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Driving Greater Bay Area Economic Development: A Case Study of UII at Shenzhen Polytechnic University

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1 Introduction

This research has been prepared in the framework of the project titled "*University-industry integration policies and practices in China - potential applications in Hungary*". This research takes Shenzhen Polytechnic (SZPU) as a case study. SZPU maintains its position as the flagship institution in China's vocational education system. Its strategic positioning for serving the economic development of the Greater Bay Area (GBA) confers distinctive theoretical value to UII research and substantial practical implications. This case study specifically examines SZPU's concrete UII practices, and the project employs multi-case analysis across three disciplinary areas critical to regional economic development: 1) Design Studies, focusing specifically on two representative majors—Fashion and Apparel Design and Fashion Product Design; 2) Business Studies, investigating the major of Cross-border E-commerce; 3) Business English, exploring how the Department of Business English developed and maintained UII with Shenzhen Furniture Association (SZFA) to empower the development of GBA's exhibition industry.

By employing a mixed-methods framework that integrates Python-driven data sourcing with qualitative case study analysis—specifically semi-structured interviews, document review, and on-site observations, this study clarifies the structural and operational mechanisms of UII within fashion design and business majors. The empirical evidence identifies a talent-cultivation-centered UII ecosystem at SZPU, supported by several key pillars: institutionalized governance via the Industry – University – Research – Application Committee, "University-Association-Enterprise" model, industry-embedded curricula, and the active engagement of a diverse range of stakeholders. By synthesizing these practices, this research enriches the empirical discourse on UII and provides a practical model for global institutions. Furthermore, it offers Hungarian policymakers an implementation paradigm that balances China's top-down policy coordination with bottom-up institutional innovation.

2 Literature Review

University-industry integration (UII) has become a core global strategy for bridging the gap between talent cultivation and industrial development, with its evolution shaped by policy dynamics, institutional contexts, and technological progress. As a policy-driven undertaking in China, the connotation of UII has been continuously deepened with the adjustment of national economic and education strategies.

2.1 Policy Evolution and International Comparative Research on UII

UII policies have undergone context-specific evolution across nations, reflecting differences in historical backgrounds, economic goals, and institutional arrangements, while sharing the core objective of aligning education with industrial needs. The generation

of China's UII policy discourse is closely linked to national economic transformation, showing a clear stage division and governance logic shift.

In China, the policy evolution of UII is divided into three distinct phases: an early integration period (1950s – 1970s) influenced by Marxist principles and the Soviet model, emphasizing the combination of education and productive labor; a separation phase (late 1970s – mid-2010s) characterized by the restoration of traditional academic autonomy and gradual detachment from industrial practices; and a renewed deep integration phase (mid-2010s onwards) driven by innovation-driven development strategies (Nan, 2019; Ouyang, 2020; Qu & Zhou, 2025).

The policy connotation has evolved from “combining education with productive labor” in the early planned economy era, to "university-enterprise cooperation" in the market economy period, and then to the emphasis on “deep integration”and "community building" in the new era, reflecting a shift in national governance logic from administrative directives to multi-stakeholder collaboration, and from element combination to system integration (Chen & Tong, 2024). A series of key policy documents have laid the foundation for this transition: *the 2017 Several Opinions on Deepening Industry-Education Integration* (State Council, 2017) proposed a systematic framework for institutional innovation, while t*he 2019 National Vocational Education Reform Implementation Plan* (State Council, 2019) strengthened enterprise leadership and dual-system talent cultivation. Subsequent policies such as *the 2021 Opinions on Promoting High-Quality Development of Modern Vocational Education and the 2023 Action Plan for Empowering Industry-Education Integration in Vocational Education* (2023 – 2025) further advanced ecosystem construction and international cooperation (Qu & Zhou, 2025).

The launch of the “Double High Plan” (including the second-phase “New Double High” initiative starting in 2025) has become a key lever to promote in-depth UII, focusing on “high-level school-running capacity and high-quality industry-education integration” to drive vocational colleges toward strategic upgrading (Xu, 2025). A distinctive feature of China’s policy design is the combination of top-down guidance and bottom-up experimentation, exemplified by the identification of national pilot cities for UII, the recognition of "industry-education integration-oriented enterprises" with preferential policies in taxation, land use, and funding, as well as the construction of 34 national municipal industry-education consortia and over 1,100 industry-specific UII communities (Halász & Huang, 2025a).

In 2025, the Ministry of Education released Guidelines for the Development and Implementation of Vocational Education Teachers' Enterprise Practice Projects, which targeted the prominent problems in the practice of vocational college teachers in enterprises, such as insufficient targeted project design, disconnection between content and capacity

improvement needs, and non-unified evaluation standards, and provided systematic guidance for practice bases, vocational colleges and teachers, pushing the institutional construction of UII to a more standardized and professional level.

Internationally, the United States pioneered the conceptualization of university-industry cooperation (UIC) in the early 19th century, breaking free from religious and traditional educational constraints to prepare graduates for emerging fields like engineering and manufacturing, laying the groundwork for global industry-education integration practices (Qu & Zhou, 2025). Germany's dual education system, characterized by close collaboration between vocational schools and enterprises, has served as a reference for many countries, emphasizing work-integrated learning and flexible program management (Yang & Dong, 2024). The European Union (EU) has promoted UIC through the "Knowledge Triangle" framework, integrating research, education, and innovation, with key initiatives including Horizon Europe, Erasmus+ Knowledge Alliances, and the European Institute of Innovation and Technology (EIT) Knowledge and Innovation Communities (KICs) (Huang & Halász, 2024), focusing on fostering grassroots innovation and transnational collaboration.

Comparative studies highlight significant differences in policy approaches: China's model is characterized by strong state leadership, coordinated multi-level governance, and policy-driven institutional innovation (e.g., Modern Industrial Colleges, industry-education integration communities); the EU relies on decentralized project funding, institutional autonomy, and cross-border knowledge sharing; while Germany emphasizes industry-led curriculum design and work-based learning (Zhuang et al., 2025). These differences reflect variations in institutional contexts, economic structures, and cultural backgrounds, yet all aim to address the misalignment between talent cultivation and industrial needs (Kováts, 2020). Recent research has increasingly focused on mutual learning between contexts, such as exploring the adaptability of China's UII experience in Hungary while respecting EU legal constraints and institutional autonomy (Kovács, 2025).

2.2 Theoretical Foundations of UII

With the deepening of UII practice, academic research has gradually moved from phenomenon description to theoretical construction, forming a multidisciplinary research system with institutional theory, boundary theory, value co-creation theory as the core, and also absorbing the theoretical connotation of triple helix theory, boundary crossing theory and complexity theory. These theories provide a comprehensive theoretical explanation for the institutional design, boundary breaking, collaborative value creation and ecological construction of UII.

From the perspective of institutional theory, UII is essentially an institutional design (Kuang & Zhu, 2025). Effective UII cannot rely solely on spontaneous cooperation between universities and enterprises, but requires the construction of a complete

institutional framework containing regulatory elements (e.g., policies and regulations), normative elements (e.g., industry standards and professional qualifications), and cultural-cognitive elements (e.g., shared values and beliefs), which provides a theoretical tool for breaking the "institutional barriers" in UII practice. Boundary theory points out that there are natural boundaries between the education chain and the industry chain in UII, manifested as disconnection between curriculum content and job requirements, ambiguous rights and responsibilities between universities and enterprises, and superficial cooperation (Teng et al., 2017).

To break through these boundaries, it is necessary to rely on the “flexible willingness” of both parties: enterprises are willing to deeply participate in the entire process of curriculum development and talent cultivation, while universities flexibly adjust teaching plans and management models to adapt to dynamic industry needs. Based on Service-Dominant Logic, value co-creation theory redefines UII as a collaborative process where universities and enterprises jointly create value through interaction and resource integration, transcending the traditional “producer-consumer” model of one-way value creation (Qu & Zhou, 2025), and redefining the UII relationship as a dynamic, mutually beneficial symbiotic partnership.

In addition, triple helix theory explains the synergistic relationship between universities, industry, and government in UII, highlighting the government’s role in coordinating resources and formulating policies (Zhao et al., 2024). Boundary crossing theory focuses on how actors in different fields (academia and industry) develop “horizontal expertise” through collaboration, breaking organizational and knowledge barriers (Akkerman & Bruining, 2016). In Western contexts, complexity theory is widely applied to analyze UII ecosystems, viewing integration as an emergent process requiring adaptive governance (Kovács, 2025).In Chinese contexts, embedded epistemic communities and instrumental epistemologies play a key role in shaping UII practices (Halász & Huang, 2025a), and the “four-chain integration” (education, talent, industry, innovation) concept derived from the European “Knowledge Triangle” adapts to China’s institutional characteristics, emphasizing the organic connection between talent cultivation, industrial development, and technological innovation (Huang & Halász, 2024; Xu, 2025). The “New Double High” initiative further embodies the logic of systematic governance, viewing UII as a complex adaptive system that requires synergy among multiple subjects and dynamic adjustment of mechanisms (Xu, 2025).

2.3 Practical Models and Mechanism Innovations of UII

UII has formed diverse practical models and innovative mechanisms tailored to institutional contexts, industrial characteristics, and technological progress, focusing on breaking the boundaries between education and industry, realizing resource sharing, and optimizing talent cultivation. China's UII practices are dominated by deep institutional

collaboration, with the Greater Bay Area (GBA) represented by Shenzhen forming a series of representative models and mechanism innovations, and international UII practices focusing on multi-stakeholder collaboration and project-driven development, showing obvious sectoral differences in both China and the world.

2.3.1 Typical Practical Models of UII

In China, core UII models include Modern Industrial Colleges, industry-education integration communities, municipal industry-education consortia, and characteristic industrial colleges, with the GBA exploring more innovative models such as the "Nine Joint Actions" model and city-level alliance model with Shenzhen as the core. Modern Industrial Colleges, co-founded by universities and enterprises, integrate curriculum design, practical training, and technological R&D, requiring no less than 30% of teaching hours for practical training and equal numbers of full-time and part-time industry instructors (MoE, 2020). Industry-education integration communities focus on specific sectors such as rail transit and smart manufacturing, integrating vocational schools, universities, enterprises, and industry associations to form vertical talent training chains (Li, 2025; MoE, 2023). Municipal industry-education consortia coordinate regional resources to build shared internship bases, digital teaching platforms, and industrial parks, realizing "enrollment = recruitment, enrollment = entry into enterprise, learning = production" (Mao, 2025; Qu & Zhou, 2025).

The "Nine Joint Actions" model pioneered by Shenzhen Polytechnic University (SZPU) takes characteristic industry colleges as carriers, requiring professional clusters to partner with leading enterprises to jointly implement joint governance, curriculum development, faculty building, applied technology research, industry standard setting, qualification certificate development, innovation and entrepreneurship education, modern apprenticeships, and overseas skill development center establishment, representing the advanced form of UII from loose cooperation to systematic integration (Ministry of Education of the People's Republic of China, 2025). The Shenzhen UII Community, a typical city-level alliance model, optimizes regional UII resource allocation through shared digital platforms and collaborative evaluation with the participation of government, universities and leading enterprises, effectively enhancing enterprise engagement and curriculum industry relevance (Xu et al., 2023). Halász & Huang (2025) found through case studies of SZPU, Shenzhen University (SZU) and Shenzhen University of Science and Technology (SUST) that the three universities have formed "enterprise-deeply-embedded vocational integration mode", "academically-led university-enterprise collaboration mode", and "project-driven research-oriented practice mode" respectively, demonstrating the diversity and adaptability of UII practices in multi-level, multi-type institutions in the GBA.

Internationally, typical UII models focus on multi-stakeholder collaboration and project-driven practices. Hungary's revised FIEK 2.0 hubs, inspired by Chinese sectoral

integration experiences, concentrate on strategic fields like green manufacturing and digital health, integrating EU funds, national grants, and industry co-financing to support joint R&D and talent pipelines (Kovács, 2025). The EU's Knowledge and Innovation Communities (KICs), such as the Culture & Creativity KIC, adopt a transnational consortium model, uniting universities, cultural institutions, and creative enterprises to develop interdisciplinary programs and innovation projects (Huang & Halász, 2024). In fashion education, a representative field of creative industries, Hungarian educators often run their own small enterprises, integrating entrepreneurial experiences into teaching (Huang & Halász, 2025).

2.3.2 Mechanism Innovations of UII

Mechanism innovations in China emphasize policy incentives, technological empowerment, and interest sharing, and the GBA has further explored the construction of closed-loop ecosystems and collaborative governance systems under the background of the "New Double High Plan". The identification of "industry-education integration-oriented enterprises" provides preferential policies in taxation and land use (NDRC & MoE, 2019), while AI technologies such as intelligent translation platforms and virtual simulation systems are embedded into teaching to enhance practical training effectiveness (Qu & Zhou, 2025). Universities and enterprises have established a "corporate proposition, university response" collaborative R&D mechanism (Xu, 2025), and some institutions adopt the "five-gold" linkage mechanism (golden majors, golden courses, golden teachers, golden textbooks, golden bases) to systematically optimize talent cultivation elements (Hou, 2025; Li, 2025). Under the "New Double High Plan", SZPU has proposed key mechanism innovation paths such as constructing a closed-loop ecosystem of "four-chain integration", building a "multi-stakeholder value symbiosis" collaborative governance system, innovating the "physical-digital community"spatial carrier, and strengthening the "Five Golds" new infrastructure (Xu, 2025), focusing on the reconstruction of UII cooperation mechanisms and the transformation of practice methods.

Mechanism innovations in Western contexts highlight market-driven coordination and knowledge sharing: Finland's Demola acts as an intermediary to connect universities with enterprises for student internships and faculty development (Qin, 2023), while the EU requires grassroots projects to publicly share experiences and outcomes to promote horizontal learning (Huang & Halász, 2024).

2.3.3 Sectoral Differences of UII

Sectoral differences in UII models and mechanisms are notable worldwide. In technology-intensive industries such as AI and advanced manufacturing, models emphasize the integration of cutting-edge technologies into teaching and joint R&D (e.g., China's Future Technology Colleges) (MoE, 2020). In service-oriented sectors like fashion and cultural industries, the focus is on curriculum alignment with market demands and practical project

cooperation (e.g., EU's FISHSkin project exploring sustainable fashion materials) (Palomino, 2020). Regardless of the model, effective UII mechanisms share core elements: clear division of responsibilities among universities, enterprises, and governments, flexible resource allocation, and dynamic feedback mechanisms to adapt to industrial and technological changes (Zhuang & Shi, 2024). In addition, China's UII practices have extended to international cooperation—Tianjin has built 26 Luban Workshops in 24 countries across Asia, Africa, Europe, and the Americas, promoting Chinese technical standards and vocational education models overseas, and SZPU helps Chinese-funded enterprises "go global" by packaging "technology + standards + talents"(Jing, 2025).

2.4 Implementation Barriers, Impact Evaluation of UII

UII faces inherent universal and context-specific challenges in practice, and scientific impact evaluation frameworks are crucial for optimizing UII practices. Scholars have proposed targeted optimization strategies for the implementation barriers of UII in different countries and regions, and China and European countries such as the EU and Hungary have formed distinct evaluation systems with their own characteristics.

2.4.1 Implementation Barriers and Optimization Paths

In China, the prominent issue of UII implementation is "superficial integration", manifested in unstable teams of dual-qualified teachers, disconnected off-campus internship bases from on-campus teaching, inadequate management systems for school-enterprise cooperation, and the lack of genuine collaborative talent cultivation models (Qu & Zhou, 2025). The root cause lies in enterprises' insufficient tangible benefits from participation, leading to low engagement (Qu & Zhou, 2025). Additionally, regional resource disparities, rigid academic cultures, difficulties in curriculum adaptation to industrial changes, inconsistent interests between public educational goals and corporate profit-seeking motives, vague definition of rights and responsibilities among multiple subjects, and the lack of unified quality evaluation standards further hinder deep integration (Xu, 2025; Halász & Huang, 2025a). A key manifestation is that nearly 60% of vocational colleges have professional curriculum update cycles exceeding 3 years, failing to keep pace with the 1.5-year iteration speed of digital technologies (Halász & Huang, 2025a). *The release of the 2025 Guidelines for the Development and Implementation of Vocational Education Teachers' Enterprise Practice Projects* is also aimed at solving the prominent problems in the cultivation of dual-qualified teachers, such as unclear practice positions and non-unified evaluation standards, which are important barriers to the deep integration of industry and education in vocational education.

Internationally, UII implementation barriers are categorized into orientation barriers and transaction barriers (Bruneel et al., 2010). Orientation barriers stem from conflicting goals and time horizons: industry prioritizes short-term commercial returns, while academia focuses on long-term fundamental research (Tartari et al., 2012). Transaction barriers

include additional costs from misunderstandings and misaligned interests, conflicts over intellectual property rights, and incompatible institutional rules (Bruneel et al., 2010). In Hungary, fragmented policies, limited industry engagement capacity of SMEs, and trust deficits due to EU funding suspensions exacerbate implementation difficulties (Kovács, 2025).

Scholars have proposed targeted optimization strategies for different regions. For China, key measures include strengthening policy incentives for enterprises (e.g., expanding tax preferences for "industry-education integration-oriented enterprises"), establishing stable dual-qualified teacher training mechanisms, building shared digital platforms to connect internship bases with teaching content (Halász & Huang, 2025a), constructing a "four-chain integration" closed-loop ecosystem and a "pluralistic subject value symbiosis" collaborative governance system (Xu, 2025). For European countries, solutions involve simplifying administrative procedures for EU funds, fostering long-term strategic partnerships between universities and enterprises, and establishing intermediary organizations to reduce transaction costs (Kovács, 2025). Cross-context studies emphasize that barrier mitigation must respect institutional autonomy and cultural backgrounds, avoiding mechanical replication of models (Huang & Halász, 2024).

2.4.2 Impact Evaluation of UII

Scientific impact evaluation is crucial for optimizing UII, and China and European countries have formed different evaluation frameworks with their own characteristics. China's evaluation framework focuses on quantitative indicators, including the proportion of dual-qualified teachers, practical teaching hours, graduate employment rates in related industries, and employer satisfaction (Gao & Zhang, 2020). The government also uses third-party evaluations to assess the effectiveness of policy implementation, identifying problems such as formalistic cooperation and unclear organizational forms (Yin et al., 2025). With the advancement of the "New Double High" initiative, evaluation indicators are increasingly inclined to reflect core value outputs, such as the conversion rate of joint R&D achievements, the retention rate of graduates in key enterprise positions, and the incremental input of enterprise resources (Xu, 2025). Some institutions link evaluation results to performance distribution, title evaluation, and enrollment quotas to ensure the sustainability of UII (Fang, 2025).

The EU and Hungary adopt a "conversion rate" evaluation model, tracking the process from inputs (funding, staff) to activities (joint research, curriculum co-design), outputs (new programs, student placements), outcomes (skill improvements, repeated partnerships), and long-term impacts (regional innovation, industrial upgrading) (Kovács, 2025). This framework emphasizes context sensitivity, distinguishing ordered domains (e.g., funding management) suitable for standardization, complex domains (e.g., trust building) requiring

experimentation, and aporetic domains (e.g., academic autonomy vs. state steering) needing deliberation (Kovács, 2025).

Cross-national evaluation studies show that effective UII should balance quantitative and qualitative indicators, combining objective data (e.g., patent numbers) with subjective feedback (e.g., teacher and student perceptions) (Huang & Halász, 2025). For example, in fashion education, evaluation includes not only graduate employability but also the integration of entrepreneurial experiences and industry technological updates into teaching (Huang & Halász, 2025).

2.5 Research Gaps and Contributions of the Report

Existing research on UII provides a comprehensive foundation for understanding the macro policy context, universal implementation models, and core theoretical frameworks, covering international comparisons across China, the EU, Germany, and other countries/regions, and involving multiple sectors such as manufacturing, technology, and creative industries, forming a multi-dimensional research landscape. However, there are still obvious gaps in the existing research that need to be supplemented, mainly reflected in sectoral refinement, research methods and micro-level analysis of teaching elements, and the lack of targeted model construction for specific professions.

First, in terms of sectoral refinement, most studies focus on technology-intensive industries such as advanced manufacturing and new energy, while research on UII in creative industries with strong artistic attributes such as fashion design is relatively scattered (Huang & Halász, 2025), and case studies on UII targeting specific industries such as cross-border e-commerce remain scarce. Although individual studies involve fashion education, they lack in-depth exploration of the unique characteristics of UII in creative industries, such as the integration of artistic creativity and industrial production, the adaptation of curriculum to trend changes, and the protection of intellectual property in collaborative creation. Second, in terms of research methods, existing studies mainly rely on policy document analysis, quantitative evaluation, and cross-sectional case studies, while there is a lack of in-depth empirical research based on interviews with multiple stakeholders in specific professional fields, which can better reveal the micro-operation logic and practical dilemmas of UII. Third, most research stays at the macro model description level, lacking in-depth analysis of micro-teaching elements such as curriculum reconstruction, teacher competency enhancement, and teaching environment transformation in UII practice. Fourth, in terms of outcome presentation, the literature mostly focuses on constructing universal models and frameworks, but lacks targeted model refinement for the characteristics of specific professions. For professions that emphasize both creativity and practicality such as fashion design and cross-border e-commerce, a UII model that balances artistic expression/industrial needs and practical teaching is urgently needed to fill the gap between general theories and professional practices.

To address these critical gaps, this research provides a nuanced empirical analysis of UII by focusing on the fashion design and business-related majors—sectors that call for a shift from passive alignment to a co-creative paradigm. In this framework, the university acts as a proactive co-creator that collaborates with industry partners to build a "community of shared interests" driving integrated development across talent cultivation, collaborative R&D, and the co-construction of industrial projects. Moving beyond macro-level descriptions, our study employs a mixed-methods framework that triangulates qualitative case study analysis—including semi-structured interviews with diverse stakeholders—with Python-driven data sourcing to elucidate the micro-operational logic of UII.

By doing so, this report makes a three-fold contribution. First, it enriches the sectoral discourse by developing a UII model tailored to the creative industries, e-commerce and exhibition industry. Second, it shifts the analytical focus toward micro-teaching elements, highlighting the transformation of curriculum structures and the pivotal role of faculty involvement in industry practice as a means to prevent decoupling. Finally, the research offers a dual-perspective implementation paradigm: providing applied universities with a sustainable, culturally grounded operational model, while offering international policymakers a strategic framework that harmonizes centralized policy orchestration with localized institutional innovation.

3 Case Studies of UII in SZPU

This section investigates four case studies of UII in SZPU, namely the Fashion and Apparel Design major, the Fashion Product Design major, the Cross-border E-commerce major, and the Business English major. Through mixed-methods approaches, including semi-structured interviews, document analysis, observational data, and job market analytics, it explores how UII is structured, implemented, and sustained across different disciplines within a vocational and applied higher education context. Each case highlights distinctive integration models, stakeholder roles, curricular adaptations, and outcomes, offering a comparative perspective on how UII responds to industry-specific demands, regional development strategies, and emerging challenges such as digital transformation and cultural sustainability.

3.1 Case study of UII in Design Studies in SZPU: Based on the Fashion and Apparel Design major and the Fashion Product Design major

University–industry integration (UII) has become a key mechanism for aligning talent cultivation with industrial development, especially in China's vocational education, which stands apart from academic schools and emphasizes skills training. Traditionally, UII is heavily studied in STEM majors, and research into UII in non-STEM fields is relatively lacking. This report focuses on UII practices in the fashion majors in Shenzhen Polytechnic

University (SZPU) located in Shenzhen city, a core city in the Guangdong–Hong Kong–Macao Greater Bay Area and one of China's most important fashion and creative industry hubs.

This section takes the Innovation and Creative Design School of SZPU as a case study, focusing specifically on two representative majors—Fashion and Apparel Design and Fashion Product Design. These programs were selected because they demonstrate a high degree of long-term, systematic integration between education, industry practice, government initiatives, and international cooperation. Through a qualitative research design combining case study analysis, semi-structured interviews, document analysis, and on-site observation, the study aims to explore how university–industry integration is structured, implemented, and sustained in fashion design-related majors, and how it responds to the distinctive characteristics of creative industries.

The findings indicate that SZPU has formed a talent cultivation–centered UII ecosystem supported by multiple interrelated pillars, including institutionalized governance through the Industry–University–Research–Application Committee, industry-embedded curricula, advanced training and practice platforms, active government engagement, and diversified international cooperation. Teachers' deep participation in industry practice emerges as a critical linkage that transforms industrial demands, technological change, and craft inheritance into effective teaching content, helping to avoid superficial integration. By systematically analyzing these practices, this report not only enriches empirical research on UII in the creative industry sector, but also provides practical and theoretical insights for applied universities, fashion education institutions, and policymakers seeking to build sustainable, industry-responsive, and culturally grounded models of university–industry integration.

3.1.1 Methodology

This study adopts a case study method combined with semi-structured in-depth interviews to explore the practice and mechanism of university-industry integration (UII) in fashion design-related majors. By focusing on two characteristic majors in the School of Innovation and Creativity at Shenzhen Polytechnic University (SZPU)—Fashion Product Design and Fashion Design—this research aims to capture the real dynamics of UII from multiple stakeholder perspectives, and further refine a targeted UII model for fashion design majors.

3.1.1.1 Research Case Selection

SZPU was selected as the research case due to its prominent advantages in UII practice: as a benchmark for vocational education in China, the university has long regarded "deep integration of industry and education" as its core school-running feature, with professional settings achieving 100% matching with Shenzhen's key industrial clusters (Xu, 2025). The School of Innovation and Creativity, where the two researched majors are located, has established stable cooperative relationships with a few well-known fashion enterprises,

cultural institutions, and industry associations, forming a relatively mature UII practice system—these characteristics provide sufficient empirical support for in-depth case analysis.

The two selected majors are typical representatives of fashion design-related fields, covering both product-oriented and creative-oriented fashion education, which helps to reflect the diversity of UII practices in the sector:

(1) Fashion and Apparel Design: Emphasizes the integration of creative design, trend research, and industrial production, covering links such as clothing design, pattern making, and brand collaboration.

(2) Fashion Product Design: Focuses on the integration of fashion product functionality, aesthetics, and market demand, involving collaborative development with enterprises in areas such as fashion accessories, lifestyle products, and sustainable fashion.

3.1.1.2 Data Collection Method

3.1.1.2.1 Semi-structured In-depth Interviews

Semi-structured in-depth interviews were adopted as the core data collection method, as this approach allows for both standardized focus on key research issues and flexible exploration of in-depth information based on participants' responses (Huang & Halász, 2025).

1) Interview Participants

To comprehensively capture the multi-dimensional perspectives of UII practice, this study selected interviewees from three core stakeholder groups—school leader, professional leaders, teachers, and students—who are directly involved in or affected by the UII process. The specific information of participants is shown in Table 3.1.

