Reform and Practice of the Industry-Education Integration Teaching Model in Private Universities: A Case Study of "Jewelry Design and Craft Practice" at Shanghai Jianqiao University

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Abstract: Taking the course reform of "Jewelry Design and Craft Practice" in Shanghai Jianqiao University as an example, this article discusses the innovative ways of teaching mode for cultivating applied talents in private universities under the background of industry-academic integration. Aiming at the problems of disjointed teaching and insufficient enterprise participation, the curriculum team promotes the integration of education chain and industrial chain through real project-driven, school-enterprise dual tutorial system and modular teaching reconstruction. After the implementation of the reform, the proportion of students participating in real enterprise projects increased from 12% to 68%, and the courses helped students win awards in over ten prizes in design competitions, which was a significant increase compared with that before the reform. The proportion of graduates entering jewelry design and related positions increased to 54.3%. Practice has proved that the teaching mode of project-based and school-enterprise collaborative education has effectively enhanced students' practical ability, innovative consciousness and market adaptability.After the reform, students' participation in corporate projects significantly increased, with both competition awards and targeted employment showing an upward trend.

1. Introduction

In recent years, the industry's demand for high-quality applied talents has become increasingly urgent. Higher education, especially the talent training mode of application-oriented universities, is undergoing a major transformation from "knowledge imparting" to "ability-oriented". Under this background, the industry-academic integration has become the key path to promote education reform and improve the quality of personnel training [1]. As an important part of the higher education system, private universities undertake the task of cultivating many applied talents [2]. Compared with public universities, the mechanism of private universities is more flexible, but there are still shortcomings in terms of teachers, resource accumulation and the depth of school-enterprise cooperation [3]. How to give full play to its own advantages, break through the traditional teaching dilemma of "emphasizing theory and neglecting practice" and truly resonate with the industry at the same frequency is a realistic problem that needs to be solved urgently in many private universities [4]. Especially for art and design majors, students' practical ability, innovation ability and market adaptability directly affect their employment competitiveness and development potential, and the urgency of teaching reform is more prominent [5].

Shanghai Jianqiao University is a private undergraduate college that aims at cultivating applied talents. Its jewelry and art design major has long been focused on serving the development of regional jewelry industry. As one of the core practical courses of this major, the course "Jewelry Design and Craft Practice" covers creative ideas, design iteration,computer-aided design, metal forming,integrated materials, composite processes, and completion inlay and polishing and other complete technological processes, which is highly practical and applied. However, in the teaching process of the past few years, we found that there are some outstanding problems in this course: the teaching content is slowly updated, and some technologies have been out of touch with the mainstream production methods of enterprises; The classroom is dominated by teacher's demonstration, and students mostly imitate passively, lacking real project drive; Enterprise

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participation is limited to short-term lectures or visits, and it is not deeply integrated into the whole teaching process; Students' works are mostly at the "homework" level, lacking the awareness of market transformation and the ability to evaluate business value. These problems make it difficult for students to adapt to job requirements quickly after graduation.

Faced with these challenges, the relevant personnel realize that simply adjusting the course content or optimizing the teaching methods can't completely solve the problem. We must start from the root of the talent training mechanism, reconstruct the teaching logic, and break the barrier between education and industry. Taking the course "Jewelry Design and Craft Practice" of Shanghai Jianqiao University as an example, this study combs the motivation, implementation path and phased effect of the reform, and tries to answer: How to promote the industry-academic integration from "formal cooperation" to "substantial co-education" through precise reform at the curriculum level in private universities with relatively limited resources?

2. Analysis of reform background and problems

“Jewelry Design and Craft Practice "is the main practical course of jewelry design major in Shanghai Jianqiao University. For a long time, this course is of great significance in cultivating students' practical ability, technological skills and design expression. The course includes creative conception, computer drawing, metal forming, inlay and polishing, etc., and pays attention to the integration of theory and practice. However, in view of the rapid changes in design concept, production technology and market demand in jewelry industry in recent years, the original teaching model gradually exposed some unsuitable conditions.

First, the updating speed of teaching content can't keep up with the pace of industrial development. Although the curriculum system is relatively perfect, traditional techniques are still emphasized in some process teaching, and few new materials and new processes widely used in enterprises are mentioned. Just like in casting and mold turnover, basic gypsum mold is still the main teaching method, but in actual production, silica gel mold with automatic wax injection has become the mainstream way; In terms of design expression, the application of emerging technologies such as 3D printing and digital modeling has not been fully integrated into classroom teaching. To some extent, this affects students' complete understanding of modern jewelry production process, as shown in Fig.1.

