

Reform of Practical Outcome Evaluation Mechanisms for Design Professional Degree Postgraduates

Danhua Xu, Wei Zhu*, Xiaoyu Ying, Miao Zhou, Jiantao Weng

School of Spatial Planning and Design, Hangzhou City University, Hangzhou, China

**Author to whom correspondence should be addressed.*

Copyright: © 2026 Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), permitting distribution and reproduction in any medium, provided the original work is cited.

Abstract: The cultivation of design professional degree postgraduates emphasizes practical ability and innovative spirit. However, the current evaluation system generally suffers from overemphasis on academic achievements at the expense of practical ability, disconnection between curriculum and industry needs, and diversity without integration of supervisor teams. Taking the cultivation of design professional degree postgraduates at Hangzhou City University as a case study, this research constructs a multi-dimensional evaluation mechanism centered on practical outcomes from three dimensions: evaluation orientation transformation, teaching model reform, and supervisor collaboration optimization. By building interdisciplinary supervisor groups, implementing real-project-driven practical teaching, establishing a multi-stakeholder evaluation system, and using information technology for process data collection and dynamic feedback, this study explores a feasible path for transforming the evaluation system for design postgraduates. In a two-year action research project, a controlled experiment was conducted on 14 postgraduates (7 in the reform group, 7 in the control group). Data were collected through questionnaires, in-depth interviews, and outcome comparisons. The results show that the reform group significantly outperformed the control group in design intention clarity, practical problem awareness, supervisor feedback benefit, and evaluation fairness. The participation rate and award rate in design competitions, as well as the average blind review score of teachers, were significantly higher. This paper provides operational experience and reference for the evaluation reform of postgraduate education in design and related disciplines.

Keywords: Design professional degree; Postgraduate education; Practical outcome evaluation; Multi-dimensional evaluation; Interdisciplinary cultivation

Online publication: June 12, 2026

1. Introduction

During the 14th Five-Year Plan period, China's higher education reform has been steadily advanced.

China's Education Modernization 2035 explicitly calls for “strengthening the cultivation of practical skills, cooperation abilities, and innovation capabilities.” The Ministry of Education’s *Opinions on Accelerating the Reform and Development of Postgraduate Education in the New Era* (Teaching [2020] No. 9) requires professional degree postgraduate education to be oriented towards enhancing professional competence and reforming evaluation mechanisms. In 2022, the design professional degree emerged as an independent professional degree category, marking a new stage of “classified development” in China’s design education system. The training goal of design professional degree postgraduates is high-level applied talents, yet in practice, the evaluation still generally adopts the criteria of academic degrees—relying mainly on paper publication—leading to a tendency of “emphasizing academics over practice.” How to construct an evaluation mechanism oriented towards practical outcomes and involving multi-stakeholder participation has become an urgent practical issue.

Taking the cultivation of design professional degree postgraduates at Hangzhou City University as a case study, this research designs and implements a reform scheme using real projects as the carrier, interdisciplinary supervisor groups as support, and multi-dimensional evaluation as the means. Through a controlled experiment, the reform effect is tested to provide a reference for the evaluation reform of design postgraduate education.

2. Research background and problem analysis

2.1. Overemphasis of evaluation systems on academic achievements and neglect of practical ability

Currently, the evaluation of design professional degree postgraduates generally uses the number of academic papers as the main indicator, with insufficient attention to practical ability, innovative spirit, and teamwork. Zhou *et al.* ^[1] pointed out that the promotion of supervisors and the job-seeking or further study of students all depend on the number of academic papers, and professional degree education still has an “academization” tendency, deviating from the training goals. Wang and Dong ^[2] noted that although China’s professional degree postgraduate education has made remarkable progress, it still suffers from convergence with academic degree training models, and the characteristics of practicality and applicability are not sufficiently distinct. Although professional degree postgraduates have clear internship and practice requirements, there is a lack of systematic standards for the quality of practical outcomes. Students invest a large amount of energy in thesis writing, while core design abilities such as scheme conception, engineering implementation, and teamwork are hardly adequately exercised.

2.2. Disconnection between curriculum and industry needs

There is a clear gap between training content and the actual needs of the design industry. First, curriculum updates lag behind technological developments, with insufficient integration of new technologies such as AI-assisted design and parametric modeling. Second, the number of practice bases is limited and their quality varies, making it difficult for students to be exposed to real projects and complete work cycles. Third, university-industry cooperation mostly stays at the agreement level, with corporate experts rarely participating in course teaching and outcome evaluation, resulting in insufficient depth of industry-education integration ^[3].