Table 3-1: Basic Information of Research Participants

Stakeholder Group	Number of Participants	School/Major	Key Responsibilities/Background
School Leader	1	School of Innovation and Creative Design	Responsible for overall planning of UII work, formulating school-level cooperation policies
Professional Leaders	2	Fashion and Apparel Design; Fashion Product Design	Responsible for formulating professional talent training plans, coordinating enterprise cooperation projects

Teachers	4	Fashion and Apparel Design (2); Fashion Product Design (2)	Engaged in core courses; have participated in enterprise cooperative teaching projects.
Students	6	Fashion and Apparel Design (3); Fashion Product Design (3)	Have participated in enterprise internships, joint design projects, or industry competitions; familiar with the specific implementation of UII-related courses and practical links.

2) Interview Outline Design

The interview outline was designed around the core research questions of UII in fashion design majors, covering three key dimensions:(1)**UII practice status:** Cooperation forms (e.g., curriculum co-design, joint projects, internships), cooperative enterprise characteristics, and resource input (e.g., enterprise mentors, training bases);(2)**Perceptions and experiences:** Participants' views on the effectiveness of UII (e.g., impact on skill improvement, talent cultivation, and enterprise development), encountered difficulties (e.g., interest coordination, curriculum-industry alignment), and improvement suggestions;(3)**Professional characteristics-related UII needs:** Specific demands for UII in fashion design (e.g., trend iteration adaptation, creative protection, aesthetic value coordination).

3) Interview Implementation

Interviews were conducted offline at SZPU's School of Innovation and Creativity between October and December 2025, with each interview lasting 60-180 minutes. All interviews were audio-recorded with the informed consent of participants, and field notes were taken simultaneously to record non-verbal information such as participants' emotional responses and expression intensity. After each interview, the audio recordings were transcribed into text within 24 hours to ensure the accuracy and completeness of raw data.

Figure 2-1 Authors visited School of Innovation and Creation Design in SZPU

Figure 2-2 Authors interviewed the director of Fashion and Apparel Design Major

Figure 2-3 Authors interviewed the director of Fashion and Apparel Design; Fashion Product Design Major

3.1.1.2.2 Document Analysis

To supplement interview data and obtain systematic background information, this study adopts document analysis as a key supplementary method. The collected documents include three categories: (1) Institutional and professional documents: Talent training plans, curriculum syllabuses, UII cooperation agreements, teaching management regulations, and graduation project evaluation standards of the two majors; (2) Policy and cooperation documents: National and local policies on vocational education and industry-education integration, cooperation project contracts with enterprises, and project summary reports; (3) Public and activity documents: News reports on UII activities (e.g., “Rong·Chuang” Jewelry Design Competition), award records of students and teachers in industry competitions, and public releases of professional construction achievements. Document

analysis focuses on extracting key information such as UII policy support, curriculum design logic, cooperative project operation mechanisms, and practice effectiveness, providing a solid contextual foundation for case analysis.

3.1.1.2.3 Observation

To capture the on-site implementation dynamics of UII practice, non-participant observation was conducted during the research period. The observation objects are closely aligned with the core links of UII in fashion design majors, including: (1) Practical teaching scenes: On-campus training implementation (e.g., jewelry craft production, digital design operation), joint teaching activities by school and enterprise teachers, and skill training sessions in cooperative enterprise workshops; (2) Achievement display and evaluation scenes: Graduation project defense sessions, on-campus and off-campus exhibitions of UII-related student works, and industry competition final presentations; (3) Cooperation management scenes: Professional committee meetings involving enterprise experts, UII project coordination meetings, and internship communication seminars. Observation notes were recorded in real time, focusing on documenting the implementation details of practical teaching, the interaction between students and enterprise mentors, the quality of student works, and the effectiveness of resource integration, which helps to verify and supplement the authenticity of interview and document data.

Figure 2-4 Authors observed the student making her thesis project

3.1.1.3 Data Analysis and Model Construction

This study processes and organizes collected data (interview transcripts, document materials, observation notes) in a pragmatic manner, without adopting complex coding techniques. The specific steps are as follows:(1) Data sorting: Classify and organize all data by major (Fashion Design/Fashion Product Design) and research theme, and mark key content such as typical cases, interviewees' original remarks, and core information from documents;(2) Information extraction: Directly quote representative interview remarks to

reflect the real perceptions of stakeholders, and extract key facts and logical relationships from documents and observation notes to supplement and verify interview content;(3) Model refinement: Based on the sorted and extracted information, combine the professional characteristics of fashion design, and integrate the mutual connections between universities, enterprises, governments, and other stakeholders to refine a targeted UII model for fashion design majors. The model is presented in a schematic diagram form, intuitively reflecting the core elements, interaction paths, and operation logic of UII.

3.1.2 Case study 1: The Fashion and Apparel Design

3.1.2.1 The Innovation and Creative Design School

The two cases selected for this report belong to the Innovation and Creative Design School ("the School") of Shenzhen Polytechnic University. The School is a leading institution dedicated to cultivating high-level, practice-oriented design professionals with strong creativity, aesthetic literacy, and technological competence. Established in 1993, the Innovative and Creative Design school currently sits in the Xiangmihu campus, the heart of Futian District of Shenzhen and one of the most prosperous areas of the city. The school offers six majors—Environmental Art Design, Product Art Design, Fashion and Apparel Design, Visual Communication Design, Jewelry Design and Craft, and Arts and Crafts Design. It is home to over 90 full-time faculty members, including 6 professors and 48 associate professors, and educates approximately 1,920 students.

Figure 3-1: Campus and Main Building of the Innovation and Creative Design School[1]

The School has achieved outstanding results in teaching, research, and creative practice. It has received two National Second Prizes for Teaching Achievement and multiple provincial-level awards in Guangdong. Faculty and students have won more than 50 prestigious international and national design awards, including the IF Design Award, Red

[1] https://www.szpu.edu.cn/info/1010/20922.htm

Dot Award, and China Art Award of the National Art Exhibition. Over 100 design works have been collected by museums and art institutions, and numerous national and provincial research projects have been successfully funded.

The School plays an important role in professional development and social service. It co-leads the construction of the Ministry of Education's Industrial Design Teaching Resource Database for vocational education and has chaired the formulation of national teaching standards for the Jewelry Design and Craft major. The school has undertaken a range of major design projects, including leading the apparel design for the 26th Summer World University Games, the uniform design for the 19th International Botanical Congress, and the banquet porcelain design for the 2018 Shanghai Cooperation Organization Qingdao Summit. It was also commissioned by the National Park Administration to complete the national park logo design and received official commendation for this work.

3.1.2.2 Fashion Industry in Shenzhen

The fashion industry in Shenzhen is a key component of the city's modern industrial system and an important pillar supporting its vision of becoming a globally influential city of innovation, entrepreneurship, and creativity. According to the *Shenzhen Action Plan for Cultivating and Developing the Modern Fashion Industry Cluster (2022–2025)* issued by the Shenzhen Municipal Government, the modern fashion industry is defined as a creativity- and brand-driven urban industry that integrates design, innovation, culture, technology, and art, characterized by high added value, strong market influence, and intensive creative input.

Shenzhen has developed into one of China's most comprehensive and competitive fashion industry bases, with a complete industrial ecosystem, strong brand concentration, and significant clustering effects. In 2021, the total added value of Shenzhen's fashion industry reached RMB 37.7 billion. The city's fashion sector covers a wide range of industries, including apparel, furniture, gold and jewelry, watches and clocks, leather goods, eyewear, cosmetics, and arts and crafts, as well as related service sectors such as industrial design, brand marketing, and exhibitions. Shenzhen was also ranked first on the 2024 Top 10 New Fashion Cities list released by VOGUE Business China[2].

Among these sectors, the apparel industry is particularly prominent. Shenzhen leads the nation in women's fashion in terms of brand quantity, market share, and the number of listed companies. Other sectors also demonstrate strong global competitiveness: Shenzhen accounts for approximately 70% of gold deliveries on the Shanghai Gold Exchange, produces about 40% of the world's watches, and supplies nearly 50% of the global mid-to-

[2] https://ebook.hkcd.com.hk/MB/content/202410/17/content_3266120.html

high-end eyewear market. In addition, Shenzhen has become a major exhibition hub, with an annual exhibition area exceeding 5 million square meters, ranking fourth nationwide.

Despite its strong industrial foundation, Shenzhen's fashion industry faces several structural and developmental challenges. First, the internationalization level and global brand recognition of local fashion brands remain insufficient. Second, original design capabilities and intellectual property protection need further strengthening. Third, the integration of the fashion industry with next-generation information technologies—such as artificial intelligence, industrial internet platforms, and digital manufacturing—has not yet reached sufficient depth.

Talent shortages present another critical constraint. There is a lack of internationally influential designers, fashion technology specialists, brand management professionals, master craftsmen, and high-skilled technicians. In addition, coordination across the industrial chain—covering supply chain integration, live-streaming bases, high-end retail platforms, and premium fashion districts—remains inadequate. Finally, while Shenzhen hosts numerous exhibitions, the internationalization and branding level of its exhibitions are relatively weak, and globally influential exhibition organizers and service providers are still limited.

To address these challenges, the Shenzhen Municipal Government has formulated a comprehensive development plan for the period 2022–2025. The plan sets the goal of increasing the added value of the modern fashion industry to RMB 42 billion by 2025 and fostering a group of leading enterprises with strong market influence. It aims to significantly enhance digital integration, creative design capability, brand competitiveness, and resource aggregation capacity, ultimately forming a high-end supply system represented by "Shenzhen Design", "Shenzhen Brands" and "Shenzhen Products".

3.1.2.3 The Fashion and Apparel Design Major

Against this broader policy and industrial backdrop, the Fashion and Apparel Design major is positioned as a key educational response to Shenzhen's strategic development of a modern fashion industry cluster. The major directly aligns with the municipal government's emphasis on creativity, design capability, digital transformation, brand development, and high-level talent cultivation. By integrating industry standards, digital technologies, real-world projects, and regional fashion resources into its curriculum, the program supports the goals of enhancing original design capacity, strengthening industry–technology integration, and addressing talent shortages identified in the city's development plan. As such, the Fashion and Apparel Design major serves not only as a professional training platform, but also as an important link between Shenzhen's fashion industry strategy and the cultivation of application-oriented, industry-ready design talent.

The Fashion and Apparel Design major was established in 1993 and is one of the earliest key programs developed at SZPU. Over more than three decades of continuous

development, the program has evolved from its original focus on “Fashion Design and Technology” into a high-level, regionally distinctive major with strong influence in the Guangdong–Hong Kong–Macao Greater Bay Area. Oriented toward the cultivation of advanced technical and creative professionals, the program benchmarks international standards and has become an important training base for local fashion designers in Shenzhen.

Over the past 30 years, the Fashion and Apparel Design major has supplied thousands of highly qualified graduates to Shenzhen and the Pearl River Delta region, where alumni have become key contributors to the fashion industry and are widely recognized by employers. Students have achieved outstanding results in high-level competitions, winning numerous national and provincial awards, and their works have been exhibited on international platforms such as exhibitions in Milan and London. Graduate employment rates have remained above 98% for many consecutive years, reflecting the strong alignment between training outcomes and industry demand.

3.1.2.4 UII Practice

Deep integration with industry is a defining feature of the Fashion and Apparel Design program, which has developed a mature, multi-stakeholder UII system linking talent cultivation, curriculum design, industry collaboration, and social service. Through long-term partnerships with national industry organizations, local industry associations, government bodies, and international institutions, the program has established diversified cooperation mechanisms that align education closely with real industrial needs. Its pioneering “dual-subject, integrated, and precision-oriented” talent cultivation model—supported by the Hongyan Program and recognized by national and provincial teaching achievement awards—demonstrates strong educational innovation and wide replicability. Industry-embedded teaching, participation in major national and international design projects, and sustained excellence in graduate outcomes further confirm the program’s professional strength and industry relevance. Building on this foundation, the program’s UII practices are systematically implemented across six interconnected dimensions, encompassing industry-integrated curriculum design, institutionalized governance mechanisms, advanced training platforms, government and public-sector engagement, international cooperation, and extensive participation in urban and industry-led collaborative projects.

3.1.2.5 Talent cultivation strategy and industry-integrated curriculum structure

The Fashion and Apparel Design major adopts an industry-oriented talent cultivation strategy that emphasizes the integration of professional competence, practical skills, and sustainable career development. Guided by national vocational education standards and aligned with the needs of the textile and fashion industry, the program aims to cultivate high-skilled professionals who can engage in apparel design, pattern making, textile and fabric development, brand operation, production management, and visual merchandising.

The cultivation strategy highlights comprehensive development in professional knowledge, technical skills, professional ethics, digital literacy, innovation capability, and lifelong learning awareness, ensuring graduates can adapt to rapid changes in the fashion industry.

At the junior college (associate degree) level, talent cultivation focuses primarily on vocational skill development and hands-on competence. The curriculum maintains a balanced structure in which design courses and craft/technology courses account for an equal proportion (5:5), ensuring that creative thinking and technical execution develop in parallel. Core courses emphasize practical training in pattern making, CAD, and fashion draping, alongside design-oriented courses such as fashion style design, color and pattern design, brand design, knitwear design, and accessory design. In addition, the program retains the make-up and styling course inherited from the former Image Design specialty. This distinctive course broadens students' employment pathways, and some graduates have successfully entered the field of image and styling design based on this skill set. Enterprise projects are systematically embedded into coursework to strengthen students' teamwork, communication, and collaboration abilities, responding to industry demand for talents with comprehensive professional qualities.

Currently, the school is actively applying to upgrade to undergraduate-level education, with the goal of achieving program elevation soon. At the undergraduate level, the talent cultivation strategy is further upgraded by leveraging the university's strengths as a comprehensive institution and responding to the talent demands of Shenzhen and the Guangdong–Hong Kong–Macao Greater Bay Area's creative industries. The program follows an integrated industry–university–research–application development pathway, retaining a strong foundation in skill training while incorporating the requirements of a first-class undergraduate education system. Curriculum design places greater emphasis on interdisciplinary learning, with expanded content in areas such as sustainable development, advanced textile and fabric research, and fashion technology innovation, forming a clear distinction from the junior college curriculum. At the same time, the undergraduate program strengthens students' international outlook and cross-cultural communication competence, preparing graduates for participation in global fashion and creative industries.

Whether at the junior college level or the undergraduate level, the school features a strong alignment with real industry workflows and occupational standards. Talent cultivation is closely connected to specific job roles such as fashion designer, pattern maker, digital apparel modeler, textile designer, apparel marketing specialist, and apparel production manager.

As commented by the professional director, *"at the undergraduate level, the curriculum is designed with a stronger emphasis on interdisciplinary integration and innovation. The program incorporates cross-disciplinary content and aligns fashion innovation systems with the talent needs of Shenzhen and the Greater Bay Area's creative industries, informed by industry research. While distinct from traditional academic undergraduate programs,*

the vocational undergraduate track is planned around an integrated "industry–university–research–application" framework, with a clear focus on applied learning and the distinctive characteristics of vocational education."

Industry-recognized vocational skill certificates—such as Fashion Pattern Maker, Color Styling Specialist, Fashion Display Designer, and Make-up Styling Professional—are embedded into the curriculum through a "course–certificate integration" approach, enabling students to acquire both academic credits and professional qualifications during their studies.

As the professional director said, *"at the vocational level, the curriculum is designed with a strong emphasis on practical training and job-oriented skills. The program clearly differentiates between vocational and undergraduate pathways, with the vocational track focusing primarily on hands-on competence. Courses are structured with an equal balance between design and technical/practical modules, ensuring that students spend substantial time on pattern making, CAD, draping, and other manual and applied skills that are essential for professional practice in the industry."*

The curriculum structure is systematically designed to support this strategy and consists of three interrelated components: general education courses, professional education courses, and practice-oriented teaching modules. Professional education courses form the core of industry integration and are further divided into foundational courses, core courses, and extension courses. Foundational courses, such as *Fashion Style Design*, *Fashion Structure and Technology Fundamentals*, *AI Design Fundamentals*, and *Visual Representation Basics*, establish essential design thinking, technical foundations, and digital competencies required by the industry. These courses introduce students to industry-standard tools, materials, and design methods at an early stage.

Table 3-2: Professional education courses

No.	Course Code	Course Name	Credit	Credit Hours	Term
1	0702951204	Visual Representation Basics	4	64	1
2	0702821235	Fundamentals of Spatial Materials	3.5	56	1
3	0702991203	AI Design Fundamentals	3	48	2
4	0702911204	Fashion Style Design	4	64	2
5	0702371255	Fashion Structure and Technology Fundamentals	5.5	88	2
6	0702561203	Fashion Design Presentation Techniques	3	48	2

Core professional courses are directly mapped to key industry tasks and production processes. Courses such as *Women's Garment Structure and Production Technology,*

Fashion Draping, Fashion CAD Practice, Suit Pattern and Craft Practice, and Brand Ready-to-Wear Design are organized around typical workplace tasks, including design analysis, pattern development, sample production, cost control, and brand planning. Teaching content emphasizes real design briefs, production orders, and enterprise cases, enabling students to experience the complete workflow from design concept to finished garment. Long-term, full-time workplace internships and the graduation design further strengthen students' ability to apply professional knowledge in real production and market contexts.

Table 3-3: Core professional courses

No.	Course Code	Course Name	Credit	Credit Hours	Term
1	0702401206	Women's Garment Structure and Production Technology	6	96	3
2	0702431203	Fashion Materials Science	3	48	3
3	0702461204	Fashion Draping (full week)	4	96	3
4	0701171202	Fashion CAD Practice	2	32	4
5	0702411206	Suit Pattern and Craft Practice	6	96	4
6	0702901204	Brand Ready-to-Wear Design	4	64	4
7	2800011212	Internship (full week)	12	576	5 to 6
8	2800011204	Graduation project (full week)	4	-	6

Professional extension courses expand students' industry adaptability and specialization pathways. Courses such as *Fashion Color and Pattern Design*, *Textile Design*, *Knitwear Design*, *Make-up and Styling Design*, and *Fashion History* respond to diversified industry needs and emerging trends, supporting students' personalized development and cross-disciplinary competence. These courses often incorporate project-based learning, enterprise collaboration, and practical training aligned with current fashion market demands.

Table 3-4: Professional extension courses

No.	Course Code	Course Name	Credit	Credit Hours	Term
1	0702941204	Fashion Color and Pattern Design	4	64	3
2	0702451225	Make-up and Styling Design	2.5	40	3
3	0702481203	CAID (2 dimension)	3	48	4
4	0700191203	Fashion History	3	48	4

No.	Course Code	Course Name	Credit	Credit Hours	Term
5	0702971204	Fashion Creative Training（full week）	4	96	5
6	0702581203	Textile Design	3	48	5
7	0702071203	Knitwear Design	3	48	5

Practice-based teaching is a central pillar of the curriculum system. More than two-thirds of total teaching hours are devoted to practical learning, including on-campus training, enterprise-based internships, project practice, and graduation design. Training is conducted in industry-simulated environments and jointly built production-oriented training bases, ensuring close alignment with actual enterprise standards, equipment, and management processes. Enterprise experts participate in curriculum guidance, practical instruction, and assessment, forming a collaborative mechanism that integrates teaching, production, research, and application.

Overall, the talent cultivation strategy and curriculum structure of the Fashion and Apparel Design major demonstrate a high level of integration with industry practice. By embedding occupational standards, real projects, digital technologies, and enterprise participation into the curriculum, the program effectively bridges education and industry, enhances students' professional competence, and supports the sustainable development of high-skilled fashion design talent.

3.1.2.6 Industry–University–Research–Application Committee（产学研用委员会）

Industry collaboration is a core pillar of the Fashion and Apparel Design program, and its depth and sustainability are ensured through the establishment of the Industry–University–Research–Application Committee. This committee functions as a long-term governance and consultation mechanism that enables enterprises to participate directly and continuously in talent cultivation, curriculum development, teaching implementation, and employment linkage.

Enterprise Participation in Talent Cultivation

The Industry–University–Research–Application Committee plays a central role in the formulation and ongoing revision of the talent cultivation scheme. The committee is composed of seven senior industry experts, including the Vice President and Design Director of Ellassay Group, the President of the Shenzhen Garment Industry Association, and design directors or brand leaders from leading apparel enterprises. Through regular meetings and structured consultations, committee members provide direct input on industry trends, skill requirements, and talent standards, ensuring that the curriculum remains aligned with current and emerging professional practices.

To address faculty capacity constraints and strengthen alignment with industry practice, the program actively promotes school–enterprise co-developed courses. Senior industry

professionals are invited to teach core and specialized courses, including nationally recognized master pattern makers, nationally awarded fashion designers, and Shenzhen high-level industry talents. These enterprise instructors bring cutting-edge technologies, real business cases, and current market logic into the classroom. In some cases, students are invited to visit instructors' companies, and outstanding student work has been adopted by enterprises for practical use. At one stage, the school signed a formal cooperation agreement with partner enterprises under which students were required to design a specified number of garment styles for enterprise use each semester; this collaboration was sustained for three consecutive years, effectively linking coursework with real market output.

According to the professional director, students enjoy such classes taught by industry experts to a great extent. *"Due to shortage of faculty, several courses are taught by leading industry experts, including a nationally recognized top ten pattern maker. These practitioners deliver hands-on, practice-oriented classes, and student feedback has been extremely positive—they would bring flowers to the instructor for every class."*

Integration of Real-World Projects into Teaching

Authentic industry and social projects are systematically embedded into course teaching as an essential instructional strategy. One representative initiative is the Intangible Cultural Heritage (ICH) embroidery project conducted in collaboration with a children's foundation. The project involved embroidery elements from ten ethnic groups and was jointly implemented by five institutions, including Shenzhen Technology University, Guangzhou Academy of Fine Arts, and Guangdong Polytechnic of Light Industry. Each institution was responsible for two ethnic embroidery themes, and students completed garment designs as part of their coursework. Selected designs received a production subsidy of RMB 3,000 per set and were showcased in a runway presentation in December, allowing students to experience the full process from cultural research to public exhibition.

The program has also carried out museum-based design projects, such as collaboration with the Shenzhen Museum to integrate Indian Moorish patterns into textile design courses through pattern restoration and reinterpretation. In addition, multiple horizontal enterprise cooperation projects have been incorporated into teaching, including a volunteer apparel design project for Chow Tai Fook, in which student works were selected and compensated, and the socially impactful "Yuncheng Tree Dressing" project, where students designed and produced wearable decorative installations for urban trees, attracting public attention.

For projects that cannot be fully integrated into existing courses due to time constraints, the program organizes enterprise-commissioned design tasks in the form of short-term team projects. Examples include urgent design assignments such as the Shenzhen Airlines

uniform design project associated with the Kunming Award, allowing students to respond to real enterprise briefs under professional time pressure.

Distinctive Cooperation Models

The program has also developed distinctive multi-party cooperation models under government and industry guidance. One example is the "3+2" extended study pathway, jointly implemented with Bao'an Vocational School and the apparel brand Kaltendin. Under this model, students complete three years of study at the vocational school and two years at the university, with a mandatory six-month to one-year enterprise internship at Kaltendin. This cooperation model—mandated by the provincial education authority—requires coordinated participation from the school, the vocational institution, and the enterprise throughout the talent cultivation process. In response to industry digital transformation, the program actively cooperates with technology enterprises to enhance students' digital fashion competencies. Resources from Shenzhen-based Rock AR are introduced into courses, with enterprise professionals delivering 4–8-hour teaching modules on AR-based fashion design, virtual scene substitution, and digital humans. In addition, collaboration with Style3D has enabled a one-week intensive 3D modeling training program for students in the Hong Kong cooperation cohort, supporting the completion of graduation designs presented in the form of 3D virtual fashion shows.

Employment Linkage and Career Outcomes

Industry cooperation has also translated into effective employment pathways. Partner enterprises involved in teaching and project collaboration often directly identify and recruit outstanding students. Enterprise instructors play an active role in talent scouting. The program has maintained a consistently high employment rate, reaching 100% in 2025, with approximately 10–20% of graduates securing employment through direct school–enterprise interaction.

As presented by the professional director, *"Classes taught by industry experts also create direct employment pathways for students, by offering opportunity for a two-way selection process. External practitioners who teach in the program can identify and recruit suitable students, offering them professional opportunities, while students gain direct access to potential employers."*

Graduates primarily enter independent designer brands and small- to medium-sized apparel enterprises, while others pursue diversified pathways such as live-streaming e-commerce or further education. Given Shenzhen's strong position in the women's apparel market, most graduates engage in women's fashion design–related roles. Entry-level salaries typically start at around RMB 5,000 per month, with some graduates reaching five-figure monthly incomes shortly after employment, reflecting strong market recognition of the program's training quality.

Through the structured operation of the Industry–University–Research–Application Committee and diversified cooperation mechanisms, the Fashion and Apparel Design program has established a stable, industry-embedded education model that effectively bridges education, production, innovation, and employment, ensuring sustained relevance and competitiveness in Shenzhen's dynamic fashion industry ecosystem.

3.1.2.7 Training Centers

The program is also supported by advanced teaching and training facilities. It has established an integrated Fashion Virtual Reality and Intelligent Manufacturing Training Center, along with specialized laboratories for garment structure design, CAD and digital printing, and advanced sewing technologies. Core facilities include an intelligent hanging assembly-line training room, which simulates the full apparel production workflow and allows students to experience process circulation and industrial operations. The training center is further equipped with 3D modeling systems and fabric research and development equipment, supporting digital design, virtual simulation, and material experimentation. In 2025, the case of the Apparel VR and Smart Manufacturing Training Center was included in *Digital Transformation of Training in TVET: 100 Scenarios* published by the UNESCO Chair on Digitalization in TVET, further demonstrating the program's leadership in innovative, technology-enabled fashion education.

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Shenzhen Polytechnic University
China

CERTIFICATE OF INCLUSION

收 录 证 明

兹证明，深圳职业技术大学杨秋华、曹宇培、曾诗楠、李佳妮老师开发的职业教育数字化转型场景实例《服装虚拟现实与智能制造实训中心》被成功收录于联合国教科文组织职业技术教育数字化教席出版物《职业教育实训数字化转型场景百选》中。该案例将通过教席与联合国教科文组织国际职教网络，面向全球超过150个国家的230多个教科文职教联系中心进行推广。

This is to certify that the TVET digital transformation scenario titled **"Apparel VR and Smart Manufacturing Training Centre"** developed by **YANG Qiuhua, CAO Yupei, ZENG Shinan, and LI Jiani** from Shenzhen Polytechnic University has been successfully included in the publication ***Digital Transformation of Training in TVET: 100 Scenarios*** by the UNESCO Chair on Digitalization in TVET. This scenario will be promoted through the Chair Network and the UNEVOC Network to over 230 UNEVOC Centres situated in more than 150 UNESCO Member States.

