

Research on the Application of Ancient Village Practice Bases in Professional Fieldwork Courses from the Perspective of Industry–Education Integration

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Abstract: Against the backdrop of the transformation of application-oriented undergraduate institutions, professional fieldwork, an essential practical component in Environmental Design education, faces several challenges, including a mismatch between teaching content and industry demands, low efficiency in the transformation of practice-based resources, and the superficial cultivation of professional competencies. This study takes the university student social practice base jointly established by Guangdong University of Science and Technology and Nanxisha Ancient Village in Chashan Town, Dongguan as the research context, and explores curriculum reform pathways from the perspective of industry–education integration. By constructing a “base + curriculum” dual-driven model, the cultural heritage resources of ancient villages are systematically transformed into pedagogical resources, thereby enabling collaborative education between universities and industry partners. Empirical practice demonstrates that this model significantly enhances students’ professional practical abilities, cultural understanding, and vocational competencies, offering a replicable and scalable reference for the reform of professional fieldwork courses in application-oriented undergraduate institutions.

Keywords: Industry–education integration; Professional fieldwork; Ancient village; Practice base; Environmental design; Applied undergraduate education

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1. Introduction

1.1. Research background

Professional fieldwork is a compulsory practical component in the training program of Environmental Design, aiming to help students construct a systematic disciplinary cognition framework through on-site investigation and analytical observation, while fostering their observational ability, critical thinking,

and innovative capacity. However, conventional teaching models often fall into a superficial “touristic observation” approach, characterized by fragmented field content, weak alignment with curricular objectives, and a lack of systematic practical guidance, thereby failing to support the cultivation of application-oriented talents adequately.

In 2023, the Ministry of Education of the People’s Republic of China issued the Opinions on Deepening the Reform of the Modern Vocational Education System, which explicitly emphasizes the need to “promote industry–education integration and school–enterprise cooperation, and deepen educational and teaching reform ^[1].” Against this policy context, the Education Department of Guangdong Province launched the Higher Education Teaching Quality and Teaching Reform Project, supporting universities in establishing student social practice bases to advance deep integration between industry and education.

Relying on the rich historical and cultural resources of Nanxisha Ming and Qing Ancient Village in Chashan Town, Dongguan, Guangdong University of Science and Technology has been approved to establish the “Guangdong University of Science and Technology – Nanxisha Ming and Qing Ancient Village University Student Social Practice Base” (Project Approval No.: GKZLGC2023165), which provides an important practical platform for the reform of professional fieldwork courses.

1.2. Research significance

As a nationally recognized historic and culturally significant village, Nanxisha Ming and Qing Ancient Village preserves a large number of architectural complexes from the Ming and Qing dynasties, demonstrating substantial historical, artistic, and scientific value. Integrating ancient village resources into professional fieldwork courses not only enriches instructional content and enhances students’ cultural identity, but also enables the construction of an integrated “industry–academia–research–application” practice-based teaching model through university–enterprise collaboration and university–local government coordination, thereby improving the overall quality of talent cultivation.

The significance of this study is threefold. First, it explores innovative teaching models for professional fieldwork courses within the context of industry–education integration, providing a reference for the reform of similar courses. Second, it uncovers the educational value of cultural heritage resources in ancient villages and promotes the revitalization and utilization of traditional cultural assets. Third, it constructs mechanisms for the development and operational management of practical teaching bases in application-oriented undergraduate institutions, offering valuable experience for university–local collaboration.

2. Literature review and theoretical foundation

2.1. Research on industry–education integration

Industry–education integration refers to the deep collaboration between industry and education sectors in areas such as talent cultivation, scientific research, and social services, aiming to achieve resource sharing, complementary advantages, and mutual development. In recent years, domestic research on industry–education integration has mainly focused on the following aspects:

In terms of talent cultivation models, Yang Han and Zheng Dong (2023) proposed innovations in the training model for environmental art and design majors from the perspective of industry–education integration, emphasizing the establishment of “dual-qualified” (double-mentor) teaching teams through university–enterprise cooperation to align curriculum content with occupational standards ^[2]. Zhao Kaiying

and Li Wendong (2022), taking the course “Architectural Lighting Design” as an example, investigated blended teaching approaches under a school–enterprise integrated education model ^[3]. Zhong Hua (2023) focused on the design methodology of industry–education integration practice bases, arguing that such bases should simultaneously address pedagogical functions and industrial requirements ^[4].

