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Exploration of Teaching Reform in Packaging Design Courses in Higher Education Institutions—From Design Skills to Design Thinking

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Abstract: *This study explores the teaching reform of packaging design courses in higher education institutions. Starting from the problems existing in the traditional teaching model of design skills, we propose a teaching principle oriented by the cultivation of design thinking, and further explore the teaching reform strategy, that is, from design skills to design thinking. Through the restructuring of course content, innovation of teaching methods and reform of evaluation mechanisms, our goal is to cultivate students' innovative ability, critical thinking and comprehensive quality, so that they can better adapt to the needs of the packaging design industry. The results of this study are instructive for the teaching practice of packaging design courses in higher education institutions, and provide a new perspective and reference for the development of the packaging design industry and talent cultivation.*

Keywords: *Higher Education, Packaging Design Course, Teaching Reform, Design Thinking*

1. Introduction

In the context of rapid changes, university packaging design teaching is facing unprecedented challenges and opportunities. At present, most universities' packaging design courses still follow the traditional teaching model, which emphasizes the cultivation and practical operation of design skills, such as software usage, graphic creation, layout, etc. However, this skill-oriented teaching system increasingly shows problems that do not match industry needs. The design industry is calling for compound talents who not only have solid design skills, but also can reflect innovative consciousness, strategic thinking and comprehensive problem-solving ability in design. The significance of teaching reform is to respond to the new requirements of design education in the context of the new era, shifting the focus of teaching from single design skill training to the cultivation of students' design thinking ability, to adapt to the increasingly complex and changing social and market demands. Therefore, teaching reform should actively integrate new technology, develop new concepts, and build a more open and innovative teaching system to cultivate students' design thinking ability, so that they can play a greater innovative potential and social value in the future design practice.

2. Problems Existing in the Traditional Teaching Model of Packaging Design Courses

2.1. The Disconnection between Knowledge and Skill Teaching

In the traditional teaching model, there is often a disconnection between knowledge imparting and practical skill teaching. There is a lack of effective connection between theoretical courses and practical courses. After mastering the theoretical knowledge, they have learned, students have difficulty effectively transforming it into practical operation skills. This disconnection makes students often helpless when encountering actual design problems and cannot flexibly apply theoretical knowledge to solve problems [1].

2.2. Lack of Students' Innovative Ability and Critical Thinking

The traditional teaching model has not fully considered the cultivation of students' innovative ability and critical thinking. Students are more passively accepting knowledge in the learning process, rather

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than actively exploring, and creating. Under such circumstances, students often lack sensitivity to design trends and critical analysis ability for design problems, which affects their comprehensive design level and future career development.

2.3. Mismatch between Course Content and Market Demand

There is a mismatch between the current packaging design teaching content and market demand. Course content often lags behind market changes, neglecting the teaching update of new materials, new technologies and new concepts. Due to the lack of close connection with the industry, the knowledge and skills learned by students in school are difficult to apply directly to future work, causing them to face great adaptation problems after entering the workplace. The "packaging design course" survey form is shown in Figure 1.