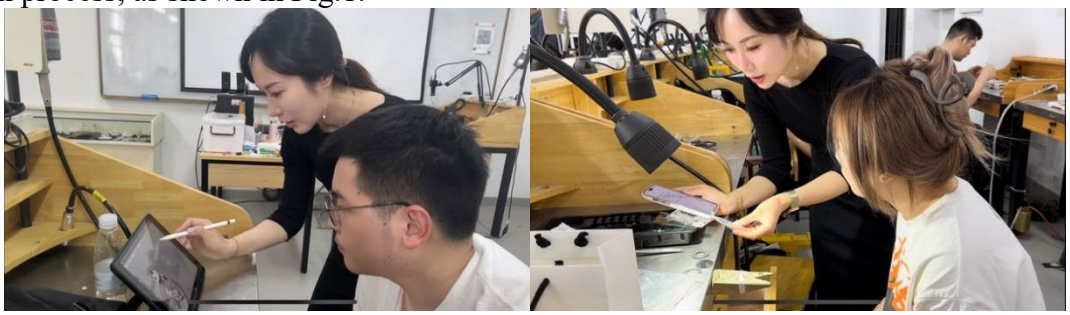

Fig.1 Classroom Demonstration and Practical Teaching

Second, practical teaching lacks realism and project sense. At present, most training projects are standardized tasks set by teachers. Although students can master the basic operation, they lack the comprehensive coping ability in real scenes. For example, the common problems in practical work, such as customer communication, cost control and feasibility evaluation of mass production, are rarely involved in teaching, which makes it take students a long time to adapt to the job requirements after entering the enterprise. Some graduates report that school works pay more attention to artistry, while enterprises pay more attention to practicality and production efficiency, and there is a certain gap between them.

Third, the depth and continuity of school-enterprise collaboration need to be strengthened. Although the course has tried to adopt cooperative forms such as enterprise lectures, visits and internships, the mechanism for enterprises to participate in teaching is not perfect, and most of them

are staged and scattered interactions, lacking the system guarantee of system design and long-term cooperation. It is difficult for enterprise technicians to deeply participate in course guidance, and it is also difficult for schools to flexibly adjust teaching arrangements according to the actual projects of enterprises, and the resources of both sides failed to achieve efficient docking.

In addition, the teaching evaluation method is still based on summative evaluation, which mainly focuses on the completion and aesthetics of works, and pays relatively little attention to the design process, teamwork and innovative thinking. This evaluation orientation inhibits students' enthusiasm for trying complex structures or innovative materials to a certain extent, which is not conducive to the comprehensive cultivation of students' comprehensive ability.

Generally speaking, the course has a good foundation in the cultivation of applied talents, but there is still room for optimization in meeting the needs of the industry, driving teaching with real projects, and building a collaborative education mechanism. In view of the urgent demand for compound and practical talents in jewelry industry, it is urgent to promote the transformation of teaching mode from "skill training" to "ability generation" through systematic reform, and effectively achieve the organic combination of education chain and industrial chain.

3. Reform ideas and implementation paths

The industry-academic integration is not a simple enterprise lecture, joint exhibition or factory visit, but the integration of industrial logic into the curriculum [6]. Since 2024, the course "Jewelry Design and Craft Practice" has been taken as a pilot to explore a more practical and sustainable reform path.

The primary task of the reform is to redefine the curriculum objectives and position them as "cultivating applied talents who can complete the complete design project and have market awareness" [7]. Around this goal, the teaching content is modularized and reconstructed, and the scattered knowledge points in the past are integrated into five progressive links: "design conception-digital modeling-material selection-process realization-finished product evaluation", each of which corresponds to the post process in actual production. For example, the "material selection" part not only explains the physical characteristics of gold and silver, but also introduces cost accounting and the development trend of environmentally friendly materials.

Then, real projects are introduced to communicate with the cooperative jewelry enterprises, and small design tasks are sought as course assignments. Students undertake them in groups, and the whole process simulates the real workflow. Some enterprises produced a ring designed by students in small batches, which greatly inspired students.