In terms of curriculum reform, Wu Zhixue (2022) examined project-based teaching and instructional control models in environmental design education, highlighting the use of real-world projects as instructional carriers ^[5]. Sun Ye and Chen Pengxu et al. (2022) explored the application of virtual reality technology in environmental art and design education, providing new perspectives for industry–education integration in the context of digital transformation ^[6].

2.2. Research on ancient village practice bases

As important carriers of cultural heritage, ancient villages hold unique value in environmental design education. Ma Lanhua and Zeng Zhen (2025) studied the practical teaching of environmental art design in higher vocational education under rural industry planning, proposing strategies for transforming rural resources into educational resources ^[7]. Lian Xiaoyi (2024), from the perspective of rural revitalization, explored teaching reform and innovation strategies in environmental art and design programs ^[8].

In summary, although existing research has produced substantial outcomes, it is predominantly focused on vocational education or single-course reform. Studies addressing the deep coupling mechanism between professional fieldwork courses and ancient village practice bases at the level of application-oriented undergraduate education remain limited. In particular, systematic investigations into long-term mechanisms of industry-education integration, curriculum system reconstruction, and innovation in practical teaching models still require further development. Gao Yong and Wang Zhi (2023) explored studio-based teaching models in university art and design majors, yet their research did not involve the scenario of ancient village practice bases ^[9]. Zhou Li and Xia Jing (2022) discussed workshop-based teaching under industry-education integration in vocational undergraduate programs, which also failed to cover the characteristics of professional fieldwork courses ^[10]. Li Zhi et al. (2021) examined talent training optimization from the perspective of “certificate-curriculum integration”, providing references for applied talent cultivation but lacking discussion on fieldwork practice base construction ^[11].

2.3. Theoretical foundation

This study is grounded in constructivist learning theory, situated cognition theory, and the Outcome-Based Education (OBE) framework. Constructivism emphasizes that learners actively construct knowledge and meaning within authentic contexts, and professional fieldwork provides an effective means of creating such real-world learning environments. Situated cognition theory argues that learning is embedded within specific socio-cultural contexts; ancient villages thus offer students a learning environment rich in historical depth and cultural significance. The OBE framework, in turn, requires backward design of curriculum objectives to ensure that teaching activities are precisely aligned with the intended outcomes of talent cultivation.

3. Current status and problem analysis of the professional fieldwork course

3.1. course status

The Professional Fieldwork course in the Environmental Design program at Guangdong University of

Science and Technology is offered in the sixth semester, with a duration of two weeks and a credit value of 2 credits. The course objectives include understanding the current development status and trends of the environmental design industry, mastering basic methods of field investigation and research, cultivating abilities in spatial analysis, material cognition, and cultural interpretation, as well as enhancing teamwork and communication skills.

Under the traditional teaching model, the course is primarily organized in the form of “faculty-led field trips + student self-directed investigation.” Field sites typically include urban public spaces, commercial districts, and residential communities. Students are required to complete assignments such as field reports, research analyses, and design sketches.

3.2. Key existing problems

Based on a review of teaching practices over the past three years and interviews with both instructors and students, several key issues have been identified:

- (1) Fragmented field content and lack of systematic structure. Traditional field sites are dispersed, making it difficult for students to develop an in-depth understanding of specific spatial typologies. Field investigations are often superficial and fragmented, lacking longitudinal and systematic analytical depth.
- (2) Disconnect between teaching and industry demands. Field investigations tend to emphasize spatial form analysis while paying insufficient attention to material processes, construction techniques, and project management practices, resulting in a gap between learning outcomes and industry-required competencies.
- (3) Underutilization of practice base resources. Although the university has established a cooperative relationship with Nanxisha Ancient Village, the resources of the practice base have not been fully integrated into course instruction, and systematic instructional design and resource development remain insufficient.
- (4) Low student engagement and perceived learning value. Influenced by traditional teaching approaches, some students misunderstand professional fieldwork as a form of “touristic activity.” Due to insufficient task-driven design and process monitoring, students demonstrate weak initiative in independent inquiry, leading to significant disparities in the quality of research outputs and design outcomes.
- (5) Simplified evaluation system. Course assessment primarily relies on fieldwork reports, lacking a comprehensive evaluation of process performance, teamwork, and innovative thinking.

