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Research on the "Project-Based" Teaching Model of Packaging Design Course under the Background of Industry-Education Integration

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Abstract

Against the backdrop of the deepening integration of industry and education, the traditional "Packaging Design" course faces prominent challenges such as a disconnect between teaching and the market, weak practical components, and insufficient comprehensive professional skills among students. To address these issues, this study proposes and systematically explores a reform path for implementing a "project-based" teaching model in this course. The article first analyzes the current difficulties in the course regarding faculty structure, teaching focus, and industry-university collaboration. It then demonstrates the significant benefits of introducing "project-based" teaching in improving faculty quality, optimizing resource allocation, achieving a "capability output" orientation, and deepening industry-university collaborative education. The core of the research constructs a complete teaching implementation path driven by specific industry projects, encompassing five stages: "goal setting—team division of labor—design iteration—result evaluation—value extension." It emphasizes the comprehensive cultivation of students' design innovation, project management, and market adaptability through real-world scenarios, teamwork, and diverse evaluations. The conclusion shows that the "project-based" teaching model effectively connects theory and practice, representing a key reform measure for cultivating compound packaging design talents that meet industry needs, and providing a referable solution and theoretical support for the innovation of related design courses.

Keywords:

Industry-education integration; packaging design; project-based learning; teaching model reform; school-enterprise cooperation

Introduction

With the booming development of media tools , packaging is no longer just a tool for protecting and promoting goods , but a medium for reflecting brand connotation and corporate culture. This requires packaging designers to adapt to the ever-expanding market demand. Of course, the market demand for packaging designers with analytical ability and innovative ability for future packaging is also increasing. How to cultivate packaging designers with innovative ability and forward-looking vision is an issue that college design courses urgently need to pay attention to. The traditional teaching model has problems such as the disconnect between teaching and the market and the relatively lagging teaching practice content , which cannot meet the indus-

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try's demand for packaging design talents. In project-based learning, the teacher's leading role is weakened and students gain more autonomy, but they also face problems such as fragmented and disordered learning content, lack of depth and relevance(Chen Qian, Wang Zhaoba, Dong Bing,2025). Project-based learning advocates learning before teaching and learning before instruction, emphasizing students' independent learning and active participation. It starts with trying and practicing, mobilizing students' initiative, creativity, and enthusiasm for learning. Students take the lead, while teachers take a supporting role, realizing a change in the teacher's role and helping to strengthen the cultivation of students' self-learning and innovation abilities. The author has conducted exploratory research and practice on project-based learning in several aspects and has achieved certain results(Lin Jia,2025).This study explores the effectiveness and implementation strategies of the " project-based " teaching model in packaging design courses under the background of industry-education integration , aiming to provide useful references for improving teaching quality and students' professional abilities.

1. Current Status of Packaging Design Course Teaching Model

1.1 There are shortcomings in the allocation of teaching staff and teaching resources are relatively backward .

faculty structure are reflected in the fact that many university teachers are relatively young, with high academic qualifications but little practical experience and in-depth industry experience. Their teaching abilities are mostly theoretical, providing students with very limited opportunities for creative practice. At the same time, the teaching resources of most universities are out of touch with the market, lacking advanced digital packaging design tools and teaching software, resulting in poor teaching effectiveness and insufficient practical skills for students.

1.2 The teaching focus is off, and the teaching methods are monotonous.

In most universities, packaging design courses dedicate more time to theory than practice, emphasizing theory over practice. Teaching is often done for its own sake rather than with a job-oriented approach, resulting in a misaligned focus and failing to truly equip students with design and production techniques and methods. Furthermore, university packaging design courses frequently employ the traditional "teacher lectures, student listens" model, with individual assignments predominating and teamwork rarely being implemented effectively. Communication and collaboration among students are lacking, and project management is inadequate. Students in the classroom are accustomed to passive learning, lacking initiative in thinking and exploration, making it difficult to stimulate their creative enthusiasm and intrinsic motivation for knowledge. Against this backdrop, proposing a "project-based" teaching model can help improve this situation.

