

Research on Pathways to Enhance Teaching Efficacy of Part time Teachers in Enterprises under Industry-Education Integration: A Case Study of Culinary Programs

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Abstract: Employing a mixed-methods approach encompassing quantitative surveys of over 600 students and real-time classroom observations, this study reveals that part time teachers in enterprises achieve a 98% authenticity rate in practical case studies. However, 12% of courses exhibit superficial theoretical integration, and 64% of part time teachers in enterprises rarely provide internship/employment information, highlighting the "strong practice, weak theory" pedagogical contradiction. This paper constructs a three-dimensional integrated framework of "Institution-Curriculum-Evaluation" and proposes optimization strategies to operationalize the development of dual-qualified teachers. The findings offer theoretical and practical significance for deepening industry-education integration in vocational education.

Keywords: Industry-Education Integration; Teaching Efficacy; Vocational Education Reform; Integrated Pathway

1. Introduction

With the revision of the Vocational Education Law of the People's Republic of China (2022 Revision) and advancing policies on industry-education integration, part time teachers in enterprises have gained prominence in vocational education. The culinary industry, vital to people's livelihoods, faces dual challenges of intelligent transformation and traditional cultural preservation. Part time teachers in enterprises, as critical bridges between industry and education, directly impact talent cultivation quality through their teaching efficacy.

2. Research Design and Methodology

2.1 Theoretical Framework

This study anchors on Lave's Situated Learning

Theory and Bandura's Social Cognitive Theory[1], constructing a "Three-Dimensional Pathway" model (Fig. 1):

Institutional Dimension: A "Dual Certification System" enhances instructional design capabilities through systematic training, resonating with the "demonstration-observation-imitation-feedback" cycle in Social Cognitive Theory[2].

Curriculum Dimension: A "Scenario-Based Teaching Paradigm" facilitates cognitive transfer by replicating authentic workplaces, aligning with the core tenet of "legitimate peripheral participation" in Situated Learning Theory.

Evaluation Dimension: "Digital Dynamic Assessment" leverages real-time feedback to boost learners' self-efficacy, achieving dialectical unity between theory and practice.

The model emphasizes synergistic interaction between legitimate peripheral participation (situated learning) and demonstration-imitation-feedback mechanisms (social cognition). Enhancing teaching efficacy hinges on establishing a closed-loop system for cognitive transfer and observational learning across workplaces and classrooms.

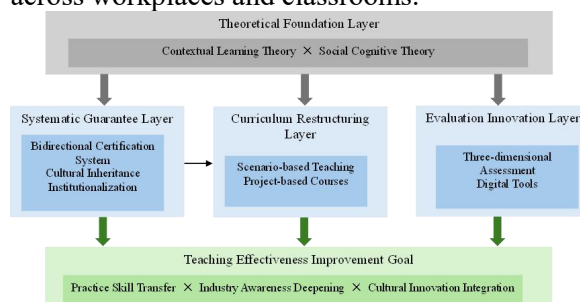


Figure 1. "Three-Dimensional Pathway" Theoretical Model

2.2 Research Methods

A questionnaire survey of 612 culinary students (95.3% valid response rate) covered specialties like Chinese/Western Pastry and Culinary Arts. Kruskal-Wallis tests confirmed sample representativeness ($\chi^2 = 5.32$, $p > 0.05$).

Multivariate ANOVA was performed using SPSS 26.0.

24 class hours of part time teachers in enterprises at Three Gorges Tourism Polytechnic College were observed, supplemented by in-depth interviews with 6 industry experts. Triangulation of observational and survey data ensured reliability.

3. Current Status and Contradictions in Teaching Efficacy

3.1 Teaching Strengths

3.1.1 Practice-oriented approach

Part time teachers in enterprises integrate industry-frontier cases, creating a practice-oriented knowledge domain. Survey data (Fig. 2) show 68% of cases derive entirely from real work scenarios, while 30% are primarily industry-sourced. This authentic project-based teaching enables students to grasp operational workflows, with 55.07% expressing "high satisfaction" with skill acquisition—validating the role of legitimate peripheral participation in vocational training.

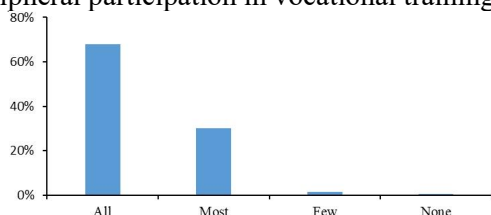


Figure 2. Cases Used by Corporate Instructors Originate from Real Work Scenarios

3.1.2 Industry-aligned curriculum

Courses exhibit "industry sensitivity" amid rapid technological change. Over 50% of students acknowledged the curriculum's effectiveness in mastering cutting-edge techniques (Fig. 3), and nearly 60% affirmed its alignment with industry needs (Fig. 4). This integration manifests industry-education fusion at the curricular level, incorporating emerging knowledge (e.g., smart kitchen operations, digital order management) to synchronize with industry transformation.