4. Curriculum reform design from the perspective of industry–education integration

4.1. Reform approach

Guided by the OBE (Outcome-Based Education) philosophy and the requirements of industry–education integration, this reform adopts the core concept of “empowering courses through practice bases and revitalizing practice bases through courses,” constructing a tripartite reform framework:

- (1) Goal alignment: Align course objectives with industrial job competency requirements, cultivating application-oriented talents with cultural literacy, practical skills, and innovative thinking.
- (2) Content reconstruction: Transform ancient village resources into a structured teaching system, enabling the deep educational value of cultural heritage to be systematically explored.
- (3) Model innovation: Establish a teaching model characterized by “university–local collaboration, dual-mentor guidance, and project-driven learning,” thereby enhancing instructional effectiveness.

4.2. Construction of the “Base + Course” dual-driven model

4.2.1. Curriculum-oriented development of base resources

Nanxisha Ming and Qing Ancient Village preserves more than 200 architectural entities, including ancestral halls, residential buildings, academies, and ancient wells. The site exhibits a complete spatial layout and a rich typology of traditional architecture **Table 1**.

The project team systematically organizes the resources of the practice base and develops them into curriculum modules following a logic of “spatial typology—cultural theme—teaching module.” These resources most strongly represent the Lingnan architectural characteristics and social spatial networks of Nanxisha Ancient Village.

Table 1. Information on spatial types

Spatial Type	Cultural Theme	Teaching Module	Competency Objectives
Ancestral Hall Architecture	Clan culture, ritual space	Traditional architectural space analysis	Spatial scale perception, interpretation of cultural symbols
Vernacular Residential Buildings	Living culture, domestic space	Forms and construction of traditional dwellings	Architectural typology recognition, material and craftsmanship identification
Village Spatial Pattern	Feng shui philosophy, public space	Analysis of settlement spatial structure	Holistic planning thinking, public space design
Decorative Details	Carving art, ornamental culture	Collection of traditional decorative patterns	Graphic design ability, cultural element extraction
Village Environment	Ecological wisdom, landscape construction	Rural landscape and ecological design	Ecological design awareness, application of vernacular materials

4.2.2. Industry–university–enterprise collaborative education mechanism

Relying on the Higher Education Teaching Quality and Teaching Reform Project of Guangdong Province, this study establishes a tripartite collaboration mechanism among universities, ancient village communities, and enterprises.

4.2.2.1. Co-construction of a dual-mentor teaching team

Experts in heritage conservation, intangible cultural heritage inheritors, traditional architectural craftsmen, and local historical scholars are invited as external mentors. Together with in-university full-time faculty, they form a structured teaching team. External mentors focus on cultural interpretation and technical skill transmission, while internal faculty emphasize theoretical refinement and design translation, thereby achieving complementary strengths.

4.2.2.2. Co-development of teaching resources

Jointly developed instructional materials include Nanxisha Ancient Village Fieldwork Manual, Traditional Architectural Surveying Guide, and Cultural Interpretation of Ancient Villages. A digital resource repository is established, incorporating 3D scanning models, historical visual archives, and oral history records.

4.2.2.3. Co-construction of practical projects

Real-world design projects are introduced, such as the revitalization of public spaces in ancient villages, adaptive renovation of traditional buildings, and cultural exhibition space design. Students work in project-based teams to complete the full process from field investigation to design proposal development.

4.2.3. Four-Stage Teaching Process Design

The two-week fieldwork course is divided into four sequential stages, forming a closed-loop instructional system:

(1) Stage 1: On-campus preparatory phase (Days 1–2).

This stage focuses on constructing a theoretical knowledge framework. Through thematic lectures and training in field investigation methods, students are guided to develop structured fieldwork plans and research outlines, establishing a problem-oriented approach and laying a theoretical foundation for on-site investigation.

(2) Stage 2: Immersive field investigation at the practice base (Days 3–8).

This stage emphasizes primary data collection. Within a collaborative group structure consisting of “one university instructor + one external mentor + multiple students,” activities such as architectural surveying, spatial documentation, oral history interviews, and material sampling are conducted. The outputs include measured drawings, visual documentation, and interview transcripts as primary empirical data.

(3) Stage 3: Multidimensional analysis and seminar (Days 9–10).

This stage focuses on systematic data processing. Teaching shifts from the field site back to the classroom, where standardized drawing refinement, in-depth case analysis, and interactive discussions are conducted. Students transform perceptual understanding into analytical reasoning, producing fieldwork analysis reports and spatial interpretation texts.

(4) Stage 4: Outcome incubation and design transformation (Days 11–14).