1.3 Disconnect between teaching and the market

Today, packaging in the market is intelligent and interactive, reflecting the integration of technology and life. However, under the current teaching model, students lack market exploration, have few opportunities to engage with actual projects, and receive little practical training in packaging. The theoretical teaching method prevents the effective evaluation of teaching content and student creations, leading to graduates' difficulty in

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quickly assessing task requirements and market trends, resulting in a lack of competitiveness in the job market.

2 Significance of Reforming the "Project-Based" Teaching Model in Packaging Design Courses under the Background of Industry-Education Integration

2.1 Enhance the teaching staff, promote the transformation of research results, and optimize teaching resources

Under the "project-based" teaching model, teachers experience industry pressure. During project implementation, their perception of their own professional capabilities shifts, prompting them to proactively link their teaching to the market and industry. Continuously updating teaching materials, optimizing teaching methods, and improving instructional design encourages professional teachers to conduct market-oriented teaching. Teacher teams engage in industry-education integration activities, learning about cutting-edge packaging trends and project outputs, thus promoting the continuous improvement of teachers' knowledge base and enhancing the professional level and teaching quality of the teaching team. Simultaneously, teaching methods and experiences are summarized, results are organized, and research achievements are fostered. In industry-university cooperation, corporate resources enrich on-campus resources, especially hardware equipment and technical support, enabling students' practical projects to proceed smoothly and output applicable packaging designs that are relevant to the market.

2.2 "Knowledge input" should be moderated, and "ability output" should be implemented effectively.

Traditional packaging design courses often focus on theoretical lectures. While students master design software operation and basic theory, they lack the ability to solve practical problems. Project-based teaching uses real-world industry projects as the main course thread, weaving together "appreciation, analysis, practice, and evaluation" to achieve an integrated learning effect. Students are required to participate in the entire process, including design positioning, planning and analysis, styling design, layout editing, material selection, and printing. Through projects, they develop skills in collaboration, comprehensive knowledge application, and project implementation. Project-based teaching breaks down the barriers of the classroom, allowing students to truly understand that "the market is the guide for packaging. Packaging design is not just about design, but about adapting to market demands. Planning, design, cost, and operation are integrated; society needs multi-skilled design talents."

2.3 Enhance school-enterprise cooperation and let industry needs guide teaching direction

The project-based teaching model deepens university-enterprise cooperation. Some universities are even co-establishing industry-university colleges with enterprises to jointly develop talent training programs and explore "order-based" talent training models. Simultaneously, a dynamic update mechanism for course

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resources is established, regularly inviting industry experts to participate in course resource development, introducing the latest industry cases and technologies, and even interdisciplinary teaching, inviting teachers from marketing, materials science, and other majors to collaborate in teaching, thereby enhancing students' comprehensive abilities. The development of the packaging industry, along with market trends and technological innovations, guides the direction of teaching, directly integrating the latest industry technical standards, industry norms, and market pain points into real-world topics in the teaching content. This allows students to access industry frontiers and ensures that educational content precisely meets industry needs. At the same time, enterprises can discover potential talent in advance through projects, reducing recruitment and training costs and forming a virtuous cycle of "education and training—industry absorption—feedback to teaching."

3 Reform Measures for the "Project-Based" Teaching Model in Packaging Design

3.1 Course Design of Packaging Design "Project-Based" Teaching Model

The teaching design of the packaging design course follows the requirements of OBE, starts from the students' learning outcomes, and is positioned as "design serving life". Project-based learning needs to meet three requirements: first, it must have the characteristics of design and inquiry; second, it must have the characteristics of design and inquiry; and third, it must have the characteristics of design and inquiry(Chen Qian, Wang Zhaoba, Dong Bing, Li Shimin,2025). The focus is on using professional expertise to help brand development, exploring the application of Chinese culture in packaging design, cooperating with brands in practical projects, guiding students to conduct market research and competitor analysis, cultivating students' awareness of sustainable development in packaging design, in order to achieve comprehensive training in students' packaging design knowledge, ability and quality, guiding students to learn independently, have an international perspective, actively practice, pursue innovation, and adapt to the new needs of the new era.