YANG Congkun
Coordinator, UNESCO Chair on Digitalization in TVET,
Shenzhen Polytechnic University
June 2025

Figure 3-2: The UNESCO certificate of inclusion of the TVET digital transformation scenario

Figure 3-3: The apparel VR and smart manufacturing training center

In addition to core laboratories, the program has developed a range of specialized functional training rooms, including plant dyeing studios and pleating workshops for traditional craft practice, a dedicated make-up studio that supports the retained styling and make-up courses, and a fabric exhibition room displaying diverse fibers and textile samples. These facilities collectively support course-based practical training, enterprise-sponsored project production, and preparation for professional skills competitions. During provincial-level skills competition training, students work in teams of two within the training rooms, with clearly defined roles in design development and CAD pattern making, reinforcing collaborative practice and industry-oriented skill development. With a total training area exceeding 4,500 square meters and state-of-the-art equipment, these facilities rank among the leading teaching infrastructures nationwide.

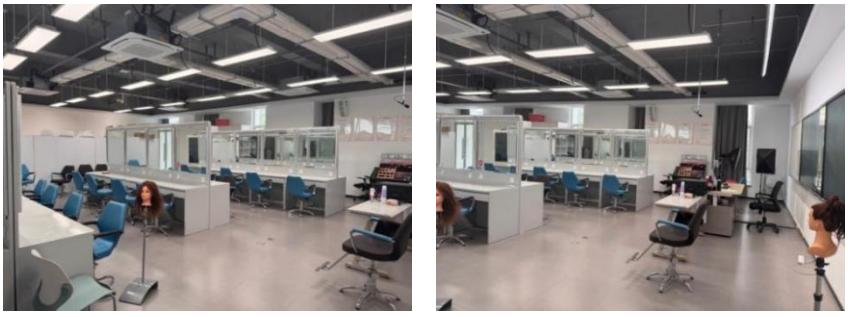

Figure 3-4: Makeup styling training room

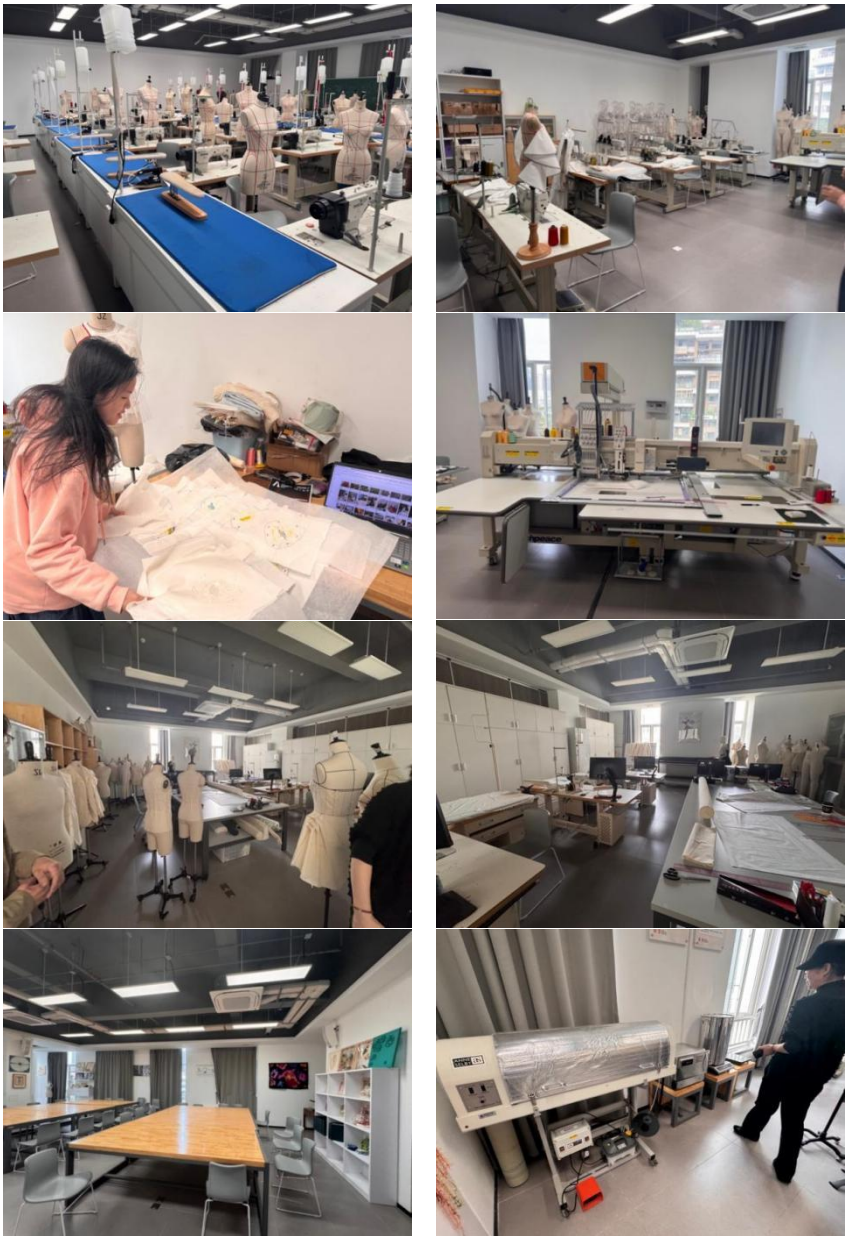

Figure 3-5: Various functional training and exhibition rooms

3.1.2.8 Engagement with Government and Public-Sector Initiatives

Engagement with government authorities forms an important pillar of the Fashion and Apparel Design program's strategy for advancing industry–education integration and serving regional development goals. Through active participation in government-led initiatives, district-level cooperation agreements, and policy consultation processes, the program aligns talent cultivation with Shenzhen's fashion industry planning and regional industrial ecosystems.

A representative initiative is the Dalang Industry School, an institutional experiment exploring government–industry–university collaboration at the regional level. In 2021, the university signed a cooperation agreement with Longhua District to jointly establish the Dalang Fashion Industry School and formally launched the initiative. The original vision was to create a shared platform serving both national and international student recruitment, jointly developing talent cultivation schemes, curriculum frameworks, and practice systems in close connection with the comprehensive fashion industry ecosystem of Dalang Fashion Town. The plan included the long-term goal of establishing a physical campus within the Fashion Town and positioning the school as a model for deep integration between vocational education and regional industrial development. Due to changes in district leadership, however, the initiative was not sustained as an independent institution.

Figure 3-6: Dalang Fashion Town

Despite this, key components of the Dalang Industry School were implemented through government-coordinated, enterprise-based internships, which became a central mechanism for embedding authentic industrial experience into the curriculum. At one stage, the Longhua District government coordinated enterprise placements and accommodation support, enabling more than 100 students from the same cohort to participate in a full-time, two-month internship across multiple apparel enterprises in Dalang Fashion Town. Students were distributed among different companies and engaged directly in production, design, and operational processes. This large-scale, cohort-based internship corresponded closely with curriculum modules such as production management, garment technology, and workplace practice, allowing students to experience complete industrial workflows as part of their formal education.

While the internship model was later discontinued due to practical challenges—including Dalang's remote location, student feedback on transportation and living conditions, and isolated enterprise-related disputes—the experience provided valuable insights for curriculum refinement and risk management in large-scale government–industry cooperation. The core hypothesis of the Dalang Industry School—namely, embedding real industrial scenarios into teaching—has since been retained and transformed into more

flexible formats, such as intensive workplace internships, enterprise-driven project courses, and the systematic integration of real production tasks into classroom teaching.

A second exemplary initiative is with the Futian District government[3]. On November 13, 2024, SZPU and the Futian District People's Government signed a strategic cooperation framework agreement to launch in-depth collaboration on exploring new models for high-quality, culture-driven industrial development. Under this framework, the government (at municipal and district levels) provides policy guidance, strategic planning, and an enabling innovation ecosystem, actively promoting industry–education integration as a driver of high-quality development in the Greater Bay Area. The fashion and creative industries supply real market demand, innovation directions, and application scenarios that shape talent needs and industrial upgrading. The university aligns program development and creative design education with industry needs, focusing on applied, innovation-oriented training. Through strategic cooperation agreements and joint initiatives, the three parties form a collaborative mechanism that integrates policy support, industrial resources, and education, jointly advancing creative talent development and industry upgrading.

In addition to such overarching agreements, more specific attempts of collaboration with industry associations includes the "Hongyan Program" organized by the Shenzhen Garment Industry Association, through which students receive pre-employment training and serve as volunteers for Shenzhen Fashion Week. This cooperation model enables the association, industry, and the university to achieve mutual benefit by linking talent training with major industry events.

The program also contributes to regional fashion industry policy development. Faculty members have participated in consultations for Futian District's 14th Five-Year Plan for the Fashion Industry, offering proposals focused on deepening industry–education integration, strengthening innovation ecosystems, and supporting Futian's ambition to build a globally influential fashion landmark. The concentration of leading apparel enterprises and design headquarters—such as Winner, Ellassay, and Yinger—in the Chegongmiao area further provides geographic and strategic advantages for sustained school–enterprise cooperation.

Through these multi-level engagements with government and public-sector stakeholders, the Fashion and Apparel Design program not only responds to policy priorities but also actively contributes professional expertise to regional fashion industry development, reinforcing its role as an applied, service-oriented academic program within Shenzhen's innovation-driven urban context.

[3] https://www.szpu.edu.cn/info/1092/21332.htm

3.1.2.9 International Engagement

International cooperation constitutes an important extension of the Fashion and Apparel Design curriculum and plays a key role in cultivating students' global perspectives and cross-cultural design competence. The program has established a multi-layered international and regional cooperation framework, centered on Shenzhen–Hong Kong collaboration and expanded through partnerships with overseas institutions and international fashion organizations. These initiatives are not treated as extracurricular activities; rather, they are systematically embedded into curriculum design, teaching organization, and graduation requirements, ensuring that international engagement directly enhances learning outcomes.

A representative initiative is the Shenzhen–Hong Kong Cooperation Program jointly developed with the Hong Kong Vocational Training Council (VTC). Initial contact began in 2018, and a formal cooperation agreement was signed in 2021. Due to administrative constraints related to the national student registration system, the first cohort was admitted in the most recent academic year. The program adopts a segmented cross-border teaching model, combining dual certification and shared teaching resources. Students follow Hong Kong's two-year full-time academic structure (five semesters), studying in Hong Kong during the first, fourth, and fifth semesters, and completing the second and third semesters at the home institution. During the Shenzhen-based stage, students are required to complete nine professional courses within four months, reflecting a highly intensive, project-oriented learning model. Upon graduation, students receive both the Higher Diploma in Fashion Design from the Hong Kong Vocational Training Council and the university's graduation certificate. The curriculum framework and assessment standards developed for this program have also informed broader curriculum reform within the major.

In terms of teaching characteristics, the professional course content for Hong Kong students largely aligns with that of the home institution, while differences in learning backgrounds are addressed through interactive and practice-based teaching methods. Hong Kong students, although generally having a weaker technical foundation, demonstrate strong classroom engagement and creativity. They are exempt from mainland policy-oriented courses such as "Situation and Policy," and instruction is primarily conducted in Mandarin, further strengthening cross-cultural communication and adaptability within the classroom environment.

Beyond joint teaching programs, the school actively integrates international exhibitions and fashion shows into curriculum delivery. The program has co-hosted large-scale fashion shows with institutions including The Hong Kong Polytechnic University, Hong Kong Design Institute, Hong Kong Fashion Farm Foundation, and Shandong University of Art & Design, showcasing more than 100 garments. In recent years, smaller-scale collaborative fashion shows with vocational institutions have focused on presenting students' graduation design collections, while participation in promotional runway events held in historic urban

spaces such as Nantou Ancient City has further connected student work with international and regional audiences. These exhibitions are closely linked to graduation design courses and series garment design modules, allowing curriculum outcomes to be evaluated through public, professional platforms.

At the level of international program development, the school is actively engaged in negotiations with the Milan headquarters of Istituto Marangoni regarding potential joint programs in Fashion and Apparel Design, Fashion Product Design, and Industrial Design. Currently, the cooperation is in the stage of exchanging talent cultivation schemes, with on-site discussions planned. Upon successful upgrading to undergraduate-level education, the program intends to launch corresponding undergraduate collaborations, providing students with opportunities for overseas internships, international project participation, and employment recommendations.

In addition, the program maintains clear international progression pathways by recommending outstanding graduates to pursue undergraduate or postgraduate studies at the Technological and Higher Education Institute of Hong Kong, a vocationally oriented university with a distinct educational positioning from research-intensive institutions such as The Hong Kong Polytechnic University. Through these diversified international and regional engagement mechanisms, the Fashion and Apparel Design program effectively integrates global resources into curriculum design and talent cultivation, supporting students' long-term academic and professional development in an increasingly internationalized fashion industry.

3.1.2.10 Urban Activities and Collaborative Projects

Leveraging Shenzhen's position as a design capital and fashion hub, the Fashion and Apparel Design program has systematically incorporated urban-level activities and social collaboration projects into its curriculum framework, forming a teaching model that connects the classroom, the city, and the industry.

Faculty and students participate annually in major urban and industry events, including the China (Shenzhen) International Cultural Industries Fair, Shenzhen Fashion Week, Shenzhen Original Fashion Week, the Greater Bay Area Fashion Integration Exhibition, the China Fashion Design Works Exhibition, and the International Fashion Illustration Invitational Exhibition. Participation in these events is closely tied to course assignments and graduation projects, with student works selected through internal academic evaluation processes. In this way, curriculum outcomes are transformed into public-facing design, extending assessment beyond the classroom to industry and societal contexts.

A variety of collaborative projects with cultural institutions, enterprises, and public organizations have also been embedded directly into coursework. These include intangible cultural heritage embroidery projects integrated into design courses, museum-based textile and pattern restoration projects developed with the Shenzhen Museum, and enterprise-

sponsored design assignments such as volunteer apparel for Chow Tai Fook and public art projects like the "Yuncheng Tree Dressing" initiative. In many cases, student designs were adopted by partners, and students received remuneration, reinforcing the professional relevance of curriculum tasks.

Furthermore, the program actively engages with industry associations and municipal initiatives. Through participation in the Shenzhen Garment Association's "Hongyan Program," students receive pre-employment training and serve as volunteers at Shenzhen Fashion Week, while the faculty contribute to district-level fashion industry planning initiatives such as Futian's "14th Five-Year Plan." These activities not only enrich teaching content but also ensure that curriculum design remains closely aligned with evolving urban and industry development strategies.

Taken together, the Fashion and Apparel Design major has developed a systematic and multi-dimensional model of university–industry integration that is characterized by institutionalized governance, curriculum-level embedding, and outcome-oriented collaboration. Through the Industry–University–Research–Application Committee, enterprises are deeply involved in talent cultivation standards, course delivery, project design, and employment linkage. Supported by advanced training centers, government-coordinated initiatives, international cooperation, and extensive engagement with urban cultural and industry platforms, the program effectively integrates education, production, innovation, and application. Rather than relying on isolated partnerships, the major has formed a sustainable ecosystem of collaboration in which industry participation is normalized within teaching and learning processes, enabling students to acquire professional competencies, industry awareness, and adaptive capacity aligned with the evolving needs of Shenzhen's fashion industry and the broader global fashion system.

3.1.3 Case 2: Fashion Product Design Major

3.1.3.1 Fashion-Related Industry in Shenzhen

As a core city in the Guangdong-Hong Kong-Macao Greater Bay Area, Shenzhen boasts a comprehensive and mature fashion-related industrial ecosystem, with traditional advantageous industries and emerging sectors complementing each other. The city's fashion product industry covers multiple categories such as jewelry, eyewear, arts and crafts, and high-end accessories, forming distinctive industrial clusters—Longgang District's eyewear industry, Panyu's jewelry manufacturing base, and cultural and creative craft sectors represented by Sigaoda Ceramics have laid a solid industrial foundation for the development of the Fashion Product Design major.

Shenzhen occupies an important position in the global fashion product supply chain, with key sectors such as jewelry and eyewear having strong industrial agglomeration effects. However, the industry also faces transformation pressures: traditional offline sales models have been impacted by digitalization, original design capabilities and intellectual property

protection need to be strengthened, and there is an urgent demand for interdisciplinary talents integrating design, technology, and marketing.

In response to these challenges, the Shenzhen Municipal Government has incorporated fashion-related industries into the "20+8" industrial cluster development plan, emphasizing the integration of cultural creativity, digital technology, and industrial manufacturing. Policies such as supporting industrial transformation, encouraging original design, and promoting e-commerce development have created a favorable policy environment for the deep integration of the Fashion Product Design major with industry. Against this backdrop, the major closely aligns with regional industrial needs, focusing on cultivating application-oriented talents who can adapt to industrial transformation and upgrade, and has become an important talent support platform for Shenzhen's fashion product industry.

3.1.3.2 Fashion Product Design Major

The Fashion Product Design major (professional code: 350112) is a vocational undergraduate program with a basic study period of four years, awarding a Bachelor of Arts degree. It evolved from the traditional Arts and Crafts major, inheriting a solid foundation in craft techniques while keeping pace with industrial development to expand its connotation and extension. Officially approved as a vocational undergraduate major in the third batch of applications, it is currently advancing the application for the fourth batch of undergraduate programs, filling the gap in specialized talent cultivation for Shenzhen's fashion product industry and forming a complementary development pattern with the Fashion and Apparel Design major—while the latter focuses on wearable soft fashion, the former covers hard fashion categories such as jewelry, eyewear, arts and crafts, and high-end accessories, forming a comprehensive fashion design talent cultivation system.

The major's core positioning is to "base on Shenzhen's industrial foundation and serve the industrial transformation and upgrading", aiming to cultivate high-quality technical and skilled talents who can engage in fashion product design, intelligent wearable product development, brand digital communication, fashion exhibition planning, and process technology R&D and management. Graduates are required to have solid theoretical foundations in design aesthetics, digital innovative design, and brand management, as well as dual skills in digital design tool application and traditional craft practice, with humanistic literacy, scientific literacy, digital literacy, and international vision.

As the professional director mentioned in the interview: "*When we applied for the major, we conducted a lot of research at home and abroad, including courses from nearly 30 well-known schools in Europe, the United States, and Canada. Their professional names and curriculum settings are diverse, and there is no exact corresponding major abroad. Finally, we determined the name and curriculum framework in combination with China's industrial and educational status.*"

Over the years, the major has achieved remarkable results in teaching and practice: faculty and students have won awards in national and provincial design competitions, and works have been displayed in domestic and international exhibitions. The major has established stable cooperative relationships with core enterprises in Shenzhen's fashion product industry, and its graduates are widely recognized by employers—many have become backbones in jewelry design, craft innovation, and e-commerce operation fields, with a consistently high employment rate. The major enrolled 29 students for the first time in 2024, with the student source mainly from Shenzhen; local students' growth environment and aesthetic vision are more in line with the needs of the fashion industry.

3.1.3.3 UII Practices

3.1.3.3.1 Industry-University-Research Integration through Industrial College

The construction of the Industrial College, co-founded with Shuibei Jewelry Group, is the core carrier of the fashion product-related majors' industry-university integration, focusing on the characteristics of jewelry, arts and crafts, and other sectors to realize specialized cooperation covering raw material identification, craft inheritance, and cultural innovation. To ensure systematic governance, the major has established an Industry-University-Research-Application Committee consisting of 7 enterprise experts, professional leaders, and government representatives, which directly participates in curriculum revision, project selection, and employment linkage, functioning as a bridge connecting educational planning with real industrial practice and market logic.

The Industrial College has established three functional centers with professional characteristics: a student entrepreneurship incubation center, a jewelry & craft design center, and a cultural heritage communication center. The entrepreneurship incubation center provides free venues and supply chain resources for graduates engaged in jewelry customization, craft creation, and other businesses, relying on the intensive jewelry merchants in Shuibei Jewelry Building. The jewelry & craft design center undertakes horizontal cooperation projects such as traditional craft innovation and cultural and creative product development with enterprises, organizing teachers and students to solve practical problems such as material optimization and process improvement. The cultural heritage communication center promotes the integration of traditional crafts with modern fashion, jointly holding design competitions, craft workshops, and industrial tourism activities with enterprises.

A representative event is the "Rong·Chuang" Jewelry Design Workshop and Design Competition. The first session, held in November 2021, invited 20 teachers and students from 10 domestic universities to participate, creating 40 works that were exhibited on campus and then toured in Shuibei Jewelry Group. The second session, held in March 2017, attracted 26 teachers and students from 13 domestic universities; under the guidance of instructor Xu Hao, participants created more than 50 works using ready-made materials and metal materials through training from concept development to physical creation,

focusing on jewelry and craft design. At the award ceremony, Shenzhen Polytechnic University's student and Guilin Tourism University's student won the first prize, and the event was highly recognized by leaders from the Shenzhen Gold and Jewelry Association and Shuibei Jewelry Group.

As introduced by the professional director: *"We have held two Rongchuang Jewelry Design and Workshop Competitions and two summer camps. For the competitions, teachers and students from more than 10 domestic universities participate, completing design, production, and exhibition in 5 days, with works displayed both on campus and in Shuibei. The summer camps invite foreign designers to give lectures to students."*

Figure 3-7: The "Rong·Chuang"Jewelry Design Workshop and Design Competition

Shuibei Jewelry Group's Industrial College is supported by the Luohu District Government and Xiaobu Sub-district Office, and the building has applied for the Guinness World Record as the world's largest jewelry city, aiming to build a 'production and sales integration' industrial tourism platform that covers jewelry customization, gold recycling, and online and offline integration. In response to the industrial transformation demand, the Industrial College has recently focused on the construction of a "golden jewelry production and sales integration" project, cooperating with enterprises to carry out e-commerce talent training targeting jewelry live-streaming, cross-border sales, and custom services. Enterprises provide students with centralized training on jewelry e-commerce operation and supply chain management, and outstanding students can be directly employed in

merchants in Shuibei Jewelry Building or engage in entrepreneurial practice. The professional director emphasized: "*Effective internships are closely linked to effective employment. We hope to realize planned internships, effective internships, and then effective employment, forming a positive cycle. The platform has numerous merchants, and we hope to accurately connect student internships with enterprise needs*."

3.1.3.3.2 Talent Cultivation Strategy and Industry-Integrated Curriculum Structure

1) Industry-Oriented Talent Cultivation Orientation

The Fashion Product Design major adheres to an industry-oriented talent cultivation strategy, closely following the entire industrial chain of fashion products (upstream material supply, midstream design and production, downstream marketing and operation) to set cultivation objectives. It aims to cultivate talents with "solid professional foundation, strong practical ability, and broad industrial vision"—graduates are not only proficient in design principles and craft techniques but also capable of adapting to new formats such as digital marketing and cross-border e-commerce, meeting the diverse talent needs of the industry in the transformation period.

The cultivation specifications cover 13 aspects including ideological morality, social responsibility, scientific culture, professional knowledge, problem analysis, and solution design. It emphasizes the cultivation of digital literacy to meet the needs of industrial digital development, as well as craftsmanship spirit focusing on excellence in product details and innovative awareness in new material R&D and zero-waste design. The major adopts hierarchical and differentiated training: undergraduate focuses on comprehensive cultivation to help students clarify subdivided directions, while junior college focuses on practical skill training for direct employment

2) UII-Based Curriculum System Framework: Building Courses on the Industrial Chain

The curriculum structure of the Fashion Product Design major is built around the entire fashion product industrial chain, divided into four modules: general education courses, subject basic courses, professional education courses, and intensive practical education courses, with a total of 175 credits and 3514 class hours. Practical teaching accounts for 65.9% of the total class hours, among which in-class experiment and training account for 1355 hours, and intensive practical education such as elementary semester comprehensive project training and on-the-job internship account for 960 hours, forming a systematic practical teaching chain that connects with industrial posts. The core curriculum, closely linked to industrial links, is set as Table 3-5.

Table 3-5: The curriculum structure of the Fashion Product Design major

Course Type	Core Course Name	Core Content

Subject Basic Courses	Design Introduction, Space and Materials, Generative AI Design Foundation	Lay a solid foundation for professional learning, covering design thinking, material application, and digital tool basics
Professional Basic Courses	Fashion History and Culture, Gem Material Science, 3D Digital Modeling for Jewelry	Construct a standardized professional knowledge system, focusing on gem identification, material properties, and jewelry digital modeling
Professional Core Courses	Jewelry Design & Craft, Traditional Craft Innovation, Gem Identification, Cultural and Creative Product Design, Brand and Market	Cultivate core capabilities, covering jewelry design, craft production, gem quality evaluation, and cultural product development
Professional Extension Courses	Lacquer Art Studio, Ceramic Art Studio, Cross-border E-commerce for Jewelry, Sustainable Fashion Design	Expand professional capabilities, with optional modules covering traditional crafts, jewelry e-commerce, etc.
Intensive Practical Education Courses	Industry Research and Art Practice, Craft Workshop, On-the-Job Internship, Graduation Design	Strengthen practical application capabilities, including 24-week on-the-job internship in jewelry enterprises and craft studios

As the professional director clearly stated in the interview: "*Our courses cover the entire industrial chain—upstream is material cognition and evaluation, midstream is design and production, and downstream is sales. Each link has corresponding courses. For example, the identification course helps students grasp raw material value, design and craft courses solve product R&D issues, and sales-related courses respond to market demand.*" The major specially sets three basic transition courses: Design Sketch, Design Color, and Space and Materials, connecting high school art foundation and university professional learning, guiding students to clarify their professional directions.

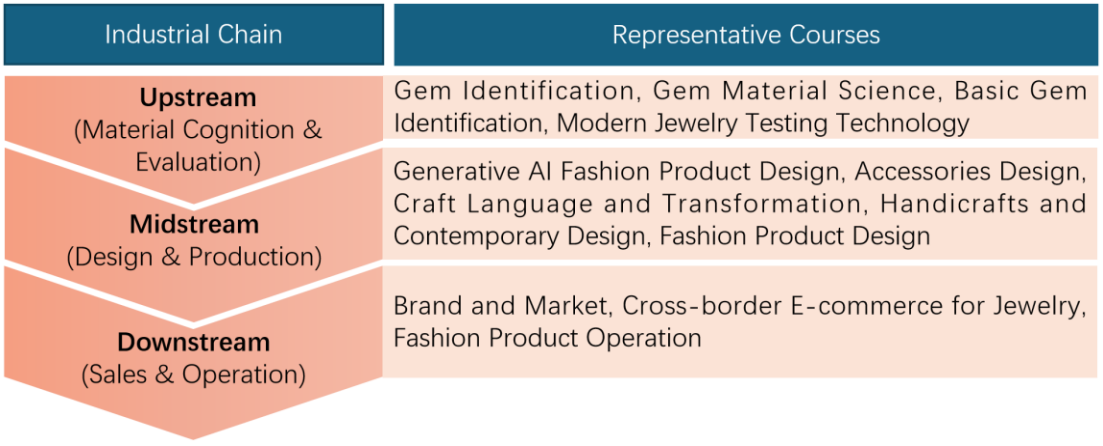

Figure 3-8: Courses Building on the Industrial Train

The major also integrates vocational skill certificates into the curriculum, with recommended certificates including senior Jewelry Design Vocational Skill Level Certificate and senior Computer-Aided Jewelry Design Vocational Skill Level Certificate, realizing the integration of courses and certificates that align with industrial post requirements. Professional courses require students to produce physical products and physical production training starts from the first semester of the sophomore year to avoid "only drawing blueprints without implementation".