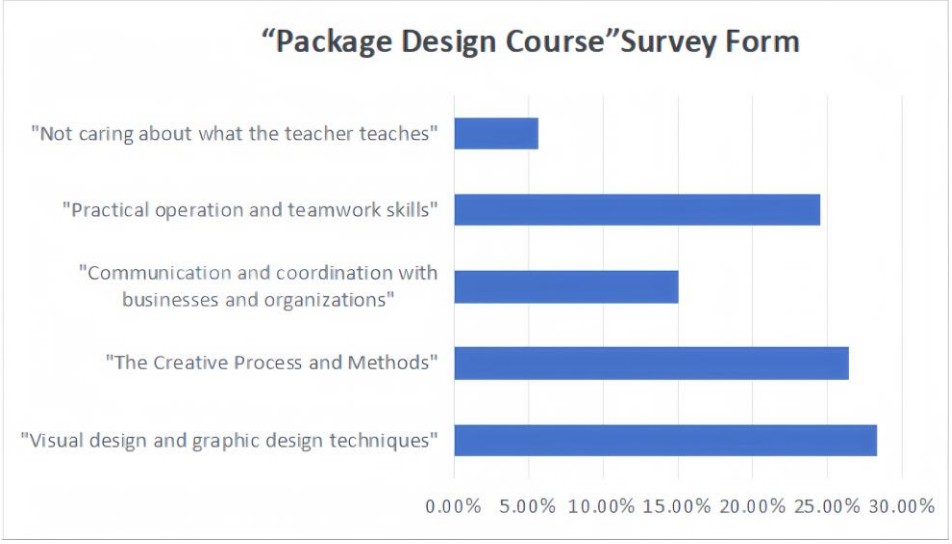

Figure 1: Survey on students' expectations for packaging design course

3. Teaching Guiding Principles Oriented by the Cultivation of Design Thinking

Design thinking is a way of thinking that focuses on users and pursues innovative problem-solving. It emphasizes interdisciplinary cooperation, iterative process and sensitivity to actual situations. In packaging design teaching, design thinking can help students establish a bridge between theory and practice, creativity and practicality, not only cultivating their skills, but more importantly shaping their thinking ability to solve problems. Therefore, based on the observation of students and the experience summarized in the teaching process, the following three teaching guiding principles are summarized:

3.1. Student-centered

The student-centered teaching model emphasizes the development of student subjectivity, pays attention to the cultivation of student individualized needs and creativity. Teachers observe student needs to guide the formulation of course content, rather than passively accepting course content in an indoctrinated way [2]. In this model, teachers should play the role of a guide, through design task analysis, pre-class preparation and classroom interaction, to stimulate students' participation and autonomous learning ability, mobilize students' interest and self-driving force. The combination of learning tasks and real learning situations can make students master knowledge and solve problems in a natural and predictable state.

3.2. Emphasize Process and Practice

Teachers should guide students to actively express their thinking and creative processes while mastering basic theories, and identify deficiencies in the students' thinking during the process. At the same time, instructors aim to deepen students' understanding of design through hands-on practice. The teaching process also needs to interpret the design task list, combine the students' mastery of the pre-class task, carry out in-depth analysis, and clarify the relevant requirements of the design task. Teachers

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should facilitate students' experience of the design process through actual operation, and teach them how to tailor design plans according to market and user needs.

3.3. Emphasize Innovation and Critical Thinking

Innovative thinking is the core element of design thinking, guiding students to constantly seek breakthroughs in traditional ideas and methods in the design process, opening up new design possibilities, which helps students form innovative ideas and solutions in design practice. Critical thinking is another indispensable part of design thinking, emphasizing reflection and questioning of existing knowledge, traditional ideas and one's own ideas. Teachers should cultivate students' critical thinking through teaching activities such as case analysis, peer review, and self-reflection. Teachers should encourage students to question existing design ideas and design norms, prompting students to enhance the depth and breadth of design in constant criticism and reflection.

4. Exploration of Teaching Reform Strategy from Design Skills to Design Thinking

By following the guiding principles of teaching oriented towards cultivating design thinking, the teaching reform strategy from design skills to design thinking in the teaching process should explore from three emphases: content, method and evaluation mechanism:

4.1. Reconstruction of Course Content

4.1.1. Integration of Theory and Practice

The primary task of the teaching reform of the packaging design course is to break the traditional pattern of separating theory and practice and to closely combine the two. This integration is not just about applying theoretical knowledge to practical projects, but more importantly, it is also necessary to deepen and consolidate theoretical knowledge through practical activities, thus forming a closed loop from theory to practice and then back to theory. In the process of packaging design practical training reports, students can also conduct market research, competitive product analysis and user surveys, accurately target the audience, deeply understand the needs and preferences of the target audience, and find brand positioning, consumer psychology, design principles, as well as material and process selection. Details are shown in Figure 2.