3.1.1 Integrating resources to build a teaching ecosystem based on "school-enterprise cooperation"

The core of industry-education integration lies in resource sharing and complementary advantages. Under the "project-based" teaching model, companies bring real-world project cases, cutting-edge industry technologies, and state-of-the-art industry resources and equipment into the classroom, even participating in curriculum design and evaluation. Universities, on the other hand, leverage their advantages in systematic training, resource integration, innovation guidance, and personalized empowerment to provide companies with support in human resources and solution planning, helping them upgrade their products and expand potential markets and cooperation opportunities. This resource integration not only provides students with opportunities to participate in real projects, increasing their chances of internships and employment, but also enhances their job competitiveness, broadens their growth horizons, clarifies their career direction, and reduces confusion. This forms a talent cultivation system where "curriculum content aligns with industry needs, teaching processes align with production workflows, and talent cultivation aligns with job standards," thereby improving professional competitiveness and industry recognition.

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3.1.2 In response to the national rural revitalization strategy, the teaching objectives of the packaging design course are determined from a student-centered perspective. Corresponding to the indicators in the "Graduation Requirements," in terms of knowledge objectives, students will be able to memorize theoretical knowledge and understand relevant national laws and regulations. In terms of ability objectives, students will develop packaging design schemes and innovatively design packaging with Yunnan local cultural characteristics. In terms of character objectives, students will develop a love for Chinese culture and a commitment to using design to serve the development of life. The course will fully consider local characteristic materials, deeply explore natural and environmentally friendly packaging design materials, and develop sustainable packaging.

3.1.3 Learning-Driven Teaching: Optimizing Course Teaching Methods. The packaging design course can employ the following four teaching methods to promote a project-based teaching model: First, case study-based teaching. Students use real-world business cases, conducting practical training according to the company's design requirements. Second, "project-based experiential" teaching. This method uses a practical framework of "appreciation, analysis, hands-on practice, and evaluation" to achieve an integrated theory-practice teaching effect. Third, heuristic teaching. Continuously asking questions guides students' thinking, allowing them to identify correct design principles and methods, integrate knowledge to solve difficulties, and successfully address problems. Fourth, collaborative learning strategies. Design tasks are assigned to project teams in small groups, with copywriters and designers collaborating to complete the design tasks.

3.2 Teaching Implementation Path Guided by Specific Project Tasks

Project-based learning is a student-centered teaching method. It breaks through the limitations of traditional classroom one-way lectures, and designs teaching projects based on real engineering scenarios or industry real problems . It deeply fits the three core concepts of " student-centered , outcome-oriented , and continuous improvement " in engineering education certification , and has become a key path to solve the problem of " theory and practice disconnect " in traditional engineering education , and promotes the structural transformation of engineering education from " knowledge transmission " to " ability cultivation " [2] .

3.2.1 Project Preliminary Goal Setting and Topic Design

The course begins by establishing clearly oriented packaging design project themes and objectives based on the syllabus and students' cognitive stages. Project selection must encompass five modules: planning (project-specific), design (practical application), production (market appeal), packaging (design integration), and promotion (market distribution). For example, projects could involve designing complete packaging solutions for food, cosmetics, and cultural and creative products, or exploring topics such as sustainable design and accessible packaging. Instructors will collaborate with industry professionals to develop projects based on market demands and business models. Industry professionals will provide real-world brand information, corporate culture, project design standards, and cost control, immersing students in a "workplace" environment.

3.2.2 Team building and role allocation at project initiation

Packaging design is essentially a "collective activity," involving multiple stages such as planning, appearance design, graphic design, material selection, and project follow-up. The course divides students into proj-

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ect groups of 3-5 people, each group forming a design team. Roles are assigned based on students' interests, with each person fulfilling specific responsibilities, such as project leader, structural selector, visual designer, and materials researcher. This process truly embodies a "student-centered" approach(Figure1), fostering teamwork and communication skills while participating in the project. Under the guidance of industry professionals or instructors, groups collaboratively complete the project's initiation, conducting research, competitor analysis, user analysis, and design planning. Instructors act as consultants at this stage, guiding students to master research methods and design thinking tools, such as user journey maps, functional matrices, and sustainability assessment forms, ensuring the project is built on a solid research foundation.