3.1.3.4 Cooperation with Government and Public-Sector Initiatives

The Fashion Product Design major actively participates in government-led industrial development and cultural construction projects, realizing the integration of government, industry, and university.

The major has signed a strategic cooperation agreement with the Futian District Government to participate in the development of cultural and creative products based on Futian's cultural symbols. Teachers and students have designed a series of cultural and creative works for the district government, which were displayed and promoted at the China (Shenzhen) International Cultural Industry Fair. Many teachers from the college participated in the project execution, and the works were displayed simultaneously in the Futian exhibition area of the Cultural Industry Fair and the school's exhibition area. The major also participates in policy consultation for Futian District's fashion industry development plans, providing professional suggestions for deepening industry-university integration.

With the support of the Luohu District Government and Xiaobu Sub-district Office, the Industrial College has obtained policy preferences such as venue subsidies and talent training funds. The government coordinates resources to help the major connect with industrial projects, such as the "marriage registration + jewelry consumption" one-stop service project being applied for by Shuibei Jewelry Building. The project plans to integrate marriage registration, wedding jewelry customization, and wedding planning, with the major participating in the design of wedding jewelry series and cultural experience activities, and cooperating with the government to develop industrial tourism routes. The major will participate in the design of wedding jewelry and cultural experience projects, integrating teaching and practice into urban cultural construction.

3.1.3.5 Urban Activities and Collaborative Projects

Leveraging Shenzhen's advantages as a "design capital", the Fashion Product Design major systematically integrates urban cultural activities and social collaboration projects into its teaching, forming a distinctive "classroom-city-industry" integration model.

Teachers and students regularly participate in major urban events such as the China (Shenzhen) International Cultural Industry Fair, Shenzhen Design Week, and Greater Bay Area Fashion Integration Exhibition. Participation in these events is incorporated into

course assessments, requiring students to display works or complete research reports. For example, at each Cultural Industry Fair, the major sets up a special exhibition area to display students' design works, attracting enterprise cooperation intentions. The major has also held fashion shows at platforms such as Shenzhen Design Week and the Urban Planning Museum in the past.

The major has carried out a series of collaborative projects with cultural institutions and enterprises, such as the intangible cultural heritage embroidery design project with a children's foundation, the traditional pattern restoration project with Shenzhen Museum, and the volunteer apparel design project for Chow Tai Fook. The major also participated in the design and development of cultural and creative products for Shenzhen's urban cultural symbols, such as the mascot derivatives for Futian District, which were exhibited and promoted at the China (Shenzhen) International Cultural Industry Fair. For example, Shenzhen Museum once entrusted the school to design works related to a themed exhibition, and the teacher took the exhibition theme as a course task to guide students to complete physical production. In these projects, students transform cultural elements into fashion product designs, with outstanding works adopted by partners and put into production.

Figure 3-9: Shenzhen Museum Project: "Exhibition-Integrated" Teaching Collaboration

As the professional director emphasized in the interview: "*AI has a great impact, but it also brings new opportunities. For our students, the probability of entrepreneurship in the future is higher than before. I encourage them to study professional courses seriously and seize new trends like e-commerce to achieve good development."* Many graduates have engaged in Cross-border E-commerce of jewelry, and some have achieved success in overseas markets, which is supported by the industrial college's supply chain resources and enterprise training. The major encourages students to grasp the trend of cross-border

exports, and some junior college students have clearly expressed the demand for jewelry e-commerce entrepreneurship. These activities not only enhance students' social responsibility but also improve their practical design capabilities, laying a solid foundation for their future career development.

3.1.3.6 International Engagement

The Fashion Product Design major actively carries out international cooperation to enhance the internationalization level of talent cultivation. It has established cooperative relations with the Hong Kong Vocational Training Council, launching a joint training program that welcomes 15 Hong Kong students to study in Shenzhen. Students study in Hong Kong for three semesters and in Shenzhen for two semesters, obtaining both a Higher Diploma from the Hong Kong Vocational Training Council and a graduation certificate from the university. The cooperation overcame issues such as academic recognition, and the Hong Kong students have high classroom participation with no dropouts. The program's curriculum framework and assessment standards refer to international advanced experience, helping students improve their cross-cultural communication capabilities and international vision.

As shared by the professional director: "*We are currently negotiating a joint program with Istituto Marangoni in Italy, entering the stage of exchanging talent training plans. After the undergraduate upgrade is successful, we plan to launch corresponding undergraduate cooperation projects, providing students with overseas internship and employment recommendation opportunities.*"

In addition, the major organizes students to participate in international design exhibitions and competitions, such as joint fashion shows with institutions including The Hong Kong Polytechnic University and Shandong University of Art & Design. The major also invited foreign designers to conduct two international summer camps, focusing on cutting-edge design concepts and craft techniques to broaden students' international horizons. These activities provide students with international exchange platforms, enabling them to showcase their works and learn from advanced international design concepts.

3.1.3.7 Practical Platforms and Training Bases

The major has built a high-standard practical teaching platform with complete facilities, including on-campus training rooms and off-campus practice bases, fully matching industrial production conditions. On-campus, there are 10 types of training rooms including ceramic art, glass art, metalworking, fiber art, lacquer art, jewelry design, and gem identification, with a total area of 1084 square meters and 186 training stations. The total value of professional equipment assets exceeds 14.67 million yuan, with a per-student teaching and research equipment value of more than 58,400 yuan. The jewelry craft laboratory is equipped with 3D printing equipment, laser welding machines, lost-wax casting integrated machines, and other professional equipment that are consistent with

industrial standards, enabling students to complete the entire process from design to production independently. The on-campus training rooms also include material experiment laboratories equipped with laser Raman spectrometers, infrared spectrometers, and X-ray fluorescence spectrometers for gem identification and material analysis, which supports upstream material cognition and evaluation links in the industrial chain.

Figure 3-10: The On-Campus Training Rooms of the Fashion Product Design Major

Off-campus, the major has established stable practice bases with well-known enterprises such as Shenzhen Baitai Jewelry Industrial Co., Ltd., Shenzhen Guoci Yongfengyuan Porcelain Industry Co., Ltd., and Shenzhen Fenghui Holdings (Group) Co., Ltd. These bases provide internship positions covering design, production, marketing, and other posts, with complete training facilities and clear training instructors and management systems, allowing students to experience real industrial workflows. The major has also cooperated with enterprises such as Adier Jewelry and Little Horse Running in the past, and some cooperations were terminated due to industry cycle fluctuations.

In addition, the major has set up master studios with municipal and provincial arts and crafts masters, such as the Huang Wenshun Master Studio and Yang Siru Master Studio. Masters participate in teaching activities such as curriculum design, project guidance, and craft demonstration, inheriting traditional crafts and promoting innovation. For example, teachers and students of the major participated in the design and production of state banquet porcelain for the Qingdao Summit of the Shanghai Cooperation Organization, with the ceramic production process guided by craft masters and produced in cooperation with Sigaoda Ceramics. To ensure teachers keep pace with industrial development, the major has built an off-campus teacher training base at the Industrial College, requiring full-time teachers to have over three years of enterprise experience or no less than 6 months of social practice in five years, and the “double-qualified” teacher ratio reaches 89.47%, including

one provincial arts and crafts master, one municipal arts and crafts master, and one “Shenzhen Craftsman”.

3.1.4 Outcomes of UII: Students Perspective

3.1.4.1 Graduation Project

The major supports three types of graduation project propositions to meet students’ diverse development needs. First, enterprise propositions require students to combine the actual work content of their internship positions to ensure the practicality of the results. Second, personal propositions adapt to the portfolios required for studying abroad, encouraging students to carry out imaginative and open creative expression. Third, competition propositions allow students to focus on the themes of various industry competitions to enhance the competitiveness of their works. Regardless of the proposition type, students must complete at least 5 physical products, accompanied by complete design instructions, research data, and other materials to ensure the professionalism and completeness of the graduation achievements.

3.1.4.2 Diversified Development Paths

Graduates have three main development directions: employment, entrepreneurship, and further study. In terms of employment, they can engage in positions covering the entire industrial chain, such as jewelry design, material identification, e-commerce operation, and brand management, and are highly recognized by enterprises such as Shuibei Jewelry City merchants and fashion brands. In terms of entrepreneurship, relying on the Industrial College’s free venues, supply chain resources, and e-commerce training support, students can establish personal studios or companies through the model of "design + commissioned processing + e-commerce sales," and some graduates have achieved success in cross-border e-commerce. In terms of further study, students can pursue postgraduate studies in domestic institutions to strengthen professional depth, or study abroad with their graduation works as portfolios, and the international cooperation project with Istituto Marangoni will provide more overseas study opportunities.

3.1.5 Outcomes of UII: Teachers Perspective

University-industry integration (UII) not only reshapes talent cultivation models and industrial collaboration mechanisms but also exerts a profound, multi-dimensional impact on the professional growth and comprehensive development of fashion design teachers. Taking Teacher Chen Linlin from Shenzhen Polytechnic University’s (SZPU) School of Innovation and Creative Design as a typical case—drawing on her in-depth UII practice and achievements—this section analyzes the specific impacts of UII on teachers.

3.1.5.1 Teaching Content Innovation and Curriculum Upgrading

UII drives teachers to move beyond textbook-centered teaching by integrating real-world resources and dynamic industry demands into curricula. A standout example is Teacher Chen's development of the school-level "Golden Course" Jewelry Design. She forged deep collaborations with partners including Tencent Public Welfare, Shenzhen Zizai Culture Communication Co., Ltd., and Macau Cloé Jewelry & Art Studio, then seamlessly embedded their real design projects into classroom teaching. Simultaneously, she linked the course to intangible cultural heritage (ICH) inheritance through initiatives like the "Dong Art Fabric Reconstruction Program," guiding students to deconstruct traditional Dong fabric techniques and reinterpret them with contemporary design language. This dual integration of industrial projects and cultural inheritance not only enriched the course content but also honed her ability to adjust curriculum modules dynamically—ensuring teaching closely aligns with both market trends and cultural innovation needs—ultimately earning the course multiple accolades, including first prize in the Guangdong Higher Vocational College Art Design Professional Competence Competition organized by the Ministry of Education's Teaching Steering Committee. Additionally, she translated UII practice insights into tailored teaching cases and professional competition guidance for students, with her mentees claiming top awards in prestigious events including the SDA Shenzhen Global Design Awards and the Guangdong Vocational College Skills Competition.

Figure 3-11: Teacher Chen Embedded Real Projects into her Course Jewelry Design

3.1.5.2 Practical and Interdisciplinary Competence Improvement

UII provides teachers with immersive frontline practice opportunities that bridge the gap between academic theory and industrial application. In 2023, Teacher Chen partnered with Professor Xie Hui from her college to conduct research in Dong villages in Guizhou, where she explored traditional bright fabric craftsmanship and collaborated with local summer camps to launch the "Folding Time" on-site workshop for high school students. During the workshop, she guided participants to create jewelry using leftover Dong fabric, integrating sustainable design concepts with ICH inheritance. This experience allowed her to master practical skills such as cross-stakeholder communication, on-site project management, and creative transformation of cultural elements, while also developing interdisciplinary literacy spanning design, culture, environmental protection, and public welfare. Such capabilities were further reflected in her creative practice, which merged traditional craft with modern aesthetics—achievements unattainable through classroom teaching alone.

3.1.5.3 Academic Research Advancement and Achievement Transformation

UII anchors teachers' research in real industrial and social needs, driving the transformation of theoretical research into tangible academic and professional outcomes. Teacher Chen's academic pursuits, centered on ICH localized innovation and sustainable design, were directly fueled by her UII practice. For instance, her research on Dong fabric techniques and leftover material recycling—derived from workshop and course practice—helped her successfully secure a Ministry of Education Youth Project focusing on craft inheritance. Beyond research projects, her UII-driven expertise also led to key roles in national teaching standard development: she served as the lead author of the *2022 Secondary Vocational School Jewelry Design and Production Professional Teaching Standards* and participated in formulating the *2020 Higher Vocational Jewelry Design and Craft Professional Teaching Standards*, translating practical insights into industry-wide academic guidelines.

3.1.5.4 Cultural Inheritance and Social Service Literacy Cultivation

UII expands teachers' roles from knowledge imparters to holistic integrators of cultural inheritance, industrial innovation, and social service. Teacher Chen's efforts in cultural communication and public welfare are closely tied to her UII practice: her work "Dong Jewelry：, an innovative interpretation of traditional craftsmanship nurtured through university, company and community collaborations, was selected for the 2023 "China Design Exhibition" organized by the Ministry of Culture and Tourism. The "Perfect Fabric - Time Cherish Plan," a project born from classroom-industry integration, won the Silver Award at the Shenzhen Global Design Awards and the Second Prize at the China Advertising Festival's Yellow River Awards, amplifying the social impact of cultural inheritance. Beyond award-winning works, she actively promoted ICH dissemination through public initiatives linked to UII—such as organizing the Guizhou Dong village

workshop and hosting public welfare activities at the Sea World Culture and Art Center in 2024—to raise public awareness of Dong fabric craftsmanship. These experiences deepened her understanding of traditional culture, strengthened her cultural communication and public service capabilities, and solidified her role as a bridge between cultural heritage, education, and society.

Figure 3-12: Teacher Chen's Work was selected for the 2023 "China Design Exhibition"

3.1.6 Discussion

Based on the case of the Innovation and Creative Design School of Shenzhen Polytechnic University, particularly the Fashion and Apparel Design major, this section first proposes a UII model of the Innovation and Creative Design School, and then discusses the strengths and limitations of its university–industry integration (UII) model. The discussion is grounded in the empirical evidence presented in the previous sections and responds to broader debates on the sustainability, effectiveness, and governance of UII in vocational and applied higher education.

3.1.6.1 The UII Model

Before discussing the strengths and limitations of the UII model, it is necessary to present a conceptual framework that captures how university–industry integration is structured and operationalized within the Fashion and Apparel Design major. This framework illustrates the internal logic of the program's UII efforts and clarifies the relationships among its key components.

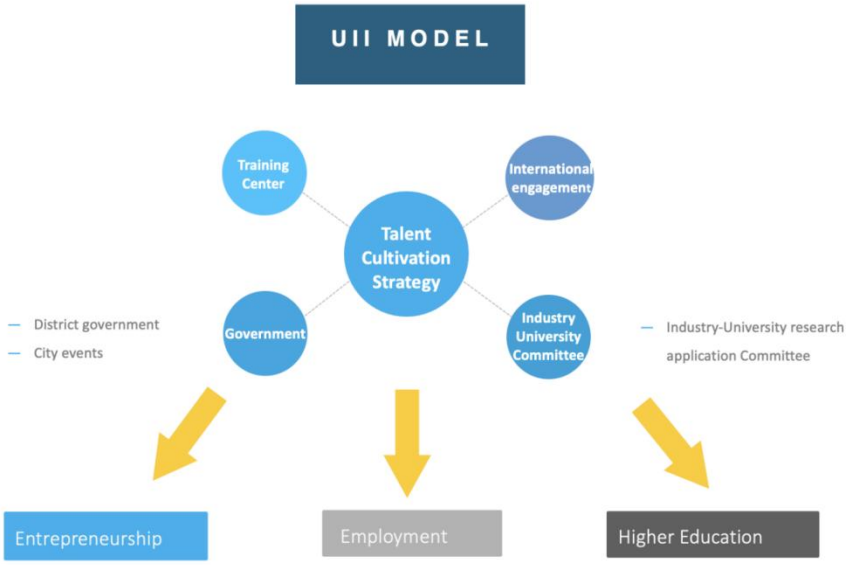

Figure 3-13: The UII model of Fashion and Apparel Design major

At the core of the model lies the talent cultivation strategy, which functions as the central organizing principle of all integration activities. Talent cultivation is not treated as a passive outcome of teaching, but as a clearly articulated, goal-driven process aligned with industry standards, occupational roles, and regional development needs. Curriculum design, course sequencing, assessment methods, and teaching organization are all derived from this central objective of cultivating application-oriented, industry-ready design professionals.Surrounding this core are four interrelated and mutually reinforcing dimensions that operationalize university–industry integration:

The Industry–University–Research–Application Committee

This committee provides the institutional and governance foundation of the UII model. By involving senior industry experts directly in decision-making, curriculum revision, project selection, and employment linkage, the committee ensures that talent cultivation objectives remain closely aligned with evolving industry demands. It functions as a bridge connecting educational planning with real industrial practice and market logic.

International Engagement

International and cross-regional cooperation extends the UII model beyond the local context. Through Shenzhen–Hong Kong collaborative programs, joint curriculum development, international fashion shows, and overseas institutional partnerships, global industry standards and perspectives are integrated into talent cultivation. This dimension enhances students' cross-cultural competence, international awareness, and adaptability in a globalized fashion industry.

Engagement with Government and Urban Projects

Government participation and urban-level collaboration embed the program within

Shenzhen's broader fashion industry ecosystem. Through policy consultation, district-level cooperation, public-sector initiatives, and urban cultural projects, talent cultivation is aligned with regional industrial strategies and public development goals. Urban projects and government-coordinated internships further translate policy priorities into concrete learning experiences.

Training Centers and Practice Platforms

Advanced training centers provide the material and technological foundation for the UII model. Industry-simulated production environments, digital design and smart manufacturing facilities, and specialized craft studios enable students to transform theoretical knowledge into practical competence. These platforms ensure that talent cultivation is grounded in authentic workflows, equipment standards, and technological applications.

Together, these four dimensions form a supporting ring around the central talent cultivation strategy, creating a stable and integrated system in which education, industry, government, and international resources are coordinated rather than fragmented.

At the outcome level, this five-part model produces diversified and sustainable pathways for students' professional development. Graduates are not funneled into a single career trajectory; instead, the UII framework supports three primary pathways:

- Employment, through direct recruitment by partner enterprises and strong alignment with industry job requirements;
- Entrepreneurship, enabled by project-based learning, exposure to real markets, and participation in urban and industry platforms;
- Higher education, supported by international articulation programs, cross-border cooperation, and clear progression routes to undergraduate and postgraduate study.

This conceptual model highlights that the UII efforts of the Fashion and Apparel Design major are not a collection of isolated initiatives, but a systematically structured ecosystem centered on talent cultivation. It provides an analytical foundation for the subsequent discussion of the model's effectiveness, strengths, and limitations.

3.1.6.2 Strengths of the UII Model

Smooth and Embedded Integration Between Education and Industry

One of the most prominent strengths of the UII model is the high degree of smooth integration between education programs and industry practice. Rather than treating industry cooperation as an external or supplementary activity, the School embeds city-level

policies, government initiatives, and enterprise projects directly into everyday curriculum design, teaching organization, and assessment. Industry participation is reflected not only in internships or graduation projects, but also in core professional courses, project-based learning modules, skills certification integration, and teaching evaluation.

This embedded approach enables the curriculum to keep pace with industry developments in a seamless manner. Real enterprise briefs, museum projects, public design commissions, and digital technology applications are systematically translated into teaching tasks, ensuring that students engage with current industry workflows, standards, and technologies throughout their studies. As a result, the boundary between "learning" and "working" is significantly blurred, enhancing the relevance and responsiveness of the education program.

Active Government Participation and Strong Industry Motivation

A second key strength lies in the dual driving force of government participation and strong industry motivation. The case demonstrates that local government in Shenzhen does not only act as a regulator, but also as an active coordinator and facilitator of university–industry collaboration. Through district-level cooperation agreements, policy consultation mechanisms, internship coordination, and participation in industrial planning (such as the 14th Five-Year Plan for the fashion industry), government involvement provides institutional legitimacy, resource support, and strategic direction for UII initiatives.

At the same time, enterprises show a high level of intrinsic motivation to participate in education. Industry experts are willing to serve on the Industry–University–Research–Application Committee, teach courses, provide real projects, and recruit graduates directly. This motivation is closely linked to Shenzhen's highly competitive fashion industry environment, where enterprises face constant pressure for innovation, talent renewal, and technological upgrading. UII thus becomes a mutually beneficial mechanism: enterprises gain access to talent pipelines and creative input, while the university gains industry relevance and practical resources.

Strong Institutional Awareness and Goal-Oriented Culture Within the School

The third strength is the high level of institutional awareness and a clear, goal-oriented atmosphere within the School. University–industry integration is not implemented in a fragmented or ad hoc manner; rather, it is widely recognized by faculty, administrators, and students as a core development strategy. This shared understanding is reflected in the establishment of formal governance structures (such as the Industry–University–Research–Application Committee), long-term cooperation mechanisms, and the prioritization of applied outcomes in teaching, research, and service.

Faculty members actively seek industry projects and policy engagement opportunities, while students are accustomed to working on real briefs, participating in public exhibitions, and interacting with enterprise mentors. This strong internal consensus reduces resistance

to curriculum change, facilitates cross-course coordination, and enhances the overall effectiveness of UII implementation.

3.1.6.3 Limitations and Challenges of the UII Model

Despite its strengths, the UII model also exhibits structural limitations, particularly in relation to external governance and sustainability.

Vulnerability to Governmental and Administrative Changes

A key limitation is the susceptibility of certain UII initiatives to changes in government leadership and administrative priorities. The Dalang Industry School provides a representative example. Although the initiative was well-designed and aligned with regional industrial development goals, it was eventually discontinued as an independent institutional project due to a change in leadership within the district government.

This case highlights a broader challenge in government-led UII models: while strong government involvement can accelerate cooperation and resource mobilization, it may also introduce policy instability and discontinuity. Projects that rely heavily on specific administrative champions or district-level political support may face uncertainty when leadership transitions occur. Although the School successfully retained and adapted some of the core practices of the Dalang model, the experience underscores the need for more resilient and institutionally anchored cooperation mechanisms that can withstand external political fluctuations.

3.1.6.4 Theoretical Implications: Supplementing the Sectoral Adaptation of UII Core Theories

Based on the empirical cases of university-industry integration (UII) in fashion design majors at Shenzhen Polytechnic University, this study combines the multi-agent mechanism, operational characteristics, and practical logic extracted from the research conclusions. Aiming at the research gaps of existing UII theories in the field of creative industries, it supplements and deepens the theories from three dimensions, highlighting the academic value and theoretical contributions of the research.

First, clarify the differentiated role mechanism of the government in the UII ecosystem and improve the multi-agent collaboration theory. Existing UII theories mostly discuss the government's role as a “policy provider” or “resource supporter” in a single way, lacking in-depth interpretation of the dynamic role logic and potential risks of government participation in UII of the creative industry. Verified by cases in this study, the government is not only a resource provider and policy guide in the UII ecosystem, but its close collaboration with universities and enterprises is also the core guarantee for building a stable UII network, which can provide scenario empowerment and sustainable development momentum for cooperative projects. Meanwhile, the limitation that government-led projects are vulnerable to changes in administrative decisions also reveals

that the government's role must balance the dual attributes of “guidance”and “stability”. This finding breaks the homogeneous cognition of the government's role in the UII ecosystem, refines the collaborative interaction logic between the government and other agents, makes the UII multi-agent collaboration theory more in line with the practical scenarios of the creative industry, and improves the operability of the theory.

Second, establish the core link value of teachers and fill the gap in the subject cognition of UII ecosystem theory. Existing UII ecosystem theories mostly focus on the ternary subject structure of “university-enterprise-government”, regarding teachers as a subsidiary part of universities and ignoring their key role in solving "superficial integration". The conclusions of this study clarify that teachers' in-depth participation in the industry is the core link connecting industrial resources, cultural inheritance and teaching practice. Through participating in industrial projects and engaging in front-line practice, teachers transform cutting-edge industrial needs and traditional craft experience into teaching content, which is the core path to realize "seamless integration of industrial projects into courses" and "integration of cultural inheritance and teaching". This finding elevates teachers from "subsidiary subjects" to "core hubs", incorporates them into the core component dimension of the UII ecosystem, improves the subject framework of UII ecosystem theory, and deepens the understanding of the internal mechanism of multi-agent interaction.

Third, enrich the theoretical connotation of UII flexibility and multi-sources, and expand the boundary of UII operation theory in the creative industry. Existing studies on UII operational characteristics mostly focus on modularized and standardized cooperation forms, and insufficiently interpret the flexibility, multi-source characteristics and internal supporting logic required by UII in the creative industry. Revealed by case analysis in this study, the efficient operation of UII in fashion design majors relies on the dual support of ***“flexible adaptation to professional attributes” and “construction of a multi-source cooperation network”***. Flexibility is reflected in adjusting cooperation objectives and forms according to different professional characteristics (digital empowerment in apparel majors, craft inheritance in jewelry majors) to avoid homogeneous operation; multi-sources are manifested in the cooperation network covering enterprises, governments, cultural institutions, public welfare organizations and other multi-agents, providing diversified resources and value orientations for UII. This finding fills the research gap of existing theories on the operational characteristics of UII in the creative industry, enriches the scenario-based connotation of UII operation theory, and provides a theoretical reference for the construction of UII models in similar creative disciplines.

3.1.7 Conclusion

This study takes two representative majors—Fashion and Apparel Design, and Fashion Product Design—in the Innovation and Creative Design School of Shenzhen Polytechnic University (SZPU) as empirical cases, systematically exploring the operation mechanism, practical characteristics, and effectiveness boundaries of university-industry integration

(UII) in fashion design-related fields through qualitative research methods such as case study and semi-structured interviews. Against the backdrop of China's vocational education reform and Shenzhen's fashion industry upgrading, this research clarifies the core logic of UII in creative industries and provides actionable insights for similar practices, with key conclusions as follows:

First, the UII practice of SZPU's fashion design-related majors has formed a "talent cultivation-centered, multi-stakeholder synergy" ecosystem with distinct professional characteristics, where talent cultivation and curriculum design stand at the core of the UII model. Guided by the core goal of aligning with regional industrial needs, this ecosystem constructs a stable operational framework supported by multiple pillars, among which advanced training centers and professional facilities provide solid resource guarantees for the deep integration of theory and practice. Unlike the technology-driven UII model in technical fields, fashion design majors emphasize the dual integration of "industry demand + cultural inheritance", realizing the organic connection between professional education, industrial development, and cultural continuity.

Notably, teachers' active participation in industrial practice plays a pivotal role in the operation of this UII ecosystem. It is through teachers' in-depth involvement in industry projects, field research, and cooperative development that industrial resources, cutting-edge demands, and craft inheritance experiences are effectively transformed into teaching content. This participation not only enhances teachers' comprehensive competence but also ensures that the UII model can truly bridge the gap between education and industry, avoiding superficial integration.