This stage emphasizes the practical application of design outcomes. Students are guided to complete the full design workflow from conceptual development to scheme refinement based on prior research findings. The final deliverables include high-quality design documentation, presentation materials, and physical models, thereby achieving the transformation of fieldwork outcomes into design productivity.

4.3. Integration pathways of curriculum ideology and political education

Adhering to the trinity of “knowledge transmission, competency development, and value guidance,” ideological and political education elements are systematically integrated into the entire teaching process. First, cultural confidence is strengthened by interpreting the construction wisdom of traditional architecture, enhancing students’ recognition and pride in excellent Chinese traditional culture. Second, the spirit of craftsmanship is inherited through on-site demonstrations by craftsmen, conveying a professional ethos of precision and excellence. Third, social responsibility is reinforced by confronting the practical contradictions of heritage conservation and rural development, thereby inspiring students’ mission to contribute to rural revitalization. Fourth, ecological civilization awareness is cultivated by analyzing the ecological wisdom embedded in traditional settlements, fostering a green and low-carbon design ethic.

5. Practice implementation and effectiveness analysis

5.1. Implementation overview

During the 2024–2025 academic year, the project team conducted two rounds of teaching reform practice at the Nanxisha Ming and Qing Ancient Village practice base, involving a total of more than 225 students from the 2022 and 2023 cohorts of the Environmental Design program.

5.2. Student outcomes

Following the reform, the quality of student fieldwork outcomes improved significantly. Representative achievements include:

5.2.1. Surveying and documentation outputs

More than 80 sets of architectural surveying drawings of the Nanxisha Ancient Village were completed, along with over 120 architectural archival records. Some of these outputs were adopted by the ancient village management authority for use in conservation planning.

5.2.2. Design-based outcomes

Over 60 design proposals were completed, including ancient village public space revitalization schemes, adaptive reuse designs for traditional buildings, and cultural exhibition space designs.

5.2.3. Research-oriented outputs

Based on field investigation results, students produced more than 20 research papers or investigation reports, among which five were published in provincial academic journals or presented at academic conferences.

5.3. Evaluation of teaching effectiveness

A comprehensive evaluation of the reform outcomes was conducted through questionnaires, interviews, and analysis of student outputs:

5.3.1. Student satisfaction levels increased significantly

According to a questionnaire survey of 225 participating students, the overall course satisfaction rate reached 92.5%. Additionally, 88.3% of students reported that the fieldwork content was “systematic and in-depth,” and 90.8% believed that the course had a “significant positive impact on professional competency development.”

5.3.2. Competency achievement levels improved

Compared with course objectives, students demonstrated measurable improvements across multiple competency dimensions:

- (1) Spatial analysis ability: +35%
- (2) Cultural interpretation ability: +42%
- (3) Mastery of research methods: +38%
- (4) Teamwork ability: +28%
- (5) Design innovation ability: +31%

5.3.3. Feedback from employers

Follow-up surveys of employers hiring graduates who participated in the ancient village fieldwork indicated that students were generally recognized as having strong cultural literacy and practical capabilities, and were able to quickly adapt to project-based research and design tasks.

5.4. Representative case studies

5.4.1. Case 1: Spatial analysis and adaptive reuse design of the Xie Clan Ancestral Hall

The student team conducted high-precision surveying and spatial syntax analysis of the Xie Clan Ancestral Hall, systematically interpreting its ritual spatial sequence and decorative artistic features. Based on this analysis, they proposed a “living museum + community shared living room” renewal strategy, introducing contemporary exhibition and public interaction functions under the premise of strict heritage conservation.

5.4.2. Case 2: Spatial analysis and revitalization design of the Xie Clan Ancestral Hall

A student group carried out detailed measurement and spatial analysis of the Xie Clan Ancestral Hall, examining its architectural form, spatial sequence, decorative art, and cultural connotations. On this basis, they proposed a “living exhibition + community living room” activation strategy, converting part of the ancestral hall into spaces for community cultural activities and visitor experiences, thereby preserving the building while extending its social function.

5.4.3. Case 3: Micro-renewal design of ancient village alley spaces

Through one week of continuous field observation and resident interviews, students documented usage patterns, environmental issues, and community needs within the alley spaces. They proposed a “micro-renewal” strategy, improving spatial quality through low-cost interventions such as pavement upgrading, lighting design, greening, and street furniture installation. The scheme emphasizes the preservation of historical fabric, the use of local materials, and the principle of “repairing the old as it is,” reflecting a conservation-oriented design philosophy.

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