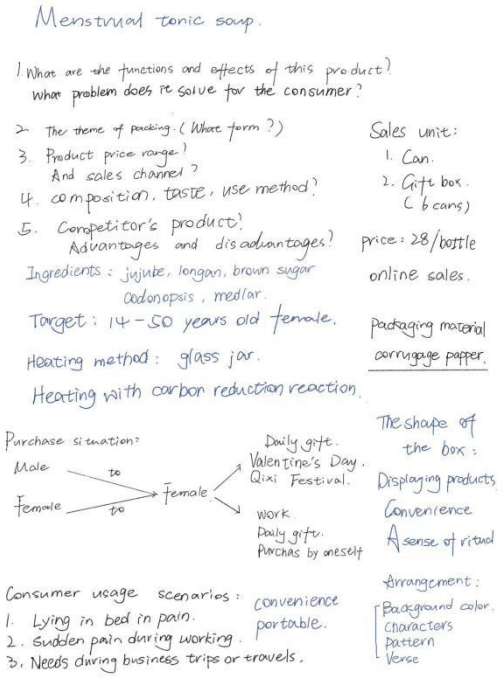

Figure 2: Preliminary user survey sketch for project design in student course.

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4.1.2. Strengthening the Experience of the Design Process

The strengthening of the design process experience is a key link in teaching reform. It requires students to not only superficially complete a design task, but also to deeply experience the entire design process, thereby cultivating their design thinking and innovative abilities. For example, when students are completing packaging design practical training reports, they need to start from design sketches, go through rendering diagrams, 3D model making, until the final design instructions, this series of processes allows students to experience the complete design process from concept to finished product. In this process, students can actually operate, repeatedly try and error, and learn from practice, such experience is crucial for them to understand the complexity and systematicity of design.

4.1.3. Introduction of Interdisciplinary Knowledge and Collaboration

The integration of interdisciplinary knowledge and collaborative models can significantly improve the teaching effect of packaging design courses. In real work, packaging design is often a multi-domain, multi-professional comprehensive work, involving multiple fields such as marketing, material science, industrial design, environmental science, etc. Therefore, packaging design courses should encourage students to explore connections with other disciplines, and through team collaboration, achieve complementary knowledge and skills. Through such interdisciplinary collaboration, students can understand and solve design problems from different angles, and also cultivate their team collaboration and communication skills.

4.2. Innovation in Teaching Methods

4.2.1. Project-Based Learning

Project-based learning is a project-centered learning method. Students individually or cooperatively complete actual projects, cultivating students' ability to solve actual problems, team cooperation ability, and innovative ability in the process of project completion. In the packaging design course, by introducing project-based learning, students learn the theoretical knowledge, design skills, and creative thinking of packaging design through the design process of actual projects. For example, the teacher introduces real business cases through school-enterprise cooperation, and by listing the requirements for students, allows student teams to engage in the complete production chain—from market research and creative ideation to design plans and the final product creation—by participating in and practicing the entire project process. Students can explore, practice, and summarize in actual projects, and from the experience summarized, verify or iterate the theoretical knowledge they have already mastered, thereby improving students' design ability, problem-solving ability, and practical experience, and cultivating practical talents that meet social market needs.

4.2.2. Flipped Classroom

The flipped classroom is a teaching model that subverts traditional teaching methods, allowing students to autonomously learn course content in advance through data search, online learning, etc., and use more classroom time for theme discussions, viewpoint sharing, work display, design practice, and problem-solving, with students as the main body of course content, and teachers as guides or observers, supplementing and evaluating the content output by students. In this way, it can better stimulate students' interest in learning, find a sense of value and accomplishment for students, thereby improving the effect of classroom teaching, and it also better fits the strong practicality of packaging design.

4.2.3. Case Study Method

The case study method is a teaching method that learns knowledge and skills through the analysis of real cases. In the packaging design course, a large number of real packaging design cases can be introduced, allowing students to learn the theoretical knowledge and practical skills of packaging design through case analysis and discussion. Through case teaching, students can more intuitively understand the practical application of packaging design, and also cultivate students' ability to analyze and solve problems. In addition, it is possible to combine actual cases in the industry, invite professionals from the packaging design industry to share cases, and allow students to better understand industry development trends and actual application needs.