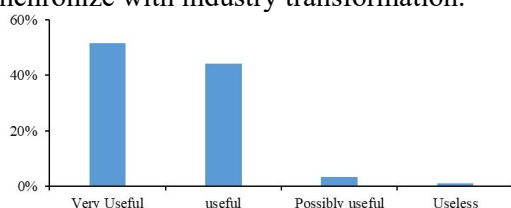


Figure 3. Course Content's Contribution to Mastering Latest Industry Technologies or Trends

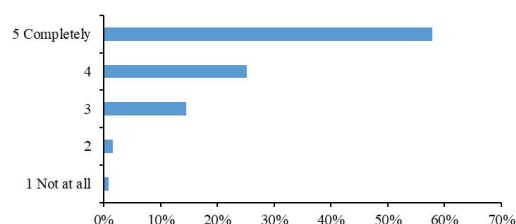


Figure 4. Student Satisfaction with Alignment between Course Content and Industry Demands

3.1.3 High practical utility

Courses emphasize employability, with 59.00% deeming them "highly useful" for future careers (Fig. 5)—surpassing theoretical courses. Part time teachers in enterprises embed implicit knowledge (e.g., workflow standards, competency criteria), enabling pre-graduation professional experience.

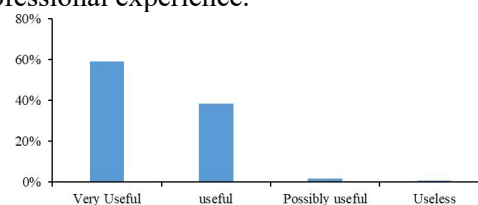


Figure 5. Practicality of Corporate Instructors' Courses for Future Employment

3.1.4 Interactive classroom dynamics

Teaching exhibits interactive constructivist characteristics: 77% reported frequent interactions (Fig. 6), and 68% noted instructor encouragement of Q&A/discussions. This aligns with Social Cognitive Theory's demonstration-imitation-feedback loop, where instructors model operations, students imitate, and instructors adjust strategies based on performance.

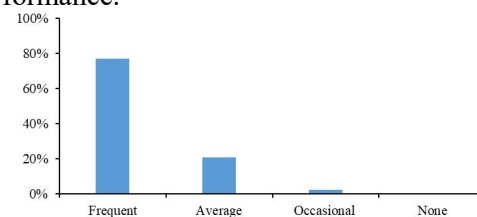


Figure 6. Interaction Frequency in Corporate Instructors' Courses

3.1.5 Professional competence & attitude

Instructors' industry authority is widely recognized: 66.83% praised their expertise (Fig. 7), and 78.10% commended their dedication. This dual identity—industry expert and educator—enables effective translation of practical experience (e.g., pastry techniques, culinary skills) into pedagogy.

3.2 Major Challenges

3.2.1 Theory-practice dissociation

The epistemological-behavioral disjuncture in vocational pedagogy fundamentally exposes inherent contradictions in knowledge application. Quantitative analysis (Fig. 8) reveals that 8.66% of courses exhibited merely superficial theory-practice connections, while 0.82% demonstrated complete disjunction. This deficiency impedes students' deep comprehension of professional skills and severely constrains their problem-solving efficacy and innovative capacity within career trajectories.

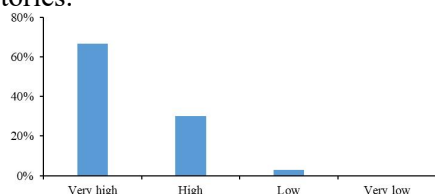


Figure 7. Professional Level of Corporate Instructors

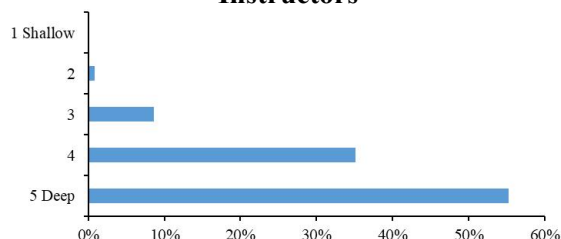


Figure 8. Articulation of Part Time Teachers in Enterprises' Course Content with Theoretical Curricula

3.2.2 Fragmented industry-education collaboration

The current industry-education symbiosis mechanism operates at rudimentary levels, failing to establish a cohesive educational consortium. Empirical data (Fig. 9) indicate only 36.60% of enterprise mentors systematically provide internship/job information, evidencing deficient synergistic engagement. The content of cooperation between enterprises and schools is mostly limited to superficial collaborative matters such as recommending internship positions. In core processes such as curriculum development, training program formulation, and teaching resource co construction, enterprises lack deep participation. The deep participation of enterprises can effectively improve the teaching quality of job internships and enhance students' professional skills[3].

3.2.3 Cultural inheritance imbalance

During teaching activities, enterprise teachers tend to focus on the practical operation of traditional techniques, overemphasizing their instrumental value while neglecting their

symbolic meaning as cultural symbols. For example, some student works show slight innovation in pattern design, but their cultural connotations fall far short of traditional standards. This is particularly evident in the inheritance of intangible cultural heritage projects like Yichang Huamo. When innovating elements such as "fish-shaped patterns," students fail to grasp the folk cultural symbolism, leading to gradual loss of cultural essence during inheritance and innovation.