Figure 1 Student-centered classroom atmosphere

3.2.3 Design progress and cross-stage iteration in the middle of the project.

Students participate in the development of real projects, including reviewing knowledge theory, agreeing on structural design, strengthening visual design, customizing material planning, and making samples. In packaging structure design, it is necessary to consider the functionality, convenience, presentation status and total cost of the structure as a whole, and conduct experiments using software design or manual production. In visual design, it is necessary to combine corporate culture, brand connotation, information design, consumer groups and output printing technology to complete the packaging graphic design and three-dimensional effect. This stage emphasizes the iterative optimization of "theory and practice integration" and "market demand as the main guide". Practice projects should be based in the local area, and teachers should select small and medium-sized projects that can train students' practical abilities and are in line with students' practical ability levels. The projects mainly come from teachers' horizontal projects, internship base projects and school-enterprise joint projects, etc(Zhao Jiangyuan,2024).Teachers reviewed the work in groups and facilitated group discussions among students. Industry professionals were invited to participate in the course evaluation, providing feedback on the innovativeness, feasibility, and market relevance of the design outcomes. Students continuously refined their plans through revisions, experiencing the rigor and constraints of real-world projects.

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3.2.4 Project deliverables and evaluation by the four parties in the later stages

Project deliverables should include a finalized design proposal, model renderings, a planning scheme, and a project report. The project report should clearly express the design concept, the basis for material selection, cost budget, and feasibility. Course deliverables can be showcased through exhibitions (online and offline), competitions, and exchange activities, enabling students to improve their self-expression and interpersonal skills. The evaluation system is diversified, implementing a "four-party" evaluation system: teacher evaluation, peer evaluation, industry personnel evaluation, and student self-evaluation. This evaluation system helps students to objectively assess themselves, recognize their strengths and weaknesses, and thus find a suitable development direction in the broad field of packaging design.

3.2.5 The value and long-term impact of project-based learning

The implementation of project-based learning in packaging design courses can comprehensively enhance students' abilities. Firstly, it enhances their ability to integrate knowledge across disciplines. Students apply design principles alongside knowledge from materials science, marketing, printing technology, and sociology. Secondly, it cultivates resilience and perseverance. Students need not only the technical skills required for the project but also the ability to understand material structures in the market, customer needs within companies, and user experiences in shopping malls. Thirdly, it develops time management skills. Projects require completing a fixed amount of work within a specified timeframe, unlike regular assignments which allow for more flexibility. Projects demand efficiency and a sense of teamwork; individual work must be completed to ensure the overall progress is not affected. Fourthly, it fosters the ability to serve others. Project-based learning can stimulate students' initiative and responsibility, shifting learning from passive to active. Students proactively consider client needs, communicate with clients, and engage in internal team communication, developing the ability to serve others. They can serve both clients and the team, allowing their value to be realized. Upon completing a full packaging project, students gain not only a project but also a competitive edge to meet future career challenges.

3.2.6 Project-based learning is effective

This article is based on the Yunnan University of Economics and Management's school-level teaching reform project—the school-level first-class course "Packaging Design"(Figure2).Through the implementation of the above five stages, "project-based" teaching has provided a logically clear, convenient, and effective path for teaching the packaging design course, integrating theory and practice. It has also laid a solid foundation for cultivating new-era design talents who are adaptable to industry needs and possess both innovative spirit and practical ability, resulting in a series of achievements. These achievements include: 128 outstanding student packaging design works after the course reform; 47 outstanding student packaging design entries in competitions; 19 groups of outstanding student packaging designs participating in real projects; 4 exhibitions of outstanding student works related to this course organized after the course reform; 37 student awards related to the course content during the course development process; and 11 school-enterprise cooperation units related to this course reform. It has served 19 projects in 9 regions of Yunnan; cooperated with the governments of Honghe and Yuanyang to build a school-government platform to serve student employment and internships (reported on the "Study the Great Nation" platform); and faculty members were appointed as judges

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in national competitions within the field.