4.3. Reform of Evaluation Mechanism

The traditional evaluation mechanism mainly focuses on exams and homework, and it is difficult to comprehensively evaluate students' design thinking and innovative capabilities. Therefore, it can be

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attempted to reform the evaluation mechanism in a step-by-step manner from three aspects: process evaluation, industry evaluation, and self-reflection and evaluation. During the course, process evaluation is conducted through regular homework, classroom discussions, project progress reports, etc., to find students' learning problems in time and provide guidance. The goal is to more comprehensively understand students' learning situations and help students adjust their learning directions in time; during the project process, invite professionals from the packaging design industry to review and let students receive real professional evaluations, use industry standards to require student output, not only can keep up with industry demands in a timely manner, but also let students truly understand the gap between their own abilities and the industry. At the same time, students can also review each other, promote mutual exchange, learning, and evaluation, thereby promoting students' multidimensional thinking about works; after the completion of a stage of the project, encourage students to regularly carry out learning logs or learning summaries, reflect on and evaluate their own learning process and results, discover their own shortcomings and progress, adjust learning strategies in time, and improve learning effects [3]. The innovation framework for teaching methods is shown in Figure 3.

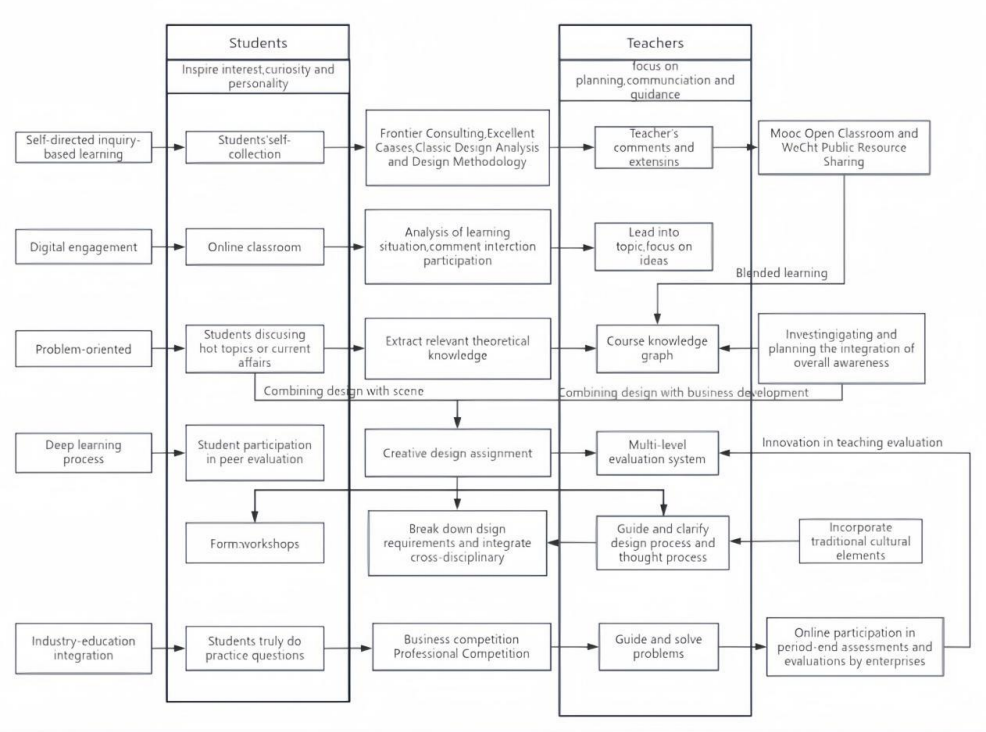

Figure 3: Innovation Framework Diagram for Teaching Methods.

5. Conclusion

This article deeply analyzes the problems existing in the teaching mode of traditional packaging design courses in universities from both theoretical and practical levels, and actively explores the teaching reform strategies guided by design thinking training. The ultimate goal of education is not only to impart knowledge but also to cultivate students' thinking and practical abilities. It is necessary to deeply understand that every course, including professional education, must have the function of education and actively assume the responsibility of education [4]. In the teaching of packaging design courses, it is not only necessary to impart professional knowledge and skills but also to pay attention to cultivating students' design thinking, which can better adapt to future social needs and development. In general, the teaching reform from design skills to design thinking is a great practice of deepening educational reform, and it is an inevitable choice for higher education to improve quality and efficiency [5]. Teachers need to constantly explore in practice, summarize experience, improve mechanisms, construct teaching modes that meet the requirements of the new era, and provide strong educational guarantees for training high-quality design talents.

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