Second, the UII model of fashion design-related majors presents differentiated operation logic based on professional attributes, while adhering to the consistent characteristics of seamless integration of industry projects into course design. For Fashion and Apparel Design, the model focuses on responding to industrial digital transformation and brand upgrading demands, forming diversified cooperation forms such as curriculum co-design with leading enterprises, joint participation in major event design, and construction of digital training bases. Its core advantage lies in embedding digital technologies and industrial processes into teaching through real industry projects. For Fashion Product Design, the model takes traditional craft inheritance and innovation as the core, relying on industrial colleges, master studios, and cultural and creative projects to realize the modern transformation of traditional skills—also by integrating project-based tasks into daily teaching. Both majors adhere to the "industrial chain-oriented" curriculum design concept, with practical teaching accounting for over 65% of total class hours, which fully reflects the model's flexibility in adapting to different professional needs and industrial trends.

Third, the effectiveness of SZPU's UII model is supported by its multi-source cooperation network and close collaboration with the government. The ecosystem expands its boundaries through institutionalized governance of the Industry–University–Research–

Application Committee, international exchange and cooperation, and participation in government-urban projects. Government collaboration provides policy support and resource platforms for UII initiatives, while multi-source cooperation (covering leading enterprises, cultural institutions, and public welfare organizations) enriches the connotation and forms of integration, realizing three-dimensional value in talent cultivation, industrial services, and cultural inheritance.

Nevertheless, the model also faces inevitable constraints: some government-led UII initiatives are vulnerable to administrative leadership changes, leading to potential discontinuity; and the balance between artistic creativity and industrial practicality in teaching needs further optimization. These limitations point out clear directions for the subsequent optimization of the UII model.

Fourth, the UII practice of SZPU's fashion design-related majors provides generalizable experience for UII in creative industries. For fashion design education institutions, the key to effective UII lies in adhering to talent cultivation as the core, building an integrated system of "industry-culture-technology", and innovating practical teaching carriers with professional characteristics. For the fashion industry, UII is not only a talent reserve channel but also an important path for innovation empowerment. For regional development, taking UII as a link can promote the collaborative upgrading of the "education-industry-culture"ecosystem, helping build distinctive regional fashion brands.

In essence, the UII model of SZPU's fashion design-related majors breaks the traditional "superficial integration" dilemma in creative industries by rooting in regional industrial characteristics, emphasizing cultural inheritance, and realizing multi-stakeholder value co-creation. It proves that UII in fashion design fields must adhere to the dual logic of "industrial demand adaptation" and "cultural value preservation", and construct a flexible and resilient operation mechanism supported by teacher participation, project integration, and multi-party collaboration.

Looking forward, future UII practice in fashion design-related fields should focus on three directions: first, optimizing the risk resistance mechanism of government-led cooperation to enhance the sustainability of UII initiatives; second, building a platform for small and medium-sized enterprises to participate in UII, expanding the coverage of cooperative subjects; third, strengthening the integration of digital technologies such as AI with traditional craft teaching to promote the innovative development of traditional culture. Future research can further expand the scope of cases, conduct cross-regional and cross-institutional comparative studies, and explore the long-term impact of UII on the sustainable development of the fashion industry, to continuously enrich and improve the UII theoretical system in creative industries. This study not only enriches the sectoral case library of UII research but also provides practical references for the high-quality development of fashion design education and regional fashion industry.

3.2 Case Study of UII in Business Studies in SZPU: Based on the Cross-Border E-Commerce Major

3.2.1 Introduction

University-Industry Integration(UII), as a core strategy for the reform of vocational and higher education in China, refers to the organic connection between the education chain, talent chain, and the industry chain, innovation chain through resource sharing, complementary advantages, and collaborative education between industry and education. Its essence lies in breaking down the barriers between universities and enterprises, promoting the deep integration of the teaching process and the production process, thereby cultivating high-quality technical and skilled talents that meet the needs of economic and social development. In China, UII is not only an educational model but also an institutional design, aiming to resolve the structural contradiction between talent cultivation and industrial demand, and to enhance education's capacity to serve industrial upgrading and regional development.

The importance of UII is reflected at multiple levels. From a national strategic perspective, it is a crucial pathway for promoting innovation-driven development and building a modern economic system. In 2017, the General Office of the State Council issued the “Several Opinions on Deepening Industry-Education Integration”, elevating UII to a national strategy for the first time, explicitly proposing to “form a work pattern where the government, enterprises, universities, industries, and society jointly advance”(General Office of the State Council, 2017). From the perspective of education quality, UII effectively enhances the practicality of learning projects, the advancement of teaching content, and students' professional competence by introducing real enterprise projects, technological platforms, and teaching resources. From the perspective of industrial development, enterprises can more precisely acquire needed talents, reduce recruitment and training costs, and accelerate technology transfer and innovation by participating in talent cultivation.

In China, the development of UII exhibits typical characteristics of “policy-driven, local piloting, and multi-stakeholder participation”. Especially in the Guangdong-Hong Kong-Macao Greater Bay Area (the GBA), a national strategic region, UII is entrusted with an even more urgent mission. As one of China's most open and economically vibrant regions, the GBA is accelerating the construction of an international science and technology innovation center, creating a pressing demand for high-quality interdisciplinary talents with cross-cultural communication skills, technology application abilities, and innovative thinking. The “Outline Development Plan for the Guangdong-Hong Kong-Macao Greater Bay Area”released in 2019 explicitly proposes to "build an education and talent highland" and promote the deep integration of vocational education and industry (CPC & General Office of the State Council, 2019). In December 2025, the Ministry of Education released

the latest “Guidelines for the Development and Implementation of Enterprise Practice Projects in Vocational Education”, detailing in the file “Guidelines for the Development and Implementation of Enterprise Practice Projects for Teachers in Vocational Education (E-commerce Category)”, showing the goals that vocational education teachers should achieve through enterprise practice (Ministry of Education, 2025).

Shenzhen, as the core engine of the GBA, possesses pioneering and representative UII practices. With its city spirit of "daring to venture and experiment", Shenzhen has explored various innovative UII models. For example, the “Nine Joint Actions” model proposed by Shenzhen Polytechnic University (SZPU) (joint governance, joint curriculum development, joint faculty building, joint technology research, joint standard setting, joint certificate issuance, joint promotion of innovation and entrepreneurship, joint internship base construction, joint overseas TVET skill center establishment) reflects the transition from superficial to deep integration between universities and enterprises. Additionally, Shenzhen University (SZU) co-establishing AI schools and internship bases with enterprises like Tencent and Huawei, and Southern University of Science and Technology (SUST) conducting project-based learning and practical doctoral training jointly with enterprises, all demonstrate the diverse pathways of UII among Shenzhen’s universities.

In the emerging cross-border e-commerce industry, the significance of UII is particularly prominent. As Chinese brands accelerate their overseas expansion, cross-border e-commerce enterprises have a surging demand for interdisciplinary talents possessing foreign language skills, digital marketing skills, supply chain management knowledge, and cross-cultural communication abilities. However, the traditional education system often lags industry changes, leading to a disconnect between talent supply and market demand. Through UII, universities can introduce real operational scenarios, cross-border e-commerce platform data, intelligent translation tools, and other resources, enabling students to "learn in real projects". Teachers can also enhance their professional capabilities by participating in enterprise technology R&D, thereby achieving the integration of "teaching, learning, doing, and researching".

This case will take the typical case of cooperation between the Cross-border E-commerce Major of the School of Foreign Languages and Business at Shenzhen Polytechnic University and a cross-border e-commerce enterprise as the research object, aiming to provide reference for UII practices in cross-border e-commerce and related majors in higher vocational colleges and applied undergraduate institutions in China and internationally.

3.2.2 Methodology

1. Interviews. The authors jointly interviewed Mr. Liu Can, the CEO of the cooperating enterprise, conducting a comprehensive review and discussion on the origin, establishment, execution, evaluation, summary, and prospects of the UII project. Additionally, the authors

interviewed 2 enterprise mentors, 4 university teachers, and 5 students who participated in the cooperation project, including both graduates and current students. With informed consent, approximately 10 hours of interview recordings were transcribed into text. Relevant content, after compilation, is presented and cited in this paper. To protect privacy, the interviewed teachers and students are anonymized.

Figure 3-14: Mr. Liu Can (center), CEO of the cooperating enterprise in this case, being interviewed by the authors

2. Document Analysis. The authors obtained a series of documents related to the cooperation from the involved parties, including signed cooperation agreements, meeting minutes, procedural documents, as well as materials used during the cooperation. Additionally, there were images, videos, and other recorded materials from the UII activities.

校企合作协议书

深圳职业技术大学（以下简称甲方）与安然无恙科技（深圳）有限公司（以下简称乙方），就共同建立校企合作关系，建立“深圳职业技术大学实习基地”事宜，经双方友好协商，达成如下合作意向：

一、合作总则：

为大力发展高等职业技术教育，实施以职业能力培养为中心的教学模式，为企业培养既有良好职业素质又有很强的操作技能的应用型人才，双方同意建立校企合作关系，甲方在乙方挂牌建立“深圳职业技术大学实习基地”。

根据市政府有关校企合作，走“产、学、研”相结合道路的指示精神，本着双方互惠互利的原则，甲方所属系（部）根据教学计划和课程教学大纲的要求，在不影响乙方正常生产的前提下，就遴学生到乙方实习，乙方根据学生实习期的内容和项目，课题给予适当安排，并派担任主管以上的专业技术人员进行教学指导，以保证学生能顺利完成实习教学内容，为毕业后服务于企业奠定良好的基础。

甲乙双方组成实习领导小组（组长由乙方担任），对实习学生进行教学和管理。

二、责任和义务：

（一）甲方：

1、根据乙方的实际情况和要求，提供信息服务、技术援助和项目合作研究。

2、确定基地名称和牌匾的制作，并负责在媒体上进行宣传报道，扩大企业知名度。

3、根据专业教学计划和课程教学大纲要求，初步确定每次实习的时间、内容、人数和要求，提前二个月与乙方联系，与乙方共同制定具体实施计划和安排。

4、委派专人负责管理实习学生的行政事务，并参与教学和指导工作。

5、负责实习学生的往返交通和其它教学工作。

6、教育实习学生严格遵守乙方的各项管理制度和劳动制度。

7、在职业培训等方面优先安排乙方。

（二）乙方：

1、充分利用企业的行业优势和影响，根据自身需要与甲方进行项目

合作研究，并对双方成果进行推广。

2、按照甲方教学计划，结合单位实际情况，安排学生实习内容、指导实习过程，培养学生实际操作能力和职业素质。

3、提供实习设备、场地和原材料。

4、对实习学生的实习成绩进行全面的评价和考核。

5、根据情况酌情为实习师生提供工作午餐，尽可能为学生提供适量实习补贴。

6、为学生购买必要的人身意外伤害保险。

7、根据学生的综合表现和意愿，可优先选择优秀毕业生就业。

8、学生在使用乙方的机器设备时，必须在乙方的指导教师的指导下，才能上机操作；操作过程中必须遵守有关安全生产操作流程。

三、合作时间：

合作时间为三年，根据双方合作意愿和实际情况，可长期合作。首次合作结束后，双方可共同商议形成新的合作意向。

四、其它：

1、本协议一式贰份，双方各执一份，合作协议一经双方代表签字、盖章即生效，双方应遵守有关条款，未尽事宜，可由双方协商解决。

2、甲方在乙方实习期间创造的有形知识产权属深职大，对于双方共同合作开发研制项目，产权归双方共同所有。

甲方：（盖章）深圳职业技术大学

代表：（签字）

日期：

乙方：（盖章）安然无恙科技（深圳）有限公司

代表：（签字）

日期：

Figure 3-15: Formal UII agreements related to this case

3. Behavioral Observation. The authors of this paper are all teachers from the Cross-border E-commerce Major of the School of Foreign Languages and Business at SZPU, connected with the relevant entities of this case and have all participated in it. Through personal involvement and observation from the side, the authors collected the performance and feedback of various stakeholders before, during and after the cooperation. These observational insights can assist in intuitively understanding and evaluating the cooperation project comprehensively.

3.2.3 Case Study

This section details the cooperation background, theoretical foundation, mechanism design, plan formulation, and practical training execution of the cooperation project. The research object is a typical case among a series of UII projects carried out under the UII pathway of the School of Foreign Languages and Business at SZPU - “SZPU-Anran Wuyang UII Internship Base Construction”. As mentioned earlier, the information, data, and materials involved in this case analysis come from the formal documents and records of this UII project, the authors' field visits to the enterprise, and interviews with relevant personnel.

3.2.3.1 Case Background

Currently, UII models have undergone richer and deeper explorations compared to the past. For example, the “Nine Joint Actions”concept proposed by SZPU, and the industry college models jointly established by many schools in collaboration with leading enterprises under this concept, have become a hallmark of the “SZPU Model” of UII. Admittedly, the cooperation goals and expected outcomes under this model are impressive, but its requirements for teaching majors, supporting industries, partner enterprises, and operational support are significantly higher. The initial momentum and operational inertia of such projects are also substantial, making replication objectively difficult and costly, and not necessarily applicable to all industries.

Taking the cross-border e-commerce industry as an example. After over a decade of rapid development, the industry in Shenzhen has formed relatively distinct industrial characteristics: geographical clustering, flexibility and rapid changes, dominance of small and medium-sized enterprises (SMEs), frequent personnel mobility, lack of prominent local platforms, but a complete upstream-downstream industrial chain connected by major industry platforms. In this context, universities offering emerging finance, economics, and business majors like cross-border e-commerce often cannot achieve cooperation projects overnight according to the conditions of “high standards, high investment, high output”. Given this, the School of Foreign Languages and Business at SZPU had to innovatively explore a standardized, effective, pragmatic, and feasible UII pathway when constructing UII projects for the cross-border e-commerce major.

To address problems caused by these industry characteristics, the School explicitly proposed in its UII pathway to “fully leverage the role and advantages of industry associations”. Since the formal establishment of the cross-border e-commerce major at the School, the construction of the UII system surrounding this major incorporated the Shenzhen Cross-border E-commerce Association as a crucial component. Practice has proven that the “University-Association-Enterprise” cooperation pathway fits the characteristics of the cross-border e-commerce industry well, yielding satisfactory UII outcomes.

The case introduced in this paper is one of the outputs under this cooperation model. The project officially commenced in October 2023, held its first training session in January 2024, and entered a phase of regular operation. The core content involves the School commissioning Anran Wuyang to regularly conduct short-term enterprise training camps, mostly during winter and summer vacations at the end of each semester. Each session can accommodate 15-20 students for a 2-week cross-border e-commerce practical operation training at the enterprise. The training content outline is proposed by the enterprise based on experience, needs, and industry reality, with detailed plans jointly developed by both parties, covering core aspects of the basic cross-border e-commerce operation process. Each training camp also accepts 4-5 teachers for enterprise shadowing. To date, 5 sessions have been conducted, involving over 80 students and over 20 teacher participations cumulatively.

3.2.3.2 Stakeholders

School of Foreign Languages and Business, SZPU (Stakeholder 1): The Cross-border E-commerce Major, approved as a higher vocational college program in 2021 and as a vocational undergraduate program in 2024, is also the first cross-border e-commerce undergraduate program in Shenzhen. Building on the college's characteristic of "Major + Foreign Languages", it has established a "BOLD" talent cultivation model, committed to cultivating high-quality technical and skilled interdisciplinary talents who understand Business, can Operate, know Languages, and possess Digital literacy. The major closely aligns with the cross-border e-commerce industry cluster in the GBA and possesses a team of "dual-qualified" teachers with both academic backgrounds and industry experience. Currently, the major has 40 full-time teachers, 100% holding postgraduate degrees, including 27 PhDs (67.5%); teachers with senior titles account for 65% (10 professors, 16 associate professors); teachers with overseas study or research experience account for 70%. The university is the primary initiator in this project, involved throughout.

Shenzhen Cross-Border E-Commerce Association (Stakeholder 2): Established in 2014, it is a local, industrial, non-profit 5A-level social organization with over 3,000 member enterprises and serving over 50,000 enterprises. As a local industry organization, it plays a bridging role in promoting university-enterprise connections and industry exchanges. Since 2018, it has hosted the annual "616 Global Cross-Border E-Commerce Festival", with on-site attendance reaching hundreds of thousands and online views exceeding millions each session. This cooperation was facilitated through the matchmaking and coordination of the Association. The Association plays the role of intermediary in this project, primarily active in the project's preliminary, initiation, and subsequent extension phases.

Anran Wuyang Technology (Shenzhen) Co., Ltd. (Stakeholder 3): Established in 2023, it is a cross-border e-commerce company focused on the TikTok e-commerce ecosystem. Founder Liu Can has a background from the Association. The company started as a live-

streaming service provider and later transformed into an independent brand seller driven by “live-streaming + short video”. Leveraging deep TikTok platform operations and supply chain advantages in the GBA, the company has achieved rapid growth in recent years and has an urgent need for operation, content, and promotion talents with practical capabilities. The enterprise is the secondary initiator in this project, involved throughout.

3.2.3.3 Theoretical Foundation of the Project Design

The design theory of this cooperation project originates from Situated Learning Theory and Co-construction and Sharing Theory.

Situated Learning Theory emphasizes that learning should occur in authentic or simulated situations, where learners construct knowledge and abilities through participating in practical activities and social interaction (Yin, 2014). This theory provides the theoretical basis for the “practice-driven”teaching mode in this UII project, explaining the necessity for students to learn at the enterprise. It clarifies why students can master complex skills faster in real e-commerce operational environments and why teachers can acquire practical skills through shadowing, promoting "dual-qualified" teacher development.

Co-construction and Sharing Theory stems from collaborative governance and resource dependency perspectives, emphasizing that multiple stakeholders achieve common goals through resource integration, shared responsibility, and benefit sharing (Zeng, 2016). This theory helps understand the role interaction, resource complementarity, and outcome distribution mechanism between SZPU and Anran Wuyang Technology in UII, providing an analytical basis for the sustainability of UII.

3.2.3.4 UII Mechanism

Based on Situated Learning and Co-construction and Sharing theories, this case emphasizes the authenticity and practicality of internship training in its cooperation mechanism, requiring content to align with both theoretical foundations and business practice. Simultaneously, it emphasizes the joint participation and shared gains of all cooperating parties.

3.2.3.4.1 Creation of Authentic Situations and Setup of Learning Environment

According to Situated Learning Theory, an effective learning environment should closely resemble real work scenarios. This project embeds students directly into the actual operational system of the Anran Wuyang Company, enabling them to participate fully in real TikTok cross-border e-commerce operations. The company operates stores targeting multiple regions including the US, UK, and Southeast Asia, with diverse supply chain resources for products like cosmetics, jewelry, toys, etc. Students not only receive systematic theoretical instruction but also practice key tasks like product listing, short video content creation, live-streaming interaction, and data analysis in real business, thereby

substantially enhancing practical skills and professional literacy in authentic commercial contexts.

3.2.3.4.2 Iterative “Learning by Doing” Process

During the initial preparation of the training project, university and enterprise mentors jointly create training courses and task sheets, adopting a cyclic process of "theoretical knowledge training - real operation practice - data analysis review - re-practice", centered around real job competencies. For example, a typical responsibility of a TikTok cross-border e-commerce operator is shooting, editing, and posting short videos. The corresponding training course includes corresponding theory and practical teaching: short video shooting, editing, and posting. Student teams learn how to shoot short videos in the morning at the company, including shot selection, camera movement control, scriptwriting, etc., and practice in the afternoon. Students need to conceive shooting content and scripts themselves, planning and producing promotional videos for the company's products. Then they continue learning related theoretical knowledge about video posting techniques, such as optimal timing, titles, etc., to gain more traffic, clicks, likes, comments. Student teams can participate in review meetings based on their real operation data, guided by university teachers and enterprise mentors for video optimization or posting strategy adjustments. This process reflects "reflective practice" in situated learning. Through continuous trial, error, and optimization, students deepen their understanding of platform rules and market dynamics, progressing from operational practice to strategic thinking.

3.2.3.4.3 Resource Co-construction and Responsibility Sharing

The enterprise provides the learning/practice environment, store resources, product supply chain, and mentor team; the university provides funding, student organization, and teaching management support. Both parties jointly build an integrated "teaching - operation - assessment" platform. This resource complementarity model reduces the input pressure on any single party and enhances the project's sustainability. As mentioned, SZPU and Anran Wuyang have jointly conducted 5 sessions of TikTok cross-border e-commerce training.

3.2.3.4.4 Outcome Sharing and Benefit Distribution

The project has formed a clear outcome-sharing mechanism: students gain practical skills and employment opportunities; the university drives curriculum reform and faculty development; the enterprise gains talent reserve, economic benefits, and brand value enhancement. Additionally, the university pays a service fee to the enterprise for each session, reflecting reasonable compensation for the enterprise's human and resource costs incurred in the cooperation.

3.2.3.5 Project Implementation

The project adopts a “short semester”（小学期） intensive practice format, typically scheduled during summer or winter vacations. It selects participants from middle and

upper-year students of the cross-border e-commerce major. The implementation process mainly includes the following stages:

3.2.3.5.1 Dual-Mentor System and Team Formation

After project initiation and before training begins, SZPU and the enterprise assign teachers as university mentors and enterprise mentors respectively, forming a dual-mentor guidance team responsible for curriculum development.

University mentors provide teaching method training to enterprise mentors to standardize and enhance their teaching abilities. Simultaneously, university mentors are stationed at the enterprise during curriculum development to deepen their industry understanding. Enterprise mentors draft training outlines based on enterprise practice and discuss with university mentors to finalize teaching content.

Anran Wuyang focuses on product transactions and brand promotion on TikTok via short videos or live-streaming. Therefore, the core curriculum of this project includes five parts: network environment setup, product selection and listing, product promotion short video shooting, live-streaming sales techniques, and operation data analysis. Each part covers both theory and practice, collectively constituting the entire TikTok cross-border e-commerce operation process.

Figure 3-16: Practical Session - Trainee students clarifying group tasks under enterprise mentor guidance

"Our training content is packed with practical insights, all derived from the company's daily operational activities. We believe students can basically directly join any cross-border e-commerce enterprise's operation position after serious study."

- CEO of Anran Wuyang

3.2.3.5.2 Combined Training and Practice with Job Rotation

During the two-week training, students go to the company for learning and practice each weekday. They learn required job skills and immediately apply them. For example: students receive theoretical training on short video sales in the morning, and can freely choose product categories for shooting in the afternoon, submitting videos to university and enterprise mentors for review, receiving feedback and making revisions. Upon

approval, videos can be uploaded to the real TikTok account operated by the company to observe real feedback. Currently, the highest demand in TikTok e-commerce is for operation and live-streaming positions, which are the student internship assignments.

Figure 3-17: Practical Session - Trainee students conducting theoretical learning and key point instruction

Figure 3-18: Practical Session - Trainee students conducting group product shooting in indoor/outdoor scenes

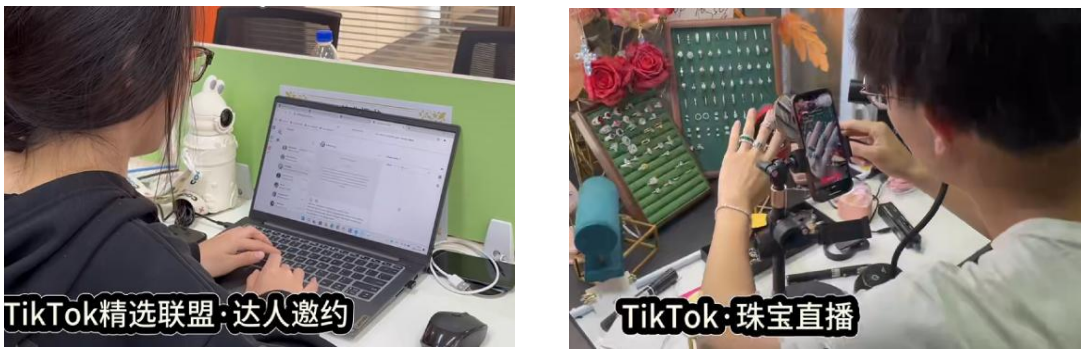

Figure 3-19: Practical Session - Trainee students conducting foreign language live-streaming and Key Opinion Leader (KOL) Business Development (BD)

3.2.3.5.3 Data-Driven Review and Iteration

Operation review meetings are held every other day. Students can adjust and optimize strategies based on real transaction and traffic data from the backend, with university and

enterprise mentors providing improvement suggestions simultaneously. University mentors also collect typical cases and common issues, transforming them into classroom teaching materials, achieving "practice feeding back into teaching".

Figure 3-20: Practical Session - Trainee students conducting operation review with enterprise mentors

3.2.3.5.4 Outcome Evaluation and Employment Matching

After the project concludes, the university and enterprise jointly conduct outcome presentations and comprehensive assessments for students. All participating students receive teaching practice credits to meet graduation requirements. Outstanding performers can receive priority consideration for formal recruitment by the enterprise or referrals to partner enterprises for employment.

Figure 3-21: University leadership observing on-site presentation of student training outcomes

3.2.4 Findings and Discussion

3.2.4.1 Outcomes of the Project

3.2.4.1.1 Students: Enhanced Capabilities and Employment Performance

Participating students generally achieved a role transformation from “learning knowledge” to “doing business”. Statistics show that during the project, over 300 short videos were created cumulatively, with the highest view count exceeding 500,000; over 80 live-streaming sessions were conducted, although GMV did not see significant growth due to

the short training duration. At project end, 16 students started formal internships at Anran Wuyang, and 2 students formally joined the company after comparing other offers.

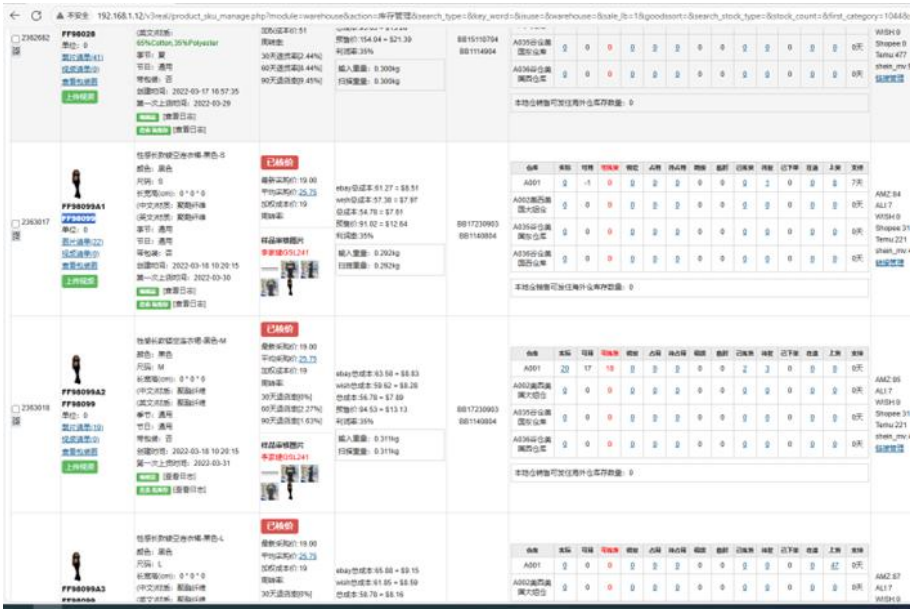

Figure 3-22: TikTok backend data used by trainee students during practice

"First, I personally really like the TikTok platform. I enjoy shooting short videos, and the industry has a high ceiling. It also happens to be combined with cross-border e-commerce. Besides, compared with other internship units, I really like the peaceful and harmonious team and working atmosphere I felt during the internship."