2.3. Diverse but unintegrated supervisor teams

The professional backgrounds of design professional degree supervisors span multiple disciplines such as industrial design, visual communication, environmental design, and architectural design, providing a foundation for interdisciplinary training. However, actual guidance is still dominated by a single-supervisor system, lacking an institutionalized platform for interdisciplinary supervisor groups^[4]. There is little regular collaboration among supervisors from different disciplinary backgrounds, making it difficult to transform into resources for students' interdisciplinary ability cultivation. Moreover, some supervisors lack experience in design firms and have insufficient practical guidance abilities.

2.4. Incomplete policy support and evaluation standards

The Ministry of Education's *Opinions on Deepening the Classified Development of Academic Degree and Professional Degree Postgraduate Education* (2023) encourages multiple forms of dissertation or practical outcome assessment for master's professional degrees. However, implementation varies greatly across regions and institutions, and a universally applicable and operable evaluation standard for practical outcomes has not yet been formed. Relevant policies and supporting systems are still imperfect^[5], with uneven resource allocation, making it difficult to effectively promote systematic reform.

3. Research methods and reform design

3.1. Research methods

This study adopts action research, combined with case study, questionnaire survey, in-depth interview, and data analysis. Action research is characterized by “research in practice, research for practice”; the researchers are also the designers and implementers of the reform, constantly reflecting and adjusting the plan during the action. The research period is from September 2023 to September 2025. The research subjects are design professional degree postgraduates at Hangzhou City University. Under the same training program, a controlled experiment was set up, with one group receiving practical teaching reform and the other as the control group. The reform group (7 students) adopted an interdisciplinary supervisor group model, real projects as practical topics, and a multi-stakeholder evaluation mechanism; the control group (7 students) adopted a single-supervisor, conventional course design, and single-supervisor evaluation model. There were no significant differences between the two groups in entrance scores and previous course average scores, ensuring comparability.

Data collection methods included: (1) Questionnaire surveys distributed before and after the pilot to understand students' attitudes and satisfaction with the evaluation mechanism; (2) In-depth interviews with 6 students and 4 supervisors to obtain qualitative feedback; (3) Project process data collection, including project completion progress, stage outcome scores, peer evaluation scores, and corporate feedback; (4) Outcome comparison analysis, comparing differences in the quantity and quality of practical outcomes between the pilot and control groups.

3.2. Specific design of the reform framework

Based on the problem analysis above, we designed a reform framework comprising three core modules.

Module 1: Operation mechanism of interdisciplinary supervisor groups. Under the traditional single-supervisor system, students' vision is limited to their supervisor's research direction. Based on information

about supervisors' research directions, project experience, and student mentoring preferences, we form 3–5 member supervisor groups with complementary expertise. For example, a supervisor with an industrial design background, one with an architectural background, and one with a visual communication background form a group to jointly mentor 3–5 students. The supervisor group adopts a “main supervisor + collaborating supervisors” model: the main supervisor is responsible for students' daily management and academic norms, while collaborating supervisors participate in evaluation at key nodes such as proposal, mid-term, and defense, and provide professional consultation. The supervisor group holds a monthly meeting to discuss student progress and coordinate mentoring tasks. Students can anonymously evaluate the supervisor group, and the results are incorporated into supervisor assessment.

Module 2: Real-project-driven practical teaching. The core of the reform is “real project practice.” We established three types of project sources: first, actual projects from university-industry cooperation bases; we signed agreements with 8 design institutions in Zhejiang Province, providing no less than 20 real projects annually. Second, public service design needs issued by governments or social organizations, such as rural revitalization, urban micro-renewal, and community building. Third, sub-projects suitable for student participation from supervisors' horizontal research projects. Students form teams (encouraging interdisciplinary teams) to select real projects and complete the entire process from demand analysis to scheme design under the guidance of the supervisor group. The project cycle is generally 3–6 months, and each student must participate in at least two real projects to obtain practice credits.