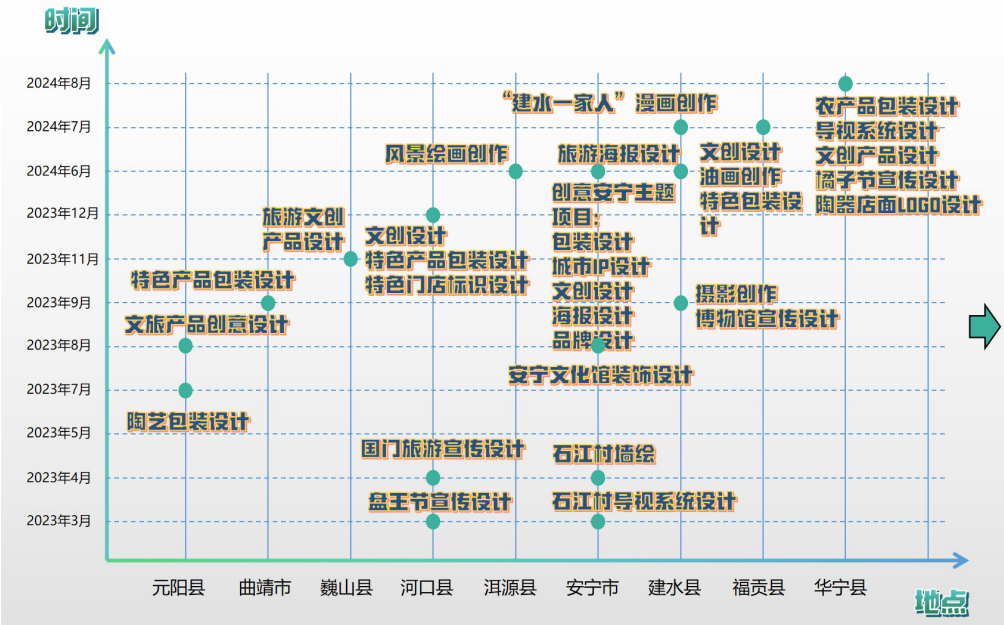


Figure 2 Packaging Design course at Yunnan University of Economics and Management

4 Conclusion

This study, within a teaching environment that integrates industry and education, systematically explores the application and construction of a "project-based" teaching model in the course "Packaging Design" in higher education institutions, addressing existing teaching problems such as disconnect from the market, lack of practical experience, outdated resources, and weak student innovation capabilities. Through theoretical analysis and implementation path design, the following main conclusions are drawn:

Project-based learning is an effective way to overcome the challenges of traditional packaging design education. By introducing real-world industry projects, it directly connects course content and teaching processes with industry standards, market demands, and production workflows. This effectively addresses the shortcomings of traditional teaching, such as insufficient practical experience among teachers, lagging teaching resources, and limited practical opportunities for students, fundamentally shifting the focus of teaching from "knowledge transmission" to "ability development." This study constructs a five-stage implementation path guided by specific project tasks (goal setting and project design, team building and role division, design advancement and iterative optimization, output and multi-dimensional evaluation, course value and long-term impact), providing a clear and operational framework for project-based learning. This path emphasizes deep collaboration between schools and enterprises, a student-centered approach, and a cyclical integration of theory and practice—"appreciation, analysis, practice, and evaluation"—ensuring the systematic nature and effectiveness of project-based learning and significantly improving students' comprehensive professional abilities in planning and analysis, creative design, material application, teamwork, project management, and client communication. The implementation of project-based learning has successfully bridged the gap between school education and industry needs. It not only directly enhances students' employment competitiveness and

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industry adaptability through its educational system that aligns curriculum content with industry needs, teaching processes with production workflows, and talent cultivation with job standards, but also fosters a virtuous cycle of "education and training - industry absorption - feedback to teaching," promoting the professional growth of the teaching team and the continuous optimization of teaching resources.

In conclusion, under the background of industry-education integration, the "project-based" teaching model implemented in the "Packaging Design" course has significant theoretical and practical value for cultivating interdisciplinary design talents with innovative spirit, practical ability, and market insight. Future research can further focus on personalized implementation cases under the characteristics of different regions and institutions, and explore the establishment of a more refined long-term evaluation mechanism for teaching effectiveness to promote the continuous improvement and widespread application of this model.

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