- A graduate sharing her thoughts during job selection.

According to graduate data analysis, employment relevance and starting salary levels were significantly higher than those of peers who did not participate in the project. Meanwhile, students who underwent this training, possessing practical experience and real industry understanding, showed stronger entrepreneurial intention and confidence. The proportion of cross-border e-commerce major students starting businesses during studies or after graduation increased significantly.

Figure 3-23 Trainee students quickly employed in cross-border e-commerce enterprises after graduation

3.2.4.1.2 University: Advancement of Major Development and Teaching Reform

The project promoted continuous updates to the curriculum system and teaching resources. The university and enterprise jointly developed courses and teaching resources such as “Cross-border E-commerce B2C Operation”, “New Media Marketing”, and “Intercultural Communication”, integrating real operation data, success cases, and typical problems into daily teaching. Simultaneously, participating professional teachers enhanced their practical teaching and industry insight capabilities through full-process shadowing, strengthening the construction of the "dual-qualified" teacher team.

"I joined the university directly after my PhD without enterprise work experience. Through full shadowing, I now better understand real job responsibilities and work atmosphere, making my teaching closer to actual work scenarios."

- Interviewee Teacher 2

Additionally, university teachers gained enterprise practice experience and professional connections through shadowing internships, gaining better understanding of industry hotspots and frontiers, and a more comprehensive view of vocational teacher development.

"Participating in shadowing internships helped me expand my network, aiding my future work in promoting UII and university-enterprise cooperation. For example, when developing new enterprise resources, I feel more confident in communication. Also, obtaining shadowing internship opportunities helped me successfully obtain the dual-qualification certificate."

- Interviewee Teacher 3

3.2.4.1.3 Enterprise: Dual Gains in Economic and Talent Benefits

The enterprise established a stable talent pool through the project, effectively alleviating manpower shortages in positions like live-streaming operations and content creation. Furthermore, student teams, within the short two-week project cycle, participated in the entire TikTok e-commerce operation workflow, achieving the dual goals of talent cultivation and business growth. UII also became an important window for the enterprise to showcase innovation vitality and social responsibility, enhancing its brand image within universities and the industry.

"I believe the so-called entrepreneurial spirit must include the enterprise's contribution and assistance to society and others. The form doesn't matter, nor does the scale of return; what's important is having this mindset. Of course, a form beneficial to all parties is best; the ultimate goal is consistent."

- CEO of Anran Wuyang

Figure 3-24: Representatives from University, Association, and Enterprise attending the practice activity closing ceremony

3.2.4.1.4 Association: Enhanced Educational Visibility and Activity Expansion

Through participating in the cooperation project, especially acting as the intermediary connecting the university and enterprise, the Association perfectly realized its role in promoting UII. Furthermore, the Association and the School strengthened their collaboration, subsequently reaching continuous agreements in areas like external mentors, curriculum reform, textbook co-development, report publication, and student internships, expanding the scope of cooperation. For example, in talent cultivation, Association experts participated in cross-border e-commerce major training plan discussions; Association President Wang Xin was appointed as a guest professor, with industry experts entering classrooms to impart practical experience; in association events, the School organized teachers and students annually to participate in industry events like the Global Cross-border E-commerce Festival, jointly publishing industry talent reports and blueprints with the Association; the Association arranged teacher internships at its positions; more enterprises conducted various short semester cooperation based on their own and industry characteristics. The series of collaborations between the Association and the university/enterprise successfully expanded the Association's cooperation forms in UII and raised its visibility in the education sector.

Figure 3-25: Starting 2025, the university and association jointly launched large-scale concentrated internship projects involving all major students

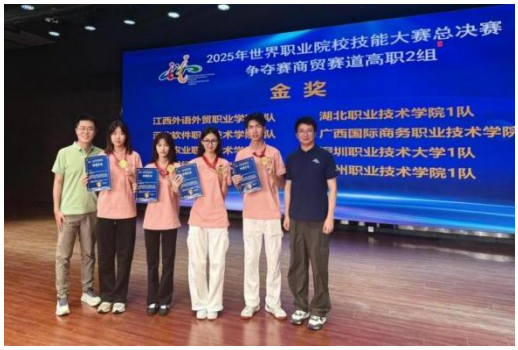

Figure 3-26: Students winning gold medals in national competitions for the cross-border e-commerce major under university-association co-cultivation

Figure 3-27: Under association coordination, university teachers and students visited Shenzhen TV stations for on-site observation and conducted short video production training

3.2.4.2 Cooperation Implementation

Behind the "University-Association-Enterprise" trinity UII pathway represented by this project, external foundations and internal motivations jointly facilitated the smooth development of cooperation.

3.2.4.2.1 External Factors

The cross-border e-commerce UII project between the School and Anran Wuyang officially started in 2023. Prior to this, there had been relevant contacts and preliminary activities, laying a good foundation for cooperation. At that time, Anran Wuyang was a member of the Association, relying on it for live-streaming base construction. The School, as a partner of the Association, visited the constructed live-streaming base, establishing initial contact. During this period, the School organized students interested in cross-border e-commerce to participate in Association activities, including: (1) Participating in the Shenzhen Merchants Bureau Young Entrepreneur Training Program, responsible for volunteer services hosting international guests; (2) Small-scale participation in the Cross-border E-commerce Festival organized by the Association; (3) Participation in short-term live-streaming projects by Anran Wuyang. After a series of preliminary activities, the School and Anran Wuyang gradually formed cooperation intentions.

3.2.4.2.2 Internal factors

The fundamental reason why the university and enterprise were ultimately able to reach cooperation lies in the complementary potential between their talent cultivation and human resource needs. From the university's perspective, traditional teaching faces three major practical dilemmas: first, the teaching environment cannot access overseas e-commerce platforms, leaving practical training confined to software simulations; second, the lack of authentically operating stores and product systems makes it difficult for students to experience the complete chain from product selection to after-sales service; third, graduates' practical capabilities are insufficient, and their employability needs improvement. Therefore, the university urgently needs to introduce real projects into teaching through deep cooperation with enterprises, shortening students' adaptation period from the classroom to the workplace.

For the enterprise, cooperation also holds multidimensional value: first, through early involvement in talent cultivation, the enterprise can significantly reduce recruitment and training costs and precisely identify potential employees; second, the young perspectives and creative abilities brought by student teams help stimulate the enterprise's operational vitality; third, real stores operated by students can directly contribute to sales revenue, forming a parallel development model of "talent incubation and business growth"; fourth, university-enterprise cooperation also helps enhance the enterprise's brand influence and sense of social responsibility.

3.2.4.2.3 Cross-border E-commerce Industry Characteristics

University-Association-Enterprise, the trinity. The internal logic of this cooperation pathway lies in the fact that the industrial characteristics of cross-border e-commerce determine the characteristics of current UII models in this industry: small batch sizes, multiple sessions, flexibly conducted according to different business types of different enterprises, with relatively low cooperation costs, etc. It should be noted that these UII model characteristics almost perfectly replicate the characteristics of the cross-border e-commerce industry or business itself: small batch sizes, multiple sessions, flexible and rapid response, low-cost trial and error, etc.

However, these industry characteristics also reflect that the cooperation possibilities and enthusiasm of leading enterprises are not as high as in other key industries. The main enterprises with cooperation willingness are largely SMEs, meaning the difficulty of information acquisition and matching between universities and enterprises is higher, and cooperation scale and depth are generally smaller and shallower. If referencing traditional large-scale, high-standard cooperation approaches, the cost and complexity for universities and enterprises to reach cooperation would be high, leading to imbalance in the input-output of UII. Therefore, it can be said that the industry characteristics of cross-border e-commerce determine the pathway characteristics of its UII.

3.2.4.3 Construction of “MPEA” Model

The UII between SZPU and Anran Wuyang provides detailed cooperation processes, project design mechanisms, and teaching implementation processes. Based on this, this paper summarizes and constructs an “MPEA” UII process applicable to cross-border e-commerce and related majors. As shown in Figure 4.13, this process emphasizes that UII should be a collaborative effort among university, enterprise, and association, and the linkage between industry and education is a continuous, cyclically improving, and dynamically optimizing systematic process:

M (Matching Stage): Industry-Education Integration refers to the convergence of industry and education, with its core lying in the alignment of needs and the assessment of resources between enterprises and universities. Both parties must reach consensus on strategic objectives, resource conditions, talent standards, and other aspects to establish a foundation for cooperation. However, given that the cross-border e-commerce industry is predominantly composed of small and medium-sized enterprises, the acquisition of information and the alignment of resources between universities and enterprises become more challenging. In this context, industry associations play a crucial role in facilitating resource connections. Throughout the practice of Industry-Education Integration, the role of associations as connectors and endorsers should be fully recognized. At the same time, considering the characteristics of the cross-border e-commerce industry, universities need not emphasize collaboration solely with leading enterprises in the process of implementing Industry-Education Integration. The matching pathway follows the sequence of “University-Association-Enterprise”.

P (Preparation Stage): The university and enterprise should jointly complete preparation work like cooperation plan design, co-building mentor teams, and forming student teams. In this stage, the enterprise prepares sufficient teaching venues, personnel, equipment, insurance, etc.; the university completes activity promotion, personnel recruitment and screening, pre-training education; both parties jointly finalize training course content, develop training regulations, and prepare for process management.

E (Execution Stage): This is the project and teaching implementation process, emphasizing "learning by doing", where students complete real tasks under dual-mentor guidance. This stage includes both student training in real scenarios and university teacher shadowing, with training focus on the former.

A (Assessment Stage): Establish a multi-dimensional comprehensive evaluation system covering student growth, teaching improvement, and economic benefits. Use assessment results to feed back into the matching and preparation stages of the next cycle, driving continuous project improvement.

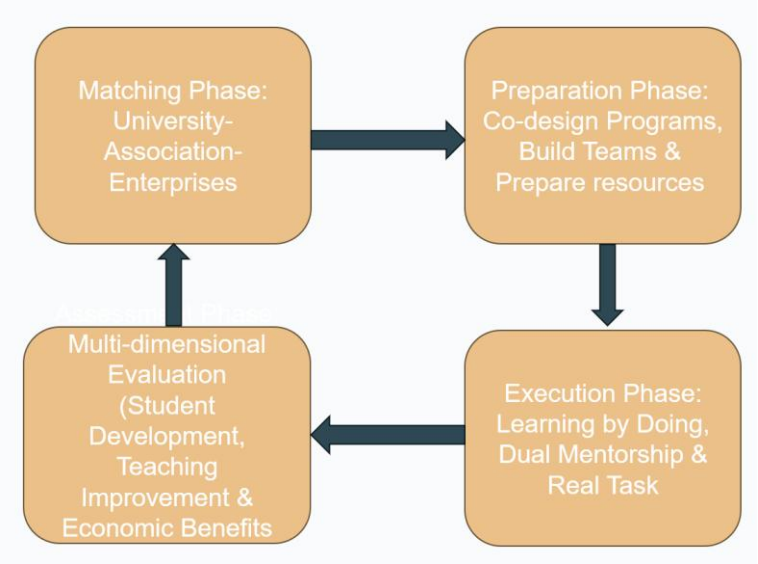

Figure 3-28: MPEA Model: Continuous Cycle and Dynamic Optimization System

This process emphasizes that UII is not a linear process but a closed-loop system based on assessment feedback, continuously cycling and spiraling upward.

3.2.4.4 Evaluation of the Project

While achieving significant results, this cooperation project also revealed some noteworthy issues.

3.2.4.4.1 Enterprise's Economic Benefits Not Fully Realized

Since students are only involved for a two-week period, although they can produce some high-quality short video content, their participation in enterprise work ceases after the training ends. This makes it difficult to translate the early-stage investment in the student teams into long-term benefits for the enterprise, resulting in a certain degree of resource wastage for the company. Although the enterprise later invited outstanding students to continue participating in content creation in the form of internships, due to the heavy academic workload of the students and the insufficient constraints and incentives provided by the enterprise, the potential economic benefits were not further realized.

"After each project round, promising talents can be identified. They could later participate in video production, etc. However, because the enterprise's influence on students is limited, and some students' self-drive is also lacking, it didn't lead to greater economic benefits subsequently."

- Interviewee Enterprise Mentor 1

In the future, if both parties can jointly improve incentive mechanisms, such as incorporating project participation into the credit assessment system, it could help enhance

students' sense of responsibility and learning outcomes on one hand, and create more sustainable benefits for the enterprise on the other.

3.2.4.4.2 Project Coverage Needs Expansion

Current project implementation is still constrained by supporting resources, especially noticeable shortcomings in network support, live-streaming equipment, and training venues. Previously, due to the university's lack of professional live-streaming training environments, students needed to go to the enterprise for centralized training and practice, not only incurring high coordination costs and time constraints but also limiting project coverage to only a few outstanding students, lacking inclusiveness. Many students missed valuable practical opportunities.

"Currently, participation slots are first-come-first-served. Many students couldn't participate due to limited information channels or being too late. Many expressed regrets about missing the project."

- Interviewee Teacher 1

Now, with the university's live-streaming room built and equipped with professional gear, hardware foundation for on-campus project implementation is provided. Subsequently, if further cooperation with enterprises can optimize on-campus network setups, introduce enterprise-using platforms and data resources, it will effectively break spatial and resource constraints. Then, students can directly participate in real enterprise projects on campus, significantly reducing operational costs, benefiting more students, truly achieving "wide coverage, deep practice" teaching goals, and enhancing the scale benefits and social value of UII.

3.2.4.4.3 Student Professional Attitude and Responsibility Awareness Need Strengthened Guidance

This project is directly linked to real enterprise-operated accounts and stores. Every student action is closely tied to the enterprise's brand image, customer relationships, and commercial interests. If students lack sufficient professional attitude and responsibility, leading to arbitrarily content posting, non-standard operational procedures, inappropriate customer interaction, etc., it could not only cause direct economic and reputational losses for the enterprise but also seriously impact the trust foundation between university and enterprise, constraining the sustainable development of the cooperation model. Interviewee Teacher 3, having observed multiple sessions, stated that during project training, almost every session had a very few students who were unengaged, inactive, or careless, affecting training atmosphere, the enterprise's evaluation of the university and students, and wasting limited practical opportunities.

Therefore, it is recommended that the university and the enterprise jointly construct a professional literacy cultivation mechanism that runs throughout the project in their

subsequent cooperation: (1) Pre-job Training and Responsibility Notification: Before the project commences, enterprise mentors and university teachers should jointly conduct special training to clarify job responsibilities, operational red lines, and the severity of consequences. Through real-case warnings, students' risk awareness should be strengthened. (2) Process Supervision and Instant Feedback: Implement a dual-track guidance system of “enterprise mentor + university mentor”. Establish strict review procedures for key operational steps, create instant communication and feedback channels, and promptly correct inappropriate behaviors. (3) Integration of Professional Ethics Courses: It is suggested to add modules such as business ethics, new media operation norms, and customer service etiquette to relevant courses, extending professional education from project practice to daily teaching to achieve normalized cultivation. (4) Combination of Evaluation and Incentives: Incorporate professional responsibility into the project assessment system. Publicly recognize or provide incentives such as internship recommendations to students who demonstrate meticulousness and responsible attitudes, setting positive examples and fostering a culture that values professional ethics.

3.2.5 Implications

3.2.5.1 Practical Implications

3.2.5.1.1 “University-Association-Enterprise” Model Can Effectively Connect SMEs, Reduce Cooperation Costs, Improve Matching Efficiency

The “University- Association-Enterprise” trinity cooperation pathway validated in this case is a precisely designed solution tailored to the characteristics of the cross-border e-commerce industry, such as the predominance of small and medium-sized enterprises, flexible and rapidly changing demands, and highly fragmented information. Industry associations (such as the Shenzhen Cross-border E-commerce Association) play an irreplaceable role as a “super connector” and “credit endorser”. As described in the earlier case background, if universities were to directly engage with a vast number of SMEs, they would face challenges such as high search costs, difficulty in establishing trust, and diseconomies of scale in cooperation. However, leveraging its extensive member network and industry credibility, the association can efficiently aggregate and screen enterprises with genuine willingness and capability for cooperation, significantly reducing the search and negotiation costs for both universities and enterprises. For instance, this cooperation was precisely facilitated through the matchmaking and ongoing coordination by the Association. This model not only enabled in-depth collaboration with “Anran Wuyang Technology” but also established an open cooperative ecosystem.

Looking ahead, this model can be further institutionalized. Universities can leverage association platforms to establish “SME cooperation project pools”, utilizing the short-semester system to flexibly match the short-term, specialized, and practical needs of different enterprises. Associations, in turn, can systematically feed the latest industry

standards, skill certifications, and talent demands back into university curriculum systems, jointly developing micro-certification programs. This ensures that talent cultivation iterates in sync with industry requirements. This lightweight, networked, and platform-based cooperation pathway provides a highly operational template for conducting sustainable and replicable industry-education integration with a broad range of SMEs. This pathway is also applicable to other majors with similar characteristics.

3.2.5.1.2 "Real Project-Driven + Iterative Learning" Teaching Mode Significantly Enhances Students' Work Competencies and Innovative Thinking

The core pedagogical innovation of this case lies in introducing real enterprise-operated TikTok stores and their complete operational chains into teaching, constructing a closed-loop iterative learning process of "theoretical training—practical operation—data analysis and review—strategy optimization". This model addresses the fundamental drawbacks of traditional practical training, such as "simulation software being detached from real markets" and "case studies lagging behind industry changes". As mentioned, within two weeks, students are required to complete full-process tasks ranging from product selection and short video creation to live-streaming interaction and data analysis. Their work is directly tested in the real global market. This high-intensity, high-authenticity practical experience "forces" students to quickly transition from learners to responsible agents. They not only master platform operations and management skills but also develop deeper competencies such as market sensitivity, understanding of cross-cultural audiences, data-driven decision-making abilities, and adaptability to unexpected situations. The review mechanism further guides students from mere operation to strategic thinking, enabling them to understand the business logic behind each action. Practice has proven that students cultivated under this teaching model demonstrate significantly enhanced employment competitiveness, entrepreneurial intention, and initial job adaptation speed. This provides micro-level best practices for how vocational education can deeply integrate work processes with learning processes and holds broad value for promotion.

3.2.5.1.3 Dual-Mentor System and Teacher Enterprise Shadowing Promote "Dual Qualification" Teacher Development and Continuous Curriculum Updates

The dual-mentor system serves as a key guarantee for the high-quality implementation of this project. For university teachers, deep enterprise shadowing represents a profound process of professional reshaping. It enables teachers to break through the limitations of theoretical teaching, personally engaging with the latest technologies, workflows, and real challenges of frontline positions. Consequently, they can feed vibrant industry practices, cutting-edge cases, and real data back into classroom teaching, driving the dynamic updating of course content such as "Cross-Border E-commerce B2C Operations", "New Media Marketing", and "Intercultural Communication". Simultaneously, by participating in enterprise technical discussions and operational reviews, teachers enhance their own industry insight and practical problem-solving abilities, accelerating their transformation

into "dual-qualified teachers." For enterprise mentors, their experience becomes systematized and pedagogically refined through involvement in curriculum design and teaching implementation, elevating their awareness and capability in knowledge transmission and talent cultivation. This two-way empowerment mechanism constructs a continuously flowing “knowledge-skills-experience” exchange ecosystem. It enables the university's curriculum system to closely align with the pulse of industrial development, addresses the chronic issue of teaching content lagging behind industry advancements, and provides solid talent and intellectual support for the sustainability of industry-education integration.

3.2.5.2 Institution and Management Implications

3.2.5.2.1 Leadership Dispute: Who Holds the Reins

University-enterprise cooperation projects with leading or large enterprises often face a question: who holds the initiative or leadership? This leads to two possible scenarios. First, the leading enterprise may demand dominant control over the cooperation project or jointly-established college. Since major activities in such cooperation often occur on campus, especially projects involving large-scale, wide-ranging student participation, the enterprise's ideas may fail to be implemented within the university setting. Alternatively, conflicts may arise between the enterprise's industry practices and the university's environment, order, and systems, leading to cooperation breakdown or stagnation. Second, large enterprises may not heavily rely on university-enterprise cooperation projects, or due to complex hierarchies and numerous business departments, such projects may not hold high importance within the large enterprise. The enterprise may lack full commitment, and cooperation often remains superficial—limited to visits, study tours, or lectures. Over time, the university may lose interest in cooperation.

3.2.5.2.2 Leadership Change: Potential Termination of the Cooperation

A common phenomenon in political and business circles is that once leadership changes, the handover of affairs between the old and new leaders is prone to disruption or complete overhaul. This frequently occurs abroad and is also common in China. University-enterprise cooperation projects typically have agreements lasting not very briefly, commonly between two to five years. Within this timeframe, the probability of changes in enterprise leadership is significant. When leadership changes, whether due to the new leader's need to familiarize themselves with the business, considerations of cooperation costs and benefits, or simply a desire to overturn the predecessor's approach, the established tacit understanding of the original project is often interrupted, and substantive termination sometimes occurs.

Countermeasures for the above two situations include: first, seeking to establish a tripartite collaborative mechanism involving “University-Association-Enterprise”, as proposed by

Xu (2025); second, exploring reforms in enterprise management mechanisms to weaken or change the habitual practice of business changes following leadership transitions.

3.2.5.2.3 Cultural Identity and Social Trust Can Be Utilized to Deepen Collaboration

China's social system, under a unified framework, strives to balance the rights of various parties as much as possible. Consequently, personnel and structures exhibit strong compatibility, mobility, and interchangeability. Many vocational education teachers have work experience in enterprises, government, or institutions. These experiences provide significant advantages in terms of professional cognition, skill mastery, and industry resources for their vocational education in corresponding fields.

On the other hand, traditional Chinese culture, represented by Confucianism and its modern interpretations, endows teachers with a sacred and lofty social status and public perception. This enables teachers to very smoothly and favorably connect various stakeholders including the university, association, enterprise, and even the government. Simultaneously, bearing the responsibility of educating students internally and spontaneously drives teachers to be willing to assist students in their personal growth and social adaptation, with Industry-Education Integration being one important form of this.

Generally, in the West, the distribution of rights among enterprises, service/education institutions, politicians, and government departments is decentralized, emphasizing the independence and self-interest of each entity. In contrast, various entities in Chinese society often place greater emphasis on interconnections. They are accustomed to viewing different entities as part of a system and are willing to think and act from the perspective of "building a collaborative platform and forming a joint framework". When reflected in Industry-Education Integration, this involves fully considering the interests and stakes among all parties, seeking the greatest common denominator, and designing and implementing cooperation plans by seeking common ground while reserving differences.

3.2.5.3 Theoretical Implications

3.2.5.3.1 The "MPEA" Model Provides a Feasible Cooperation Project Design Framework

The "Matching-Preparation-Execution-Assessment" (MPEA) cyclic model, distilled from practice in this study, represents a significant theoretical and practical contribution to translating Industry-Education Integration from macro-policy advocacy to micro-project implementation. The MPEA model deconstructs the complex university-enterprise cooperation process into four clear, controllable, and logically coherent stages, emphasizing its non-linear, cyclic nature. In the "Matching"stage, it highlights the critical role of industry associations in reducing information asymmetry and connecting resources. The "Preparation" stage underscores the necessity for universities and enterprises to jointly discuss plans and co-build resources. The "Execution" stage establishes the core position of authentic contexts and the dual-mentor system. The "Assessment" stage establishes a

multi-dimensional evaluation system covering student growth, teaching improvement, and economic benefits, feeding the results back into the next cycle to drive continuous project improvement. This framework not only successfully explains the operational logic behind this case's success but also, due to its systematic and process-oriented nature, provides a transplantable, operational project management blueprint for other institutions-especially those targeting SME clusters-to conduct Industry-Education Integration, effectively reducing the design and trial-and-error costs of cooperation.

3.2.5.3.2 The Findings Resonates with Situated Learning and Co-construction/Sharing Theories at the Micro-Teaching Level

This case provides vivid and detailed empirical support for the application of Situated Learning Theory and Co-construction and Sharing Theory in the field of vocational education. First, the project design fully adheres to the core principles of Situated Learning Theory: embedding learning into the real community of practice of TikTok cross-border e-commerce operations. Guided by enterprise mentors, students gradually deepen their engagement in core tasks, constructing their knowledge, skills, and professional identity through completing authentic activities such as product promotion and customer interaction. This explains, from the perspective of learning science, why short-term hands-on training can yield teaching effectiveness far exceeding that of traditional simulation-based training. Second, the entire case process profoundly reflects the connotations of Co-construction and Sharing Theory. The university and enterprise are not merely exchanging resources. Instead, through joint investment-the enterprise provides platforms and scenarios, the university provides human resources and management. shared responsibility-sharing teaching and management responsibilities, and shared outcomes-students gain competence, the university gains curriculum innovation, the enterprise gains talent and benefits, they form a value co-creation symbiotic system. This reveals, from an organizational cooperation theory perspective, that only by establishing a governance mechanism based on deep mutual trust and compatibility of interests can Industry-Education Integration break through the shallow collaboration of "cooperation without integration" and move towards sustainable deep integration. This case indicates that these two theories are important theoretical lenses for guiding and evaluating the effectiveness of Industry-Education Integration practices.

3.2.6 Conclusion

Focusing on the typical characteristics of the cross-border e-commerce industry-the clustering of SMEs and flexible, rapidly changing demands-this study, through an in-depth cooperation case between Shenzhen Polytechnic University and Anran Wuyang Technology, systematically explores and validates a new pathway for Industry-Education Integration centered on the "University-Association-Enterprise" trinity. The innovation of this pathway is mainly reflected in three aspects. First, it constructs an association-led university-enterprise connection mechanism, effectively resolving the practical dilemma

of information asymmetry and high cooperation costs between SMEs and universities, achieving lightweight and efficient matching of Industry-Education Integration resources. Second, it designs a teaching model characterized by “real project-driven + iterative learning” comprehensively embedding real enterprise operational scenarios and business processes into teaching. Through the closed-loop training of “theory-practice-review-optimization”, it practically addresses the pain point of the disconnection between theory and practice in traditional talent cultivation. Third, it extracts the standardized four-stage “MPEA” (Matching-Preparation-Execution-Assessment) process, providing an operational and replicable project management framework for university-enterprise cooperation in cross-border e-commerce and related majors.

