practice, students have shown various positive changes in design ability. In terms of knowledge acquisition, their understanding of relevant principles of interior design has become more in-depth and systematic; in practical operation, the connection between scheme design and technical implementation has become smoother; in terms of innovative thinking, they can put forward more innovative design ideas combining cutting-edge concepts and regional characteristics. The comprehensive improvement of these abilities helps students better adapt to the industry's demand for professional talents.

4.2 Practical Value of School-Enterprise Collaboration

In the process of promoting school-enterprise cooperation, some results with practical significance have been achieved. Some design schemes combined with actual needs have provided useful references for the promotion of related projects; some formed design strategies and methods have certain reference value for industry practice. Enterprise feedback shows that students participating in the course have shown strong adaptability in practice and can quickly apply the knowledge they have learned to practical work.

5. Conclusion

The practice of teaching innovation in the course "Principles of Interior Design" from the perspective of industry-education integration shows that integrating real project needs into teaching content and introducing dual tutors with diverse backgrounds can effectively stimulate students' learning initiative and innovative thinking. By participating in actual enterprise projects, students not only improve their comprehensive practical ability of design schemes but also strengthen their understanding and adaptability to industry needs.

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