In order to improve the enthusiasm of enterprise participation and establish a "double tutor" mechanism, each group of students is equipped with an enterprise designer as a practical tutor in addition to the on-campus tutor. Enterprise designers participate in scheme evaluation and follow up the project progress. At first, the time and content of enterprise participation were clarified. With the establishment of trust, some enterprises actively increased the frequency of cooperation and even provided material support.

The teaching organization mode is adjusted to "project-driven+teamwork" mode, and students complete two or three complete projects in one semester, paying attention to process records and including them in the final grade. The evaluation system has also been adjusted, and the assessment of project management ability has been increased, and the score of enterprise tutors accounts for 30% of the total score.

In the process of reform, there are some problems, such as temporary adjustment of enterprises' needs and poor teamwork among students. These problems have also become part of teaching, and time will be specially arranged in class to discuss the countermeasures.

4. Practical results and achievements

After nearly three years of continuous exploration, the reform of integration of production and teaching in the course "Jewelry Design and Craft Practice" has gradually shown positive results.

The most intuitive changes are reflected in students' learning status and the quality of their achievements. In the past, students often "finished their homework after handing it in", but now they are more willing to polish their plans repeatedly, take the initiative to consult corporate tutors, and even continue to improve their works after the course is over. This change from "asking me to do" to "I want to do" reflects the stimulating effect of the adjustment of teaching mode on students' internal motivation.

In terms of ability training, students' comprehensive practical ability has been significantly improved. They have not only mastered the traditional metalworking techniques, but more importantly, they have established a knowledge of the complete design process and can express creatively in combination with market demand. In this study, students majoring in jewelry design in Grade 2024 and Grade 2025 of Jewelry College of Shanghai Jianqiao University were selected as the research objects. Among them, grade 2024 is the control group (32 people) before the reform, and grade 2025 is the experimental group (35 people) after the reform. The data were obtained through course file access, enterprise cooperation record verification, competition award statistics and one month's follow-up survey after the end of the course. All the data are jointly confirmed by the course team and the cooperative enterprise to ensure the consistent statistical caliber. Table 1 shows the comparison of students' participation in practice, the quality of project completion and employment destination between the two sessions, as shown in Table 1.

Table 1: Comparison of student engagement and outcomes

Indicator	2023 Cohort (Pre-reform)	2026 Cohort (Post-reform)
Proportion involved in real industry projects	12%	68%
Proportion participating in design competitions	18%	53%
Number of awards at institutional level or above	5	14
Number of students continuing to refine work after course	3	17

With the introduction of real projects and competition mechanism, students' enthusiasm for participation has been significantly improved, and the quantity and quality of output have been improved.

In terms of employment, the employment situation of graduates has also improved. Through the follow-up of graduates in the past three years, the proportion of those who have entered jewelry design companies, craft studios or engaged in related freelancing has increased, and some students have been retained by enterprises during their internship. Although it is difficult to make complete and accurate statistics due to the overall employment environment, from the feedback of employers, students have gained more recognition in terms of post adaptation speed, hands-on ability and communication and cooperation, as shown in Table 2.

Table 2: Graduate employment destinations (sampled)

Employment path	2023 Graduates (n=30)	2026Graduates (n=35)
Jewelry design / craftsmanship	13 (43.3%)	19 (54.3%)
Non-related fields	10 (33.3%)	8 (22.9%)
Self-employment / freelance	3 (10.0%)	6 (17.1%)
Further study	4 (13.3%)	2 (5.7%)

In the survey, stratified sampling method was used to systematically track the graduates of jewelry design in 2023 (one year after graduation) and 2026 (six months after graduation). The sample includes graduates registered through the school employment system, corporate feedback, alumni interviews and social media, excluding cases with incomplete information or unable to contact. The proportion of 54.3% is based on the statistical results that 19 of the 35 graduates in

2026 entered jewelry design-related positions. Table 2 shows that after the reform, the proportion of students entering major-related positions has increased by more than 10%, and the number of people who choose freelance or take orders independently has also increased. This reflects that students' confidence in the career path is enhanced and their understanding of the industry ecology is more diverse.

In addition, the curriculum reform has also promoted the accumulation of teaching resources and the deepening of school-enterprise cooperation. With the gradual stabilization of the cooperation mechanism, the number of enterprises participating in the course has expanded from the initial three to five, and the number of projects and the coverage of students have continued to expand, as shown in Table 3.