The case practice demonstrates that the “University-Association-Enterprise” collaborative education model not only significantly enhances students' comprehensive professional abilities and employment quality but also promotes the dynamic updating of university curriculum systems and the construction of "dual-qualified" teacher teams. Simultaneously, it delivers high-quality skilled talents that meet enterprise needs and brings actual business value to enterprises, forming a favorable ecosystem of multi-party win-win among students, the university, the enterprise, and the association. This exploration provides a regional practice example with reference value for Industry-Education Integration in vocational education within the Guangdong-Hong Kong-Macao Greater Bay Area and across the nation. It also offers beneficial ideas for how vocational education can more closely align with industrial transformation and serve high-quality economic development under new circumstances. In the future, based on this model, further expansion in digital platform support, cross-regional collaborative mechanisms, and long-term evaluation systems can be pursued to continuously promote Industry-Education Integration to go deeper and become more substantive, empowering the modernization of vocational education and industrial transformation and upgrading.

3.3 Case Study of UII in English Studies in SZPU: An Evaluation of a Long-Standing University-Industry Integration in Shenzhen's Exhibition Industry based on the Business English Major

3.3.1 Introduction

Hosting 246 commercial exhibitions in 2023 (Shenzhen Municipal Bureau of Culture, Sports and Tourism, 2024), Shenzhen has successfully embraced the role as China’s Exhibition capital, leading China’s exhibition industry. These exhibitions cover a wide range of themes such as digital services, advanced technologies, and manufacturing, signifying Shenzhen’s role in China’s advancement of economy (China Council for the Promotion of International Trade [hereafter CCPIT], 2023). In response to the prosperity in the industry of exhibition, how to cultivate more competent talents who meet with the

demands from the exhibition industry has been the central concern among educators who are responsible for exhibition talents' education under the vocational education system.

One of the key impetuses that pushes forward a dynamic talents' development system is the incorporation of the University-Industry Integration mechanism. In the field of the industry of exhibition, the collaboration between Department of Business English at Shenzhen Polytechnic University (hereafter the Department) and the Shenzhen Furniture Association (SZFA) has laid a set up a model of collaboration.

The Department of Business English at Shenzhen Polytechnic University was established in 1994. It is one of the university's oldest, largest, and strongest department with its longest history among other vocational institutes in China. Over the past three decades, the department has achieved major developmental milestones which include the first National Key Construction Programs of Model Institutions, a National-level Excellent Teaching Team, a Backbone Program in the National Vocational Education Innovation Action Plan, a Pilot Program for Teaching Reform in Guangdong Province's Higher Vocational Education, and one of the first Class-I Brand Programs in Vocational Education in Guangdong Province. Through these initiatives, the Department has further refined its talent cultivation system, implemented education reformation. It has accumulated extensive collaborations and achieved remarkable results in University Industry Integration with different companies and associations among which the collaboration between the Shenzhen Furniture Association worth mentioning.

The Shenzhen Furniture Association, established in 1986. 458 members make up the association covering major industry sectors including furniture manufacturers, raw materials suppliers, producers of furniture accessories, furniture retailers, furniture stores, interior design firms, furniture lighting companies, and woodworking machinery manufacturers. The Shenzhen Furniture Association (SZFA) serves as a market-oriented service provider for industry related enterprises, striving to become the core service organization of China's furniture industry.

Originated in 2003, SFIA approached the Department for the pragmatic needs arising from the industry of Furniture industry. Driven by the operational requirements for the Shenzhen International Furniture Fair in 2003, SZFA placed their initial request for students interns who to the physical booths such as clients' receptions, product demonstration, and inquiry responses etc. This successful internship marked the beginning of the collaboration which also leads to a long-standing yearly partnership between the Department and the SZFA.

3.3.1.1 Journey of Partnership

The foundational years (2003 - 2013) have been characterized as the period of "Germination Period", a period marking the establishment of collaboration. The first key outcome within this period is the establishment of a reliable resource for student internships in Shenzhen's exhibition industry. Students' interns have raised from an initial 100 to over

600 suggesting a “three wins” philosophy: the university has been benefited for the increase of employment rate, the industry has been benefited for well-trained talents and the students have been benefited for being engaged in the professional landscape before their graduation. Below is a group photo for the student’s internship at Shenzhen International Furniture in 2007.

Figure 3-29: Group photo for the student’s internship at Shenzhen International Furniture in 2007

Another pivotal and substantial achievement during this period was the co-development of the “Exhibition English” course between the Department and SZFA. This course which was designed based on authentic industry roles such as exhibition organizer and exhibition has been structured according to the workflows in the real-world scenario across the three exhibition phases: the pre-preparation period, the on-site internship period and the post-exhibition phases. This course blended both on-campus theoretical knowledge and simulated training and the mandatory off-campus internships at the yearly Shenzhen International Furniture Fair. It has established a pedagogical framework, exemplifying the University-Industry Integration in the field of exhibition industry. This foundational work led to a milestone recognition. In 2008, the course of Exhibition English was awarded the National Elite Course for its innovative course structure, practical course content, and its integration of experts from both the academia and the industry. The success of the partnership was further accelerated with the publication of the national-level textbook “Exhibition English” in 2012, marking itself as part of the China’s “Twelfth Five-Year Plan” planning series in the field of Education. Below is a preface of that textbook.

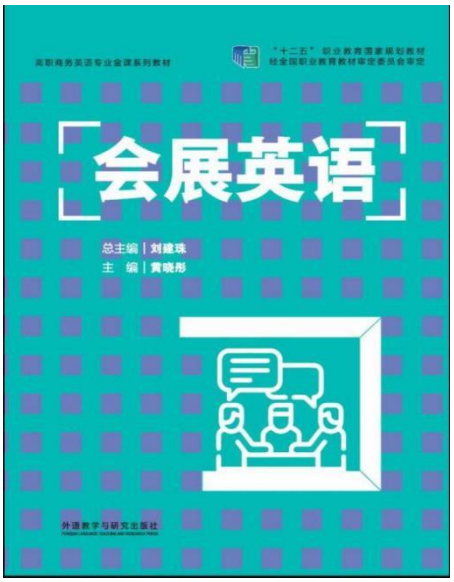

Figure 3-30: The preface of the Textbook: Exhibition English

Followed by the national level course and textbook, the University-Industry Integration between the Department and the SZFA led to the Guangdong Provincial Undergraduate Practical Teaching Base (2013) and the Shenzhen Municipal Off-Campus Public Training Base for Vocational Colleges (2014) highlighting the cooperation to be funded by the government for the sustainable future development. Below is an inauguration photo of the establishment of the Training Base between the Department and the SZFA.

Figure 3-31: The inauguration photo of the Training Base between the Department and the SZFA in 2013

The collaboration has matured into a model named as “Dual-Subject Education System”. This model is presented in Figure 3-32.

Figure 3-32: Dual-Subject Education System

This model has theorized University-Industry Integration between the Department and the SZFA, marking the collaboration entering a phase of excellence (2013 to present). It displays a systematic pedagogical framework through which the exhibition professionals are cultivated. To be more specific, this model is a dual-track progression integrating explicit theoretical learning with implicit practical skills acquisition. At the foundation stage, two core learning outcomes are identified, "the Accumulation of Explicit Theoretical Knowledge and "the Acquisition and Construction of Tacit Practical Knowledge and Skills". In order to achieve the outcomes, two on-campus courses: "Exhibition English 1" and "Exhibition English 2" were offered to students with the first one delivered at the first semester in their second year at the university while the second one delivered at their second semester in their second year.

These courses unfold into two initial phases: "Theoretical Knowledge Learning and Simulated Skills Practice", representing the on-campus training content. The model then incorporates the transition from theoretical learning and simulation to off-campus real world training, termed as "On-the-Job Training" and "Exhibition Practice" such as the yearly Shenzhen International Furniture Fair. The last phase in Figure One is the "Graduation Post Internship" which completes the pathway for students from academic study to professionalism in the field of the industry of exhibition. Guided by this dual-track model, students undertaking this course have been placed into a "Five Reals" training environment with "Five Reals" representing: real problems from the industry, real experiences that students will have, real relationships between the students and the stakeholders, real projects in the industry and real scenarios that will happen in the job market.

With the thriving of the industry of exhibition and the development of the University and Industry Integration, the collaboration between the Department and the SZFA expanded to

include a broader group of stakeholders such as other universities, different enterprises in industry chain of Meetings, Incentives, Conferences and Exhibitions. There are nearly 600 students participating in the Shenzhen International Furniture Fair annually, with a total of approximately 7,000 students over two decades.

This solid cooperation has also granted SZFA with confidence in the continuous investment onto its long-term partnership with the Department. An annual scholarship in the amount of RMB 200,000 has been set up to reward outstanding students and faculty during the collaboration.

During the excellence period, the "Exhibition English" course was upgraded to a National Elite Resource-Sharing Course in 2013 and was re-certified as a Shenzhen Polytechnic University "Golden Course" (First-Class Course) in 2022. The partnership between the Department and the SZFA has also been credited as a "Shenzhen Style" model for university-industry collaboration. This model is presented in Figure 3-33.

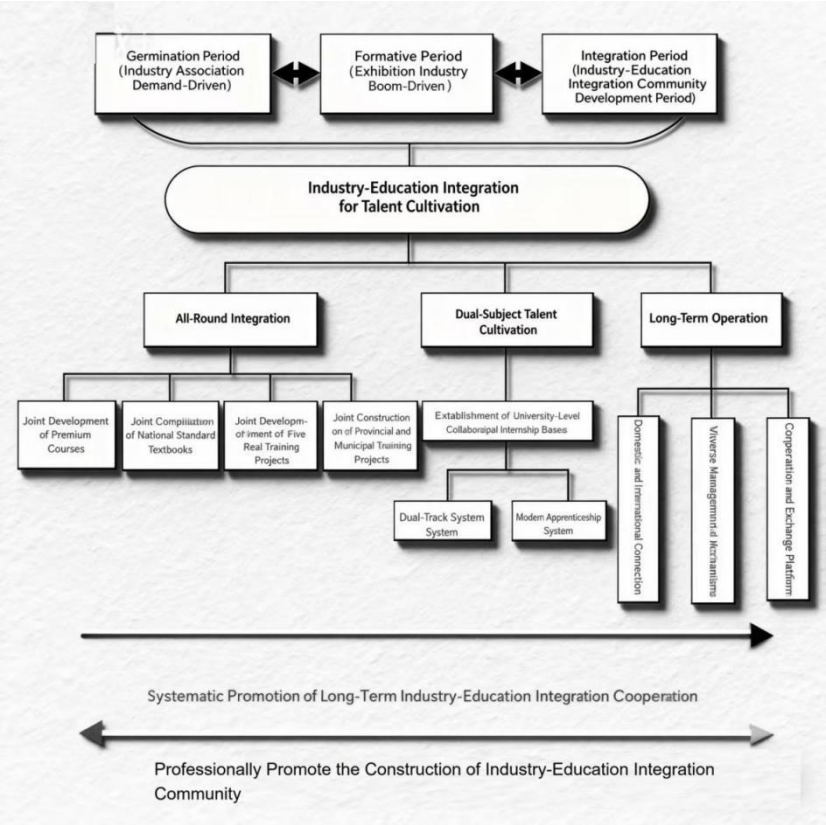

Figure 3-33: The talent development model co-developed by SZFA and Department of Business English for their two-decade collaboration

Figure 3-33 presented a structured, three-stage model for cultivating talent through University-Education Integration. It starts with a Germination Period driven by industry association needs, evolves through a Formative Period supported by the development of the industry and later developed into an Integration Period with community development as its focus. The central theme of this model is scaffolded by three pillars: All-Round

Integration (e.g., co-developing courses and training projects), Dual-Subject Talent Cultivation (e.g., establishing internship bases and apprenticeship systems), and mechanisms for Long-Term Operation. The ultimate purpose of developing this model are the systematic promotion of sustained collaboration and the professional construction of a university-education integration community between the Department of Business English and the Shenzhen Furniture Association for their sustainable cultivation of exhibition talents.

However, since the rapid development of technology such digitalization, Artificial Intelligence (hereafter AI), and big data technology, the industry of exhibition are faced with huge challenges to the collaboration between the Department and the SZFA. Referring to a survey by the research team, one interviewee who has been practicing in the exhibition industry for over 20 years stated that "We [The senior management team in exhibition] don't just need students who can set up booths—we need those who can run virtual platforms, analyze attendee behaviors, and manage post-event engagement through CRM systems." This increased requirement on digital competence has posed a substantial challenge for educators, leading to a shift of education system to meet the needs poised by the industry nowadays.

In view of this context, vocational institutions have been positioned as the central impetus behind University-Industry Integration strategy, responsible for the continuous talent supply to meet the emerging and demanding needs from the industry. In response to the national strategy, several models emerged to trail the suitable practices for industry-education industry. In the field of exhibition industry, the long-standing collaboration and cooperation between the Shenzhen Furniture Association and Shenzhen Polytechnic University is renowned for its project-based nature and its real-world scenario, crowned with the National Outstanding Teaching Team and the course Exhibition English has been selected as the National Excellent Course. Although a list of noticeable competences such as booth construction, client negotiation and on-site management has been commanded by vocational students as their internal abilities, how can the University-Industry integration meet the digital literacy in today's exhibition industry requires both sides to refine their model of partnership.

We investigate the University-industry integration in Shenzhen's exhibition industry to evaluate whether this long-standing partnership is aligned with the current needs of the social development. Drawing on a qualitative analysis of 176 job postings from 2023–2025 from popular job-hunting websites in China, we attempt to unveil the up-to-date requirements from the industry of Exhibition and to evaluate whether the current industry-education integration model is still valid to meet these requirements.

3.3.2 Methodology

We adopt a mixed-methods design (Creswell & Plano Clark, 2017) approach wherein a data set of 176 job advertisements from Shenzhen's exhibition industry (2023-2025) has been analyzed quantitatively alongside qualitative content analysis of curriculum documents such as the syllabus and curriculum guideline composed collectively by the Shenzhen Polytechnic University and Shenzhen Furniture Association to interpret how the longstanding university-industry integration responds to the needs from the present job market.

Informed by the methods, two research questions were proposed: 1. What skills are now most frequently required in Shenzhen's exhibition market. 2. To what extent does the collaboration between the Department of Business English in Shenzhen Polytechnic University and the Shenzhen Furniture Association address these requirements.

176 job posts were extracted from the most famous and dominant online job-hunting websites relying on a Python-powered searching and data sourcing mechanism. structured queries were set up to target at the "exhibition and convention" sector followed by a data execution on a leading hiring website between January 2025 to December 2025. The time frame reflects the most current needs in the market. To facilitate the query searching, the data execution has been constrained to Shenzhen given its prominent role as a central hub for the exhibition industry. Relying on automated web data-sourcing functions empowered by Python, a list of relevant job was collected with category filtering and keyword matching. Each record was marked with extract standardized fields such as job title, salary range, company name, required work experience, educational qualifications, location details, posting date, full job description, and source URL. Incomplete records and duplicate entries and were deleted in the data-cleaning procedures, to guarantee the extracted list, reflect current trends and expectations within Shenzhen's exhibition industry. After data screening, the total number of job posts is 142.

As for the qualitative content analysis, the most updated curriculum guidelines (2023) of Exhibition English are analyzed to measure their degree of matching with result to be executed from the first quantitative approach. The curriculum guidelines are official documents comprised by both the Department and the SZFA. Teachers will follow strictly the knowledge structure and teaching procedure outlined in the curriculum guideline when they are educating the students.

The incorporation of a mixed-method of both quantitative analysis and qualitative content analysis, to what extent the existing University-Industry integration system reflects the authentic needs from the industry will be unveiled.

3.3.3 Findings and discussion

As has been mentioned in the previous section, the data sourcing with the assistance of Python has extracted 176 job postings from January 2025 to December 2025. After the elicitation of repeated posts and incomplete ones, 142 qualified entries compose the qualitative data set.

The pie chart in Figure 3-34 represents the distribution of most frequently required skill categories in the industry of exhibition in Shenzhen. Eight thematic were identified with each one reflecting most valued competence by employers.

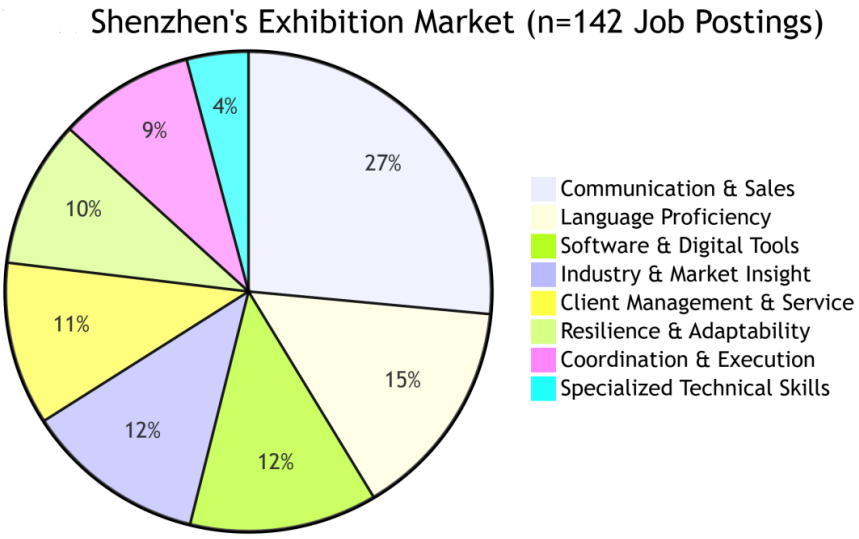

Figure 3-34: The distribution of most frequently required skill categories

Data in the pie chart is generated based on the criteria of how the mostly important information has been presented in each selected job post. The most commonly practiced standard in evaluating the prominence for each theme is to see which of the skills have been positioned at the top or the first entry in the job advertisement among skills. Among all the required skills, communication and sales remains the most valued skills followed by language proficiency. This situation suggests that interpersonal skills such as client development and sales are the most valued competency for candidates with language serving as the channel to facilitate this purpose. To move from the most frequently valued skills to the prevalence of each skill across all 142 job posts, their prevalence across the job market is visualized in Table 3-6 highlighting the relative importance of each category.

Table 3-6: Detailed breakdown for each skill category

Skill Category	Frequency (Count)	Prevalence (%)	Key Keywords & Descriptions
Communication & Sales	123	86.6%	Communication & Expression, Sales Techniques/Experience, Business Negotiation, Telemarketing, New Client Development, Client Visits, Outgoing Personality.
Language Proficiency	69	48.6%	Fluent English / CET-4/6, English Speaking, Written English, Proficiency in Other Languages (e.g., Russian, Arabic) is a plus.
Software & Digital Tools	58	40.8%	Proficiency in MS Office (Word/Excel/PowerPoint), CRM Systems, Social Media Marketing, Online Platform Operation, AI skills.
Industry & Market Insight	56	39.4%	Exhibition Industry Experience, Market Analysis, Competitor Analysis, International Trade Knowledge, Cross-border E-commerce, Specific Domain Knowledge (e.g., Energy Storage, Semiconductors).
Client Management & Service	51	35.9%	Account Maintenance, Service Mindset, Handling Customer Complaints, Needs Analysis, Relationship Nurturing.
Resilience & Adaptability	46	32.4%	High Stress Tolerance, Adaptability to Business Travel, Acceptance of High-Intensity Work, Fast-Paced Environment, Managing Contingencies.
Coordination & Execution	42	29.6%	Team Collaboration, Project Coordination, Execution Capability, Multi-tasking, On-site Event Management, Cross-departmental Cooperation.
Specialized Technical Skills	19	13.4%	Basic Photoshop/Illustrator, CAD, Project Management Software, Public Speaking/Guiding Skills, Driving License.

Table 3-6 provided the statistical data derived from the parameter of prevalence of each skill across the selected 142 job advertisements based on our Python empowered approach. In Shenzhen's exhibition industry, Communication & Sales as central core skills have been required explicitly in 86.6% of the job advertisements (123 counts) indicating that the most fundamental skills such as communication and negotiation, new client development and Sales Techniques are the mostly wanted skills by employers. Another crucial skill is the Language Proficiency (English in particular). Newly half of the advertisements (48.6%, 69 counts) have highlighted the importance of English, fluency in English with certified proof

such as certificates in English will increase the chances to be enrolled. Proficiency in Software & Digital Tools has now been constantly mentioned by employers with 40.8% of the advertisement set up a clear requirement on their future candidates to be able to operate CRM systems, Online Marketing Platform and even be able to use AI software. This demand in more capable of operating software and digital tools is aligned with the development of technology and digitalization emerging in recent five years. Furthermore, candidates with the following competence: Industry & Market Insight (39.4%), client management & service (35.9%), Resilience & Adaptability (32.4%), andCoordination & Execution (29.6%) echoes with the nature of the industry of exhibition that is a project-based industry where professional should be able to work under pressure meanwhile be able to skillfully deal with the client.

The data in Table One confirms that the exhibition industry seeks talents with "Sales+" Quality with strong language proficiency, increased technology capability and high-level adaptability to face the demand from the market and from the client. Now it is perfect for us to discuss the second research question: “To what extent does the collaboration between the Department of Business English in Shenzhen Polytechnic University and the Shenzhen Furniture Association address these requirements.” To answer this question, we align the findings from the quantitative approach with the most updated curriculum guidelines for the course: Exhibition English.

As highlighted during the expert consultation session held on the morning of March 29, 2025 at the Shenzhen Polytechnic University, the Exhibition English as a curriculum was evaluated by a panel of distinguished experts. This session brought together leaders from key sectors relevant to the International Business program cluster. Based on the suggestions from industry specialists, a framework—using the criteria of High, Medium, and Low—was set up to assess the extent to which each skill category is addressed across the Exhibition English courses

Table 3-7 illustrates the alignment between the needs from the industry of exhibition and the designated skills to be acquired by students after taking the Exhibition English courses.

Table 3-7: The alignment between needs and skills

Skill Category	**Market Prevalence**	**Exhibition English 1 Coverage**	**Exhibition English 2 Coverage**	**Combined Curriculum Score (0-1) ***
Communication & Sales	86.6%	High (Business negotiation, booth sales, product intro)	Medium (Communicatio n, reception; less sales focus)	0.75
Language Proficiency (English)	48.6%	High (Core of the course)	High (Core component, applied context)	1.00

Skill Category	Market Prevalence	Exhibition English 1 Coverage	Exhibition English 2 Coverage	Combined Curriculum Score (0-1) *
Software & Digital Tools	40.8%	Low (IT for research mentioned; no specific tools)	Low (Not covered)	0.00
Industry & Market Insight	39.4%	High (Industry knowledge, work processes, market analysis)	High (Industry overview, business analysis)	1.00
Client Management & Service	35.9%	High (Etiquette, reception, CRM concepts)	High (Service awareness, etiquette, CRM)	1.00
Resilience & Adaptability	32.4%	Low (Not explicitly covered)	Medium (Emotion handling, emergency response)	0.25
Coordination & Execution	29.6%	Medium (Planning, organization in projects)	High (Coordination, planning, on-site execution)	0.75
Specialized Technical Skills	13.4%	Low (Not covered)	Low (Not covered)	0.00

*Scoring: High=1, Medium=0.5, Low=0. Combined Score = Average of the two course scores.

The comparative analysis presented in Table 3-7 indicates that the Exhibition English 1 and 2 as one curriculum is still closely aligned with the needs from the Industry of Exhibition but lacks some skill sets required by modern society.

In terms of the close alignment, as one curriculum, Exhibition English addresses successfully the most required needs from the industry. Through demonstrating the essential knowledge and skills as the entry-level into the exhibition industry, this curriculum emphasized the significance of English language proficiency and industry knowledge. It treats both English proficiency and industry knowledge as two fundamental pillars rather than academic subjects. This treatment responds to the market requirement directly since half of job advertisement has positioned English proficiency as the second wanted skill, and more than a third of the employers' value industry insight as the specific ability. Students majored in Business English are immersed in the environment of specialized lexis, workflows, and working logic from the exhibitors and organizers.

Another close alignment is the curriculum emphasizes on client management, professionalism, and communication. These core skills have been practiced both thorough simulations in the classroom and internship in the real-world environment (such as the annual Shenzhen International Furniture Fairs). These core skills have also been the top priority required by the employers as shown in our quantitative analysis.

Apart from the close alignment, the curriculum is also disconnected from the workplace, particularly regarding the digital transformation. To be more specific, the most obvious disconnection is the lack of teaching and training in digital tools. Proficiency in digital tools such as AI tools, Customer Relationship Management (CRM) systems, data platforms, professional social media marketing, and advanced office software has been explicitly required by the job market. While the curriculum has suggested students to be capable of IT skills such as internet search, these skills in digitalization remains rudimentary. Key tasks such as marketing, sales and client management are now occurred pervasively digitally. This mismatch will leave students unprepared for the requirements today and later leads to a temporal gap among the employers, the graduates and the university.

Another mismatch which is more oriented to mentality is that the employers required the candidate to be adaptable to work in a project-based and fast-paced environment. Although the curriculum has content such as emergency response, the mental preparation to work in a stressful condition is still wanted.

To summarize, the curriculum provides a foundation of University-Industry Integration with an Exhibition English matches the requirements on English language proficiency and communication skills, the mismatches in the field of digital skills and mental preparation can be observed from the comparison between the qualitative content analysis and quantitative data analysis.

3.3.4 Conclusion

This study examined the alignment between the current needs from the industry of exhibition in Shenzhen and the over 20-year long-term University-Industry Integration between Shenzhen Furniture Association (SZFA) and the Department of Business English at Shenzhen Polytechnic University through asking two research questions: 1. What skills are now most frequently required in Shenzhen's exhibition market. 2. To what extent does the collaboration between the Department of Business English in Shenzhen Polytechnic University and the Shenzhen Furniture Association address these requirements. Based on a mixed-method approach of both quantitative data analysis and qualitative content comparison analysis, two major findings have been identified. First of all, the existing collaboration between the Department and the SZFA continuously to address the core competences such as English language proficiency, industry-specific knowledge, communication and sales and client management which have also been required by the employers as revealed from the quantitative analysis. This marks that the curriculum of Exhibition English is still following the most desired competences from the employers. However, even the curriculum meets with the requirements from a traditional landscape, the rapid development of technology has poised innovative challenges on the curriculum as digitalized channels such as big data, virtual event platform and artificial intelligence have penetrating into the industry of exhibition, resulting to 40.8% of the job advertisement in 2025 have explicitly stated that these skills should be a must for potential candidate. The

development of digitalization has posed significant challenges not only for students but also for other stakeholders in the industry. While Exhibition English as a curriculum has not explicitly included this content in its guidelines, leaving a gap between the real-world requirements and the education system.

To move from a single curriculum of Exhibition English to the holistic syllabus for business English majors, one course named: Information Communication Technology (ICT) for Business has included a certain degree of digitalization such as data analysis and data visualization. However, a tailor-made digitalized skills for exhibition talents is still wanted compounded with the lack of current desire for AI literacy.