Module 3: Multi-stakeholder evaluation system. Evaluation stakeholders include the supervisor group (40%), corporate experts (30%), user representatives (20%), and the public (10%). Evaluation indicators include five dimensions: design innovativeness (30%), technical feasibility (25%), outcome completeness (20%), teamwork (15%), and social impact (10%). Each dimension has 3–5 second-level indicators; for example, “design innovativeness” includes “novelty of problem definition,” “originality of solution,” “creativity of design expression,” etc. We developed an online scoring system that allows different roles to score according to preset indicators, automatically computes weighted total scores, and generates a competency radar chart. Different project types can adjust weights: for market-oriented product design, the weights of corporate experts and user evaluation are increased to 40% and 25%; for research-oriented design projects, the supervisor group's weight is increased to 60%.

3.3. Process data collection and feedback mechanism

To achieve process evaluation of practical outcomes, we established a key-node data collection system. Each real project is divided into five stages: needs research, conceptual design, scheme development, outcome production, and final defense. At the end of each stage, students submit stage outcomes (e.g., research reports, sketch collections, model photos, etc.), and the supervisor group and corporate experts review online and provide scores and written feedback. The system automatically records students' login frequency, file upload count, discussion participation, and other behavioral data as supplementary evidence for process evaluation. When a student's indicator consistently falls below a threshold for a certain period, the system sends alerts to the supervisor and the student. All process data are weighted together with the final defense score to form the final evaluation result. This mechanism ensures that the evaluation focuses not only on the final outcome but also on students' engagement and growth during the project process.

4. Preliminary results and discussion

4.1. Comparative analysis of outcomes

The research team conducted a questionnaire survey on the two groups of students (Likert 5-point scale, 1 = strongly disagree, 5 = strongly agree), and also collected competition participation, awards, and final defense blind review scores.

Regarding evaluation fairness and perceived reflection of ability: For the item “my final grade truly reflects my professional ability and contribution,” the mean score of the reform group was 4.86 (SD = 0.38), while that of the control group was 3.57 (SD = 0.79). An independent samples *t*-test showed a statistically significant difference ($t(12) = 3.89, P < 0.01$).

Regarding design intention clarity and practical problem awareness: For the item “I have a clearer understanding of the goals and intentions of the design task,” the reform group’s mean was 5.00 (SD = 0.00), the control group’s mean was 3.43 (SD = 0.79), with a significant difference ($t(12) = 5.29, P < 0.001$).

Regarding the dimensionality and benefit of supervisor feedback: For the corresponding item “Feedback from supervisors from different professional perspectives greatly helped me improve my design” (reform group) vs. “Feedback from my supervisor greatly helped me improve my design” (control group), the reform group’s mean was 4.86 (SD = 0.38), the control group’s mean was 3.43 (SD = 0.53), with a significant difference ($t(12) = 5.80, P < 0.001$).

Regarding satisfaction with the evaluation mechanism: For the item “I am satisfied with the evaluation mechanism of this course (scoring method, evaluators, feedback frequency),” the reform group’s mean was 4.71 (SD = 0.49), the control group’s mean was 3.00 (SD = 0.82), with a significant difference ($t(12) = 4.74, P < 0.001$).

Regarding practical outcomes and competition participation: All students in the reform group (100%) participated in design competitions related to the course, with three student entries winning provincial-level or higher awards (one first prize, two second prizes), an award rate of 43%; in the control group, only two students (29%) participated in a competition, with one winning a third prize at the university level, an award rate of 14%. Moreover, four students (57%) in the reform group received internship invitations or project cooperation opportunities from partner enterprises after the course, while none in the control group did.

Regarding final blind review scores: Three evaluation teachers (not members of the supervisor groups) blind-scored the final design schemes of the two groups (100-point scale). The mean score of the reform group was 86.4 (SD = 3.8, highest 92, lowest 81), while that of the control group was 78.2 (SD = 5.1, highest 85, lowest 70), with a significant difference ($t(12) = 3.41, P < 0.01$).

In open-ended questionnaires, typical feedback from reform group students included: “Only after field interviews with villagers did I truly understand the users’ needs”; “Several teachers from different disciplines raised questions from various angles each time, making the design more solid”; “The budget suggestions given by corporate experts were very practical—we had no concept of that before.” Control group students, in contrast, reported: “The virtual topic lacked a sense of reality, so design motivation was low”; “The supervisor’s sole judgment sometimes felt unfair.” The above comparative data demonstrate that the reform scheme—using real projects as the carrier, interdisciplinary supervisor groups as support, and multi-stakeholder evaluation as the means—achieved significant results in improving students’ design intention clarity, practical problem awareness, supervisor feedback benefit, evaluation fairness, competition participation enthusiasm, and final design quality.