Table 3: Industry collaboration projects (2023–2026)

Year	No. of partner companies	Projects conducted	Student participations	Industry mentor sessions
2024	3	4	48	9
2025	4	6	72	15

Table 3 reflects that school-enterprise cooperation is changing from "tentative participation" to "normal interaction". The number of student participations is calculated using a "project-student" dual-counting method, meaning that when the same student participates in multiple projects, each participation is counted separately to accurately reflect the expanding reach of enterprise projects among students. For example, if a student participates in two different enterprise projects, it is recorded as two participations. This method provides a more realistic representation of the breadth and depth of school-enterprise collaboration, rather than focusing solely on the total number of participating students. All data are sourced from records in the course management system and enterprise collaboration logs, and are jointly verified and signed off by both the school and enterprise mentors.

The participation frequency of enterprise tutors is increasing year by year, which shows that their recognition of teaching cooperation is improving. Although the current project scale is still small, and most of them focus on short-term tasks, it has initially formed a sustainable cooperation foundation.

Of course, there are still limitations behind the results. For example, some projects change their demand halfway due to the adjustment of production arrangements of enterprises, which affects the rhythm of students; Some students also reflect the uneven division of labor in teamwork. However, these problems themselves have become a part of teaching reflection, prompting the content of project management and communication and coordination to be added in the subsequent curriculum design.

5. Conclusions

Taking the course "Jewelry Design and Craft Practice" as the breakthrough point, this study explores the feasible path for private universities to promote the industry-academic integration under the condition of relatively limited resources. By reconstructing the teaching content, introducing real projects, establishing a double-tutor mechanism between schools and enterprises, and strengthening process management and multiple evaluation, the course has gradually changed from traditional skill training to practical teaching mode with ability generation as the core. In the process of reform, students no longer just finish their homework, but go through the whole design process in real situations, which improves their innovation consciousness, hands-on ability and market sensitivity, and the employment matching rate and enterprise feedback also show positive changes.

Practice shows that the key to the industry-academic integration lies not in the number of forms of cooperation, but in whether industrial logic is truly integrated into the teaching core. For private universities, it is a realistic and sustainable path to give full play to the advantages of flexible mechanism, start with a small incision, and promote the overall improvement of professional

construction with the in-depth reform of a course. Although there are still some problems such as the different depth of enterprise participation and the long-term mechanism to be improved, the initially formed "project-driven, collaborative and co-educational, results-oriented" model has certain reproducibility.

Future research will further expand the scope of cooperation on the existing basis, continue to increase the number of collaborating enterprises, and establish a long-term corporate mentor pool during the 2025–2027 academic years. It will also explore the connection mechanism between curriculum achievements and regional industrial services, thereby enhancing the sustainability of outcomes and providing more practical, operational references for the cultivation of applied talents in private universities.

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References

[1] Li Ting, Zhang Huang, Zheng Jinsong. Exploration on the Upgrading and Transformation Path of Traditional ICT Majors in Private Universities under the Background of Emerging Engineering Education[J]. Research in Higher Education of Engineering, 2023(4):36-41.

[2] Zhang Yang, Luo Siming, Xu Ying, et al. Research on the Ability of University Leaders in Industry - Education Integration[J]. Research in Higher Education of Engineering, 2024(3):103-108.

[3] Liu Yanjun, Zhang Wangke, Wang Xiaowu. Formation and Promotion Mechanism of Teachers' Industry - Education Integration Ability in Application - oriented Universities[J]. Research in Higher Education of Engineering, 2024(5):102-107.

[4] He Ying. Research on the Multiple Education Mechanism in Colleges and Universities under the Background of Industry - Education Integration[J]. Theory and Practice of Education, 2022, 42(30):32-35.

[5] Shan Chunyan, Zeng Huiling, Li Zuozhang. Element - Driven, Main Characteristics and Mechanism Innovation of Deepening Industry - Education Integration in Chinese Universities[J]. Heilongjiang Researches on Higher Education, 2022, 40(11):31-37.

[6] Zhang Zhang, Zhou Xinwang, Zeng Boshi. Evaluation of the Maturity of Industry - Education Integration in Local Colleges and Universities Based on Symbiosis Theory[J]. Research in Higher Education of Engineering, 2023(4):122-128.

[7] Yue Peng, Han Shuo, Yi Xiang, et al. Research on the Collaborative Education Mechanism of Industry - Education Integration in Universities of Science and Technology[J]. Education Review, 2022(11):152-155.