To verify the findings from both the quantitative approach and qualitative approach, data triangulation is adopted to use experts' interviews as the evidence. After interviewing instructors teaching Exhibition English and the experienced practitioner in the industry, it is evident that the gap exists. For teachers, they confirmed the disconnect between the real-world digital demands and the curriculum content, expressing that the updating of curriculum to accommodate to the digital tools such as artificial intelligence, new media platform, CRM systems will significantly enhance student' adaptability to the industry. They also expressed their willingness to be actively engaging in professional development opportunities—such as workshops on digital skilling, industry immersion programs, and co-teaching sessions with technological advanced professionals—to traverse this gap.

A crucial step needs to be taken to involve more institutional support for continuous teacher development and the reformation of the curriculum of Exhibition English should ensure the alignment with industry development. This insight corresponds with the observation from experienced practitioners, reflecting the industry's evolving demand for multifaceted digital proficiency. This increased requirement on digital competence has posed a substantial challenge for educators, leading to a shift of the education system to meet the needs poised by the industry nowadays.

In conclusion, the long-standing relationship between the Department of Business English at Shenzhen Polytechnic University and the Shenzhen Furniture Association has been proven to be effective as this partnership has been serving the industry of exhibition for over 20 years with more than 7000 students being interned in the yearly exhibition fairs. What's more this partnership has also achieved noticeable milestones such as the national level courses, textbooks and provincial level training bases, leading to a stable and sustainable mechanism in carrying out University-Industry Integration. This partnership still meets with the most required skills such as the communication and sales, English language proficiency etc., in today's exhibition industry, a timelier adjustment towards the most up-to-date requirement today is still needs. This adjustment includes the incorporation of digital skills as well as a mentality preparation for adaptability under pressure. Only through this adjustment, this University-Industry Integration can keep pace with the rapid development in Shenzhen' s exhibition industry.

4 Comparison of Three Case studies

4.1 Convergence of UII Paradigms: Foundational Strategic Orientations

Although variant in the subject matter and background, all three cases examined in this study share several foundational characteristics that reflect a common institutional logic of university–industry integration at SZPU. These similarities are not coincidental; rather, they stem from shared policy guidance, institutional strategy, and vocational education principles that prioritize responsiveness to industry needs and employment outcomes.

4.1.1 Policy-Driven Institutional Orientation

A fundamental similarity across the three cases is that they all emerged and developed within a strong policy-driven institutional orientation toward university–industry integration, shaped by China's national strategies for vocational education reform. Since the mid-2010s, national policies have consistently emphasized deepening industry–education integration, strengthening enterprise participation, and aligning vocational talent cultivation with industrial transformation. Within this broader context, Shenzhen Polytechnic University demonstrates a high level of awareness at the school level that UII is a core developmental strategy rather than a peripheral teaching experiment. This shared understanding has fostered a clear, goal-oriented atmosphere, in which UII initiatives are consciously designed to serve identifiable objectives such as improving talent relevance, enhancing industry service capacity, and supporting regional economic development.

This institutional orientation is further operationalized through SZPU's articulation of the "Nine Joint Actions" concept and the development of industry college models jointly established with leading enterprises, which together have become hallmarks of the "SZPU Model" of UII. Although the three cases differ in industry focus, collaboration scale, and implementation pathways, they all take shape within this unified strategic framework. As a result, the Anran Wuyang case, the SZFA collaboration, and the fashion design cases can be understood not as isolated experiments, but as context-specific realizations of a shared policy vision, enabled by strong institutional awareness and a coherent, goal-oriented approach to university–industry integration.

4.1.2 Industry- Demand- Driven Strategic Orientation

All three cases are fundamentally driven by concrete industry demand rather than abstract educational objectives. The Anran Wuyang UII practice responds to the rapidly growing need for operational and live-streaming talents in TikTok-based cross-border e-commerce. The collaboration between the Department of Business English and the Shenzhen Furniture Association (SZFA) originated from the immediate manpower needs of the Shenzhen International Furniture Fair. Similarly, the Fashion and Apparel Design and Fashion Product Design majors are explicitly aligned with Shenzhen's modern fashion industry

development strategies and talent shortages. In all cases, industrial demand serves as the starting point for curriculum design, training content selection, and competency definition, ensuring that education outcomes remain closely connected to labor market needs.

4.1.3 Collaborative Value- Creation Orientation

All three cases adopt a dual-subject approach in which universities and enterprises jointly participate in talent cultivation. Enterprises are not merely internship providers but active contributors to teaching design, instruction, and assessment. Industry mentors in the Anran Wuyang project deliver training content and evaluate student outputs together with university teachers. In the SZFA collaboration, industry professionals co-develop courses such as Exhibition English and guide internships. In the fashion majors, enterprise experts participate through governance committees, co-teaching arrangements, project supervision, and employment selection. This shared responsibility ensures that educational content reflects current industry practice.

4.1.4 Employment-Centered Career-Linkage Orientation

Each case establishes explicit links between learning outcomes and employment pathways. The Anran Wuyang practice aims at immediate job readiness, enabling students to directly enter operational roles in cross-border e-commerce companies. The SZFA collaboration provides a stable internship-to-employment pipeline for exhibition-related positions, benefiting thousands of students over two decades. The fashion majors offer diversified career paths, including employment in design enterprises, entrepreneurship supported by industrial colleges, and further study through international cooperation programs. In all three cases, employability is treated as a core indicator of UII effectiveness.

4.2 Divergence of UII Manifestations: Sectoral and Contextual Variations

While the three UII cases share common principles in orientation, pedagogy, and employment linkage, they diverge significantly in how university–industry integration is organized, sustained, and embedded within educational structures. These differences are most evident in the duration and maturity of collaboration, the degree of institutionalization and governance, and the scale and temporal structure of curriculum implementation. The Anran Wuyang practice represents a short-cycle, project-based UII model characterized by flexible coordination and intensive, short-term training aligned with rapidly evolving digital platforms. In contrast, the SZFA collaboration reflects a medium- to long-term partnership that has gradually evolved into a stable dual-subject education system, integrating recurring internships with course-based learning. The fashion majors embody the most mature and institutionalized form of UII, where long-standing cooperation is embedded within formal governance bodies and fully integrated into degree-level curricula spanning multiple years. The following subsections outline these key areas of divergence.

4.2.1 Physical vs. Digital Learning Environments: Spatial Diversification

While all three UII cases emphasize learning in "real" contexts, they differ substantially in how physical premises and operational environments are constructed and pedagogically mobilized. These differences reflect not only industry characteristics but also the stages at which learning outcomes are expected to be validated.

In the Anran Wuyang UII practice, the enterprise provides students with direct access to a real operational environment embedded in daily business activities. Although the workspace is largely digital, it functions as an authentic workplace: students operate real TikTok accounts, participate in live-streaming sessions, and analyze real-time backend data. Skill acquisition takes place within ongoing commercial operations, and learning effectiveness is immediately tested through market feedback such as traffic, conversion rates, and sales performance. The premise is therefore a production-and-operation environment, where training and work are fully intertwined.

In the Fashion Product Design major, enterprises and the university jointly provide materially grounded, production-oriented premises. These include industrial colleges, on-campus training centers, specialized laboratories, and off-campus enterprise workshops. Students learn in environments that replicate or directly connect to industrial production conditions, such as jewelry craft studios, gem identification labs, ceramic and metalworking workshops, and intelligent manufacturing spaces. These training centers allow students to complete the full cycle from design conception to physical production, emphasizing craftsmanship, process control, and material knowledge. Here, the learning premise functions as a hybrid teaching–production site, where professional competence is validated through tangible outputs.

The Fashion and Apparel Design major incorporates training centers in a more layered and sequential manner. At the foundational stage, students acquire skills in well-equipped on-campus training centers, including garment structure labs, CAD studios, VR and intelligent manufacturing training centers, dyeing and pleating workshops, and make-up studios. These spaces provide controlled, repeatable environments for systematic skill development and technological training. However, the distinctive feature of this case lies in how learning extends beyond training centers into public, industry-facing environments. Students' designs are subsequently placed in real fashion shows, urban cultural events, museum exhibitions, and international platforms, where they are evaluated by professionals, enterprises, and the public. In this sense, training centers serve as the incubation space, while exhibitions and events function as validation and amplification spaces, linking skill mastery with creative legitimacy and market recognition.

By contrast, in the SZFA Exhibition English case, the primary learning environment is neither a permanent training center nor a production workshop, but a large-scale, event-based professional setting—the international trade fair. Students operate within the time-

compressed, high-intensity environment of the Shenzhen International Furniture Fair, performing communication, coordination, and service tasks under real market conditions. The trade fair itself becomes a temporary but authentic learning premise, emphasizing adaptability, language use, and situational professionalism rather than sustained production or technical skill accumulation.

4.2.2 Intermediary Dynamics: The Varying Roles of Industry Associations

In addition to enterprises and training premises, industry associations play markedly different roles in shaping the UII process across the three cases, further differentiating their institutional logics. In the Anran Wuyang case, the industry association acts as a "super connector" and "credit endorser". By establishing "SME cooperation project pools", it bridges the gap between universities and SMEs, overcoming high search costs and trust barriers. The association facilitates skill standardization by feeding real-world talent demands and micro-certifications back into curricula.

In the SZFA Exhibition English case, the Shenzhen Furniture Association functions as a core coordinating actor, mediating between the university, multiple enterprises, and large-scale exhibition events. The association not only aggregates internship demand and organizes student placement at trade fairs but also co-develops curriculum, textbooks, and training standards, providing continuity and legitimacy to the collaboration over two decades.

In the fashion design cases, industry associations play a more strategic and enabling role rather than acting as direct organizers of training. Associations such as the Shenzhen Garment Industry Association support UII through initiatives like pre-employment programs, industry events, and policy consultation platforms, while also facilitating access to government resources and urban cultural activities. Here, associations operate as connective hubs within a broader ecosystem, linking enterprises, government, educational institutions, and public platforms. These contrasting roles illustrate that associations may be peripheral, central, or facilitative in UII, depending on industry structure, governance traditions, and the degree of institutional coordination required.

4.2.3 Technological Disruption: AI's Differential Influence on UII Practices

Another significant difference among the three cases lies in how artificial intelligence (AI) and digital technologies are reshaping the industries involved, and consequently, how UII practices are either accelerated, constrained, or restructured.

In the Anran Wuyang case, AI-driven technologies and platform algorithms are central drivers of industry change and directly shape UII practices. Recommendation algorithms, data analytics, automated content optimization, and platform governance rules on TikTok

define what skills are valuable and how success is measured. As a result, UII in this context is strongly encouraged by AI-driven industry dynamics: enterprises urgently need workers who can interpret data, adapt content strategies, and respond to algorithmic feedback. The short-semester, intensive training model aligns well with the rapid iteration cycles of AI-enabled platforms, making UII both necessary and highly effective.

In contrast, the SZFA Exhibition English case reveals a more disruptive and challenging impact of AI. While traditional exhibition competencies—such as booth operation, client communication, and on-site coordination — remain important, AI, virtual exhibition platforms, CRM systems, and data-driven attendee management are redefining professional roles. However, these technological shifts have outpaced curriculum updating, creating a mismatch between industry demand and existing training content. In this case, AI does not automatically strengthen UII; instead, it exposes gaps in the established collaboration model and places pressure on educators and industry partners to renegotiate curriculum focus, teacher training, and cooperation mechanisms. UII is therefore being reshaped rather than reinforced, requiring strategic adaptation to remain relevant.

The Fashion Product Design and Apparel Design majors occupy an intermediate but more proactive position. AI and digital technologies—such as AI-assisted design, 3D modeling, AR visualization, and intelligent manufacturing—are increasingly integrated into design and production processes. Rather than displacing traditional skills, AI functions as an augmenting tool, expanding creative possibilities and improving efficiency. UII efforts in these majors are actively restructured to incorporate AI through updated curricula, advanced training centers, and cooperation with technology enterprises. At the same time, traditional craftsmanship, material knowledge, and cultural creativity remain core, ensuring that AI adoption does not undermine the identity of fashion design education. In this sense, AI serves as a catalyst for deepening UII rather than disrupting it.

4.2.4 Sector-Specific Nuances in Faculty Development

The depth of impact on teacher development also varies. In the Anran Wuyang case, teachers mainly act as coordinators and evaluators of enterprise-led training. In the SZFA case, teachers are curriculum co-developers and mediators between language education and industry practice. In the fashion majors, UII profoundly reshapes teachers' roles, influencing teaching innovation, research directions, professional standards formulation, and social service. Teacher development is most comprehensive in the fashion-related UII model.

Divergence	Fashion Majors (Apparel & Product Design)	Anran Wuyang (Cross-border E-commerce)	SZFA (Exhibition English)
Duration and Maturity of Collaboration	Long-term, highly mature collaboration embedded in degree programs	Short-cycle, project-based collaboration; recent and flexible	Medium- to long-term collaboration; over 20 years of accumulation
Degree of Institutionalization and Governance	Highly institutionalized with formal committees, industrial colleges, and policy alignment	Low to moderate institutionalization; enterprise-led with flexible coordination	Moderately institutionalized dual-subject education system led by association
Curriculum Scale and Temporal Structure	Full-cycle, degree-level curriculum spanning multiple years	Short-term, intensive training camps (2 weeks per session)	Course-based learning combined with recurring annual internships
Physical vs. Digital Learning Environments: Spatial Diversification	Multi-layered: training centers for incubation + public exhibitions for validation	Real operational workplace (TikTok accounts, live-streaming, backend data)	Event-based professional setting (international trade fairs)
Intermediary Dynamics: The Varying Roles of Industry Associations	Strategic and facilitative role linking enterprises, government, and urban platforms	Minimal association involvement; enterprise- and platform-driven	Central coordinating role played by Shenzhen Furniture Association
Technological Disruption: AI's Differential Influence on UII Practices	AI reshapes and deepens UII while augmenting traditional design and craft skills	AI strongly accelerates UII; platform algorithms define skills and training needs	AI creates disruption and exposes gaps between curriculum and industry demand
Sector-Specific Nuances in Faculty Development	Teachers' roles expand to include teaching innovation, research, standards-setting, and social service	Teachers mainly act as coordinators and evaluators	Teachers serve as curriculum co-developers and industry mediators

4.3 Challenges and implications in University–Industry Integration

While the three cases demonstrate diversified and effective pathways of university–industry integration at SZPU, they also reveal a set of structural and systemic challenges that constrain the sustainability, scalability, and equity of UII practices. These challenges are not unique to a single case but reflect broader tensions in vocational UII implementation under conditions of policy transition, industrial transformation, and institutional complexity.

4.3.1 Leadership Change and the Fragility of Long-Term Cooperation

One prominent challenge exposed by the cases is the vulnerability of UII initiatives to leadership changes, particularly in government- or policy-coordinated projects. UII models that rely heavily on specific administrative support or leadership endorsement may lose momentum when personnel changes occur. For example, in large-scale, district-level collaborations, shifts in government leadership can alter priorities, disrupt coordination mechanisms, or terminate initiatives before their long-term effects are realized. This fragility highlights a structural weakness in UII governance: when cooperation depends more on individual leadership commitment than on institutionalized mechanisms, continuity and sustainability become difficult to guarantee. The cases suggest that deeply embedded governance structures are essential to buffer UII projects against external administrative fluctuations.

4.3.2 Faculty Constraints and the Capability Gap in Industry Integration

Another critical challenge concerns the demands placed on teachers and the uneven distribution of industry experience among faculty members. Effective UII requires teachers not only to deliver academic content but also to understand industry workflows, technological trends, and professional cultures. However, not all teachers possess sufficient industry backgrounds, and opportunities for sustained enterprise immersion are uneven. In short-cycle or enterprise-led UII models, teachers may be positioned primarily as coordinators rather than deep participants, limiting professional growth. Even in more mature models, balancing teaching loads, research expectations, and industry engagement remains a significant pressure. These cases reveal that without systematic support for teacher industry training and career development, UII risks over-reliance on a small group of "double-qualified" teachers, threatening long-term capacity building. *The introduction of the 2025 Guidelines for the Development and*

Implementation of Vocational Education Teachers' Enterprise Practice Projects represents a strategic institutional response to these systemic bottlenecks. To realize the potential of this policy, it is imperative to move beyond superficial compliance toward a structural realignment of the faculty incentive logic. Specifically, this realignment emphasizes the project-based integration of faculty practice with industrial technical standards, ensuring that professional immersion yields tangible curriculum innovations and shared technological advancements. Ultimately, the robust implementation of such a multi-dimensional support system ensures that UII transcends its current dependence on a narrow elite of "double-qualified" practitioners, securing the systemic resilience necessary for long-term capacity building.

4.3.3 Uneven Policy Implementation and Large Inter-Program Differences

The three cases also expose significant disparities in UII implementation outcomes across different majors. Although UII is promoted as a universal policy goal, its effectiveness varies widely depending on industry maturity, enterprise willingness, resource availability, and professional characteristics. Practice-oriented and market-driven fields, such as fashion design or digital commerce, tend to achieve deeper integration more quickly, while other majors may struggle to identify suitable industry partners or meaningful cooperation forms. This unevenness suggests that policy implementation is not uniformly translated into practice, leading to differentiated student experiences and outcomes. Such disparities raise concerns about equity and consistency in vocational education reform.

4.3.4 Paradigmatic Misalignment and the Evolution of Talent Cultivation Logic

Finally, the cases collectively point to a more fundamental challenge: the need to rethink the underlying logic of talent cultivation in response to rapid industrial change. Traditional models that emphasize fixed skill sets and stable job roles are increasingly misaligned with industries characterized by digitalization, AI integration, and flexible employment patterns. UII must therefore move beyond matching curricula to current job requirements and instead cultivate students' adaptability, learning capacity, and cross-functional competence. This shift requires reconfiguring curriculum design, assessment methods, and collaboration mechanisms to prioritize responsiveness and long-term employability. The three cases suggest that without such a conceptual shift, UII risks becoming reactive rather than transformative.

4.3.5 Beyond Talent Supply: The Structural Shift Toward Cluster-Based Co-Creation

Drawing on the concept of "cluster-based training (Yu, F. (2026)," another critical challenge lies in redefining the university's role within university–industry integration. In many existing UII practices, universities still function primarily as responders or followers to industrial demand, adjusting curricula and training content after technological changes have already occurred. However, the cluster-based training model implies a more advanced form of collaboration in which universities act not merely as talent suppliers, but as co-creators of value in technological innovation ecosystems. This shift requires universities to participate earlier and more substantively in industry foresight, standard-setting, technology development, and innovation planning. Without this transformation, UII risks remaining reactive, rather than proactively shaping emerging technological trajectories. Moving toward a cluster-based paradigm thus demands that universities reposition themselves from peripheral training providers to strategic partners embedded within the co-evolution of industry, technology, and talent development.

In summary, the challenges identified across the three cases underscore that effective university–industry integration depends not only on innovative models and committed partners, but also on stable governance, teacher capacity building, balanced policy implementation, and a redefined educational logic aligned with dynamic industrial realities. Addressing these challenges is essential for moving UII from localized success stories toward sustainable, system-level reform.

5 Conclusion

This research has systematically examined UII paradigms at Shenzhen Polytechnic University (SZPU) through a multi-case analysis of Design Studies, Cross-border E-commerce, and Business English. As a flagship institution within China's "New Double High-Level Plan", SZPU's evolution serves as a sophisticated laboratory for reconciling ***top-down policy orchestration with bottom-up institutional innovation***. The findings reveal that SZPU's effectiveness is rooted in a unique dual-drive mechanism: at the macro level, the institution internalizes national reform strategies—such as the "Nine Joint Actions"—translating centralized mandates into localized operational excellence. Simultaneously, the success of the e-commerce immersion, the SZFA exhibition collaboration, and the fashion design initiatives demonstrates the vitality of bottom-up agency. These practices are not mere administrative responses but

organic pedagogical shifts driven by the immediate demands of the Greater Bay Area's industrial clusters, transforming the university from a passive talent supplier into a strategic anchor within a regional co-evolutionary ecosystem.

However, the "SZPU Model"also highlights the necessity of addressing structural tensions to ensure long-term sustainability. The identified challenges—ranging from the fragility of leadership-dependent cooperation to the professional role strain of "double-qualified" faculty—underscore that deep integration requires a move beyond reactive skill-matching toward a systemic reconfiguration of institutional logic. By integrating the 2025 National Guidelines, this study advocates for a structural realignment of faculty incentives and the adoption of cluster-based training paradigms that prioritize adaptive learning capacity.

On February 12, the Ministry of Education issued the "Opinions on Deepening the Reform of Key Elements in Vocational Education Teaching", signaling a decisive state-level commitment to industry-education integration by mandating a tighter alignment between vocational training and industrial evolution. This national policy validates the strategic foresight of SZPU, which had already anticipated these industrial shifts years ago. Positioning itself as a co-creator within the industrial ecosystem, SZPU preemptively deployed applications for new majors in cutting-edge fields such as Artificial Intelligence and the Low-altitude Economy. By centering its strategy on intelligence, greening, and integration, the institution has been proactively upgrading existing programs to better serve the Greater Bay Area. These emerging disciplines, currently in their nascent stages of deployment, offer a fertile ground for future research to evaluate the long-term efficacy of SZPU's adaptive curriculum and its real-world impact on industry transformation.

For international observers, particularly Hungarian policymakers, the SZPU case offers a scalable implementation paradigm that balances centralized strategic coordination with the autonomy of localized innovation. Ultimately, the research suggests that the future of vocational excellence hinges on a transformative shift from peripheral participation to value co-creation, providing a resilient framework for global institutions to bridge the gap between academic instruction and industrial transformation in an era of rapid technological change.

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7 Appendix

7.1 Appendix 1: Interview Questions for the Industry of Cross-board Commerce

To understand the enterprise's motivation for participating in the school-enterprise cooperation, the design of the cooperation mechanism, implementation effectiveness, challenges, and future prospects, the following questions were asked.

I. For Enterprises (CEO / Enterprise Mentors)

Core Questions:

To the Enterprise Leader (e.g., CEO Liu Can):

1. What were the main motivations for your company to initially participate in the "School-Association-Enterprise" cooperation? Was it related to industry characteristics?
2. What key resources did the enterprise provide during the cooperation (e.g., platforms, data, mentors)? Were there any difficulties in resource allocation?
3. How do you evaluate the students' performance in the real projects? Are there any impressive cases?
4. From the enterprise's perspective, has the cooperation brought direct or indirect economic benefits? (e.g., sales growth, brand exposure, talent pipeline)
5. What role did the industry association (e.g., Shenzhen Cross-border E-commerce Association) play in the cooperation? Was it indispensable?
6. What shortcomings do you see in the current cooperation model? For example, project duration, students' sense of responsibility, etc.
7. Do you plan to expand the scale or model of cooperation in the future? What are your expectations for the school or the association?

To Enterprise Mentors:

1. How did you participate in course design and teaching implementation? How did you collaborate with the school mentors?
2. What were the most common difficulties students encountered during the training? How did you guide them to solve these problems?
3. What do you think is the greatest advantage of the "Dual-Mentor System"? Are there any areas for improvement?

4. Have you felt an improvement in your own teaching abilities or industry understanding? Could you give an example?
5. Regarding situations where students lacked a sense of responsibility or low engagement, what improvements do you suggest?

To understand the teachers' roles in the school-enterprise cooperation, teaching reforms, professional growth, and evaluation of the cooperation mechanism, the following questions were asked.

II. For School Teachers (School Mentors / Program Leaders)

Core Questions:

To School Mentors:

1. How did you get involved in this school-enterprise cooperation project? What were your specific responsibilities?
2. What was your biggest gain from collaborating with the enterprise mentors? Were there any conflicts?
3. Through the enterprise shadowing experience, did you make any specific adjustments to your teaching content or methods? Could you give an example?
4. In which aspects did you observe the most significant progress in the participating students? Is there any particular case that impressed you?
5. Do you think there are obstacles in the current cooperation model regarding curriculum alignment, credit recognition, resource support, etc.?
6. What suggestions do you have for enhancing the sustainability of the project? (e.g., incentive mechanisms, institutional support)
7. Are you willing to promote this model to other courses or majors? Why or why not?

To understand students' learning experiences in real projects, competency development, career awareness, and feedback on the cooperation model, the following questions were asked.

III. For Students (Participating Students)

Core Questions:

Common Questions for All Students:

1. Why did you choose to participate in this school-enterprise training project?

2. What specific tasks did you undertake during the training? Could you describe a moment you felt most accomplished?
3. What was your biggest challenge? How did you overcome it?
4. How did the teaching styles of the enterprise mentors and school mentors differ? Which did you prefer and why?
5. Through this training, in which areas do you think you improved the most? (e.g., skills, communication, resilience)
6. Did this experience influence your career direction? If so, how specifically?
7. Do you think there is still a disconnect between the school curriculum and real enterprise practice? How should it be improved?
8. What suggestions do you have regarding the project's duration, content design, resource support, etc.?
9. Would you recommend similar projects to your juniors? Why or why not?

Additional Questions for Graduates Who Are Employed:

10. Did this training experience directly help you in finding a job? Did it lead to a job offer?
11. Is your current job connected to the training experience? Are the skills you learned during training applicable?

7.2 Appendix 2 : Interview Questions for the Industry of Fashion Design

Stream One: Interview Outline for Industry-Education Integration in Fashion Product Design Major, Innovation & Creative Design College

Thank you very much for taking the time to participate in our interview. This interview is conducted as part of the research project on "Policies and Practices of Industry-Academia Integration in Chinese Universities," focusing on exploring innovative models of industry-education integration in the field of fashion design at your college. The specific questions are as follows:

Program Structure and Talent Cultivation Orientation

Please briefly introduce the program structure of the Innovation & Creative Design College, and explain the differences in orientation and talent cultivation objectives between the two undergraduate majors: Fashion Product Design and Apparel & Accessories Design.

Development of Industry Colleges

Please discuss the specific practices of the college or major in establishing industry colleges, including cooperation models, operational mechanisms, and phased achievements.

University-Enterprise Collaborative Education Initiatives

Please introduce the specific initiatives of the major in areas such as university-enterprise co-developed courses, talent cultivation program formulation, and employment support, particularly regarding how industry cooperation enhances the quality of talent cultivation.

International Exhibitions and Industry Cooperation

Please share typical cases and operational models of cooperation between the college/major and government bodies, the industry, and specific enterprises during international exhibitions, cultural and creative expos, etc.

Local Government Linkage Mechanism

Please explain how the major collaborates with local governments to promote industry-education integration, listing specific cooperative projects and implementation pathways.

Internationalization Planning for Graduation Projects

We have noted that some majors have invited Hong Kong universities and enterprises to participate in graduation projects. What are the future internationalization plans and deployment strategies for graduation projects in the Fashion Product Design major?

Talent Cultivation Model through Industry-Education Integration

Please discuss how the concept of industry-education integration is reflected in the talent cultivation of the Fashion Product Design major, and introduce