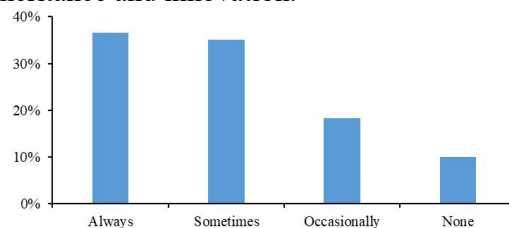


Figure 9. Provision of Internship / Employment Opportunities by Part Time Teachers in Enterprises

4. Three-Dimensional Pathways for Effectiveness Enhancement

4.1 Institutional Level: Building a "Dual Certification + Collaborative Education" System

4.1.1 Dual-track teacher qualification

Implement a "professional qualification + teaching ability" dual certification system. Enterprise teachers must complete 40 class hours of teaching methodology training and pass certification. This system is rooted in the "demonstration-imitation-feedback" learning mechanism of social cognitive theory, promoting the transformation of enterprise teachers from industry practitioners to teaching experts[4][5].

4.1.2 Institutionalized cultural inheritance

Using Yichang Huamo as a practical basis, establish a cultural inheritance mechanism that connects technology and culture in vocational education. Institutional requirements mandate enterprise teachers to systematically integrate three core elements "Cultural traceability, skill analysis and innovative design" into practical teaching. This transforms intangible cultural heritage inheritance from mere technical replication to a process combining cultural understanding and creative capability[6]. Students not only master skills like layered dough techniques but also appreciate the folk cultural psychology and traditional aesthetics behind "fish-shaped patterns," achieving the

integration of vocational skills and cultural connotations ("skill and way integration").

4.2 Curriculum Level: Creating "Scenario-based + Localized" Teaching Models

4.2.1 Innovative dual-teacher division model

Establish a three-dimensional teaching team consisting of school teachers, enterprise mentors, and intangible cultural heritage inheritors to reconstruct vocational education knowledge production[7]: School teachers focus on theoretical frameworks; Enterprise mentors teach technical specifications; Heritage inheritors analyze cultural connotations. In courses like Chinese Pastry Production, students understand theoretical principles (e.g., dough rheology), master practical techniques (e.g., standardized layering), and comprehend cultural meanings of patterns, forming an integrated "knowledge-action-meaning" learning experience that addresses insufficient theoretical connections.

4.2.2 Project-based curriculum design

Transforming enterprise work orders into teaching cases achieves close alignment between vocational curricula and industrial processes[8]. For example, the "Dragon Boat Festival Pastry R&D" project integrates full-process business links—procurement, production, quality control—into teaching, converting fragmented knowledge points into holistic work tasks. Among them, the raw materials used are green food, and the packaging materials are recyclable

materials, cultivating students to become applied talents with sustainable development awareness and health literacy[9]. This design strictly follows the "learning by doing" concept of vocational education, cultivating comprehensive vocational abilities through real work processes.

4.3 Evaluation Level: Establishing a "Three-Dimensional + Digital" Assessment System

4.3.1 Developing an evaluation platform

Build an "Industry-Education Integration Teaching Evaluation Platform" that dynamically tracks teaching effectiveness by integrating classroom interaction data (e.g., group collaboration time, question frequency) and enterprise internship management data. This digital evaluation model overcomes limitations of traditional standardized testing, creating a value-added evaluation system covering "learning process-practice performance-career development"[10]. The platform incorporates social cognitive theory's feedback mechanism, helping students adjust learning strategies.

4.3.2 Diversified assessment indicators

Establish a three-dimensional evaluation framework covering vocational skills, industry cognition, and cultural innovation, forming a "competency-based" vocational education evaluation system that reflects the catering industry's demand for interdisciplinary talents (Table 1). This system replaces the limitations of traditional "knowledge-based" evaluation with quantifiable "industry standards."

Table 1. Multidimensional Assessment Metrics and Digital Tools

Dimension	Weight	Assessment Methods	Data Collection Tools
Vocational Skills	40%	Smart equipment operation Qualified product rate	AI image recognition Equipment operation logs
Industry Cognition	30%	Workplace procedure mastery Internship-to-employment conversion rate	HR system integration (via API) Competency assessment platform
Cultural Innovation	30%	Authenticity scoring of intangible cultural heritage preservation	Expert review panels AI-powered cultural element retrieval

5. Conclusion

Enterprise teachers demonstrate strong practical abilities but relatively weak theoretical knowledge. To address these contradictions, adopt the "institution-curriculum-evaluation" enhancement pathway. Future developments may include: Applying VR virtual enterprise teachers in smart kitchen teaching to improve operational standardization by 15%-20%. Optimizing school-enterprise collaboration through social network analysis. Extending

successful industry-education integration models to tourism and intelligent manufacturing fields. Following unbalanced growth theory, build a "technological innovation-cultural inheritance" complementary ecosystem where enterprise teachers serve as bridges between industry needs and educational supply, driving high-quality vocational education development.

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