4.2. Discussion: Key success factors and limitations

In analyzing the reasons for the initial success of the reform, we believe the following factors are crucial. First, strong leadership commitment and institutional support from the university. Hangzhou City University has made postgraduate education reform an institutional strategy, providing policy foundation and funding guarantees for this study. The Graduate School revised the training program to incorporate practical outcome evaluation into degree awarding conditions, giving the reform institutional rigidity. Second, the collaborative spirit of the interdisciplinary team. The members of the supervisor group come from different disciplines but can communicate fully and complement each other; this collaboration model itself also provides a demonstration for students. Third, the deep engagement of corporate partners. The three enterprises we chose are influential design institutions in the industry, and their design directors are enthusiastic about talent cultivation and willing to invest time in evaluation and guidance.

However, there are also notable limitations and challenges. First, the complexity of the evaluation process increases the workload for teachers. Supervisor groups need to spend more time reviewing process materials and filling out scoring forms, and some teachers are resistant to this. We tried to simplify the process by optimizing the scoring interface and setting up template-based score sheets, but the extra burden cannot be completely eliminated. Second, the quantitative evaluation of practical outcomes still has subjectivity. Although we designed detailed indicators and weights, concepts such as “innovativeness” and “impact” are difficult to fully objectify, and differences in scores among different evaluators persist. We used the average of multiple evaluators to reduce error, but it cannot be eradicated. Third, the generalizability of the reform outcomes needs further verification. This study was conducted at only one university with a limited sample size, and the specificity of design disciplines may limit the transferability of conclusions to other disciplines. Finally, the construction and maintenance of information platforms require substantial technical and financial investment, which may be difficult for resource-constrained institutions.

5. Conclusion and outlook

Focusing on the problems of overemphasis on academics at the expense of practice, disconnection between curriculum and needs, and insufficient supervisor collaboration in the evaluation system for design professional degree postgraduates, this study constructed a practical-outcome-oriented multi-dimensional evaluation mechanism based on the case of Hangzhou City University. Through reform measures such as interdisciplinary supervisor groups, real-project-driven teaching, and multi-stakeholder evaluation, the controlled experiment showed that the reform group significantly outperformed the control group in design intention clarity, practical problem awareness, supervisor feedback benefit, and evaluation fairness, with significantly improved design quality, competition participation rate, and award rate. The study confirms the effectiveness of real projects and multi-stakeholder evaluation in enhancing students' practical abilities. This outcome provides operational experience for the evaluation reform of design postgraduates, but the sample size is limited, so future expansion of the pilot and long-term effect tracking is needed. The evaluation reform of design professional degree postgraduate education is a complex, long-term systematic project. This study is only an initial exploration, hoping to draw more attention from scholars and practitioners to jointly promote the continuous improvement of professional degree postgraduate education quality.

Funding

Zhejiang Province Higher Education “14th Five-Year Plan” Postgraduate Teaching Reform Project (No. JGCG2024478); Hangzhou City University Undergraduate Teaching & Research Project (No. JGZD2503)

Disclosure statement

The authors declare no conflict of interest.

References

- [1] Zhou W, Zhang A, Chen Q, 2025, Forms and Evaluation of Practice Outcomes for Professional Degree Postgraduates—A Symposium Summary on the Implementation of the Core Issues of the “Academic Degrees Law of the People’s Republic of China.” *Academic Degrees & Graduate Education*, (7): 17–23.
- [2] Wang N, Dong Z, 2025, Research on the Construction of Internal Quality Assurance System for Professional Degree Postgraduates from the Perspective of Collaborative Innovation. *Teaching Research*, 48(2): 25–33.
- [3] He J, Liu D, 2024, Reviewing the Past to Learn the New: Retrospection and Reflection on Professional Degree Postgraduate Education in Art and Design. *Art Education*, (2): 30–34.
- [4] Zong W, 2020, Research on the Teaching Reform of “Double-Supervisor System” in Art and Design Major under the Background of Scientific and Technological Innovation. *Science & Technology Vision*, (34): 44–45.
- [5] Li W, 2025, Development Status, Institutional Dilemmas and Optimization Paths of Professional Degree Postgraduate Training Models: Based on Questionnaire Survey and Institutional Analysis. *Vocational and Technical Education*, 46(26): 18–24.

Publisher’s note

Bio-Byword Scientific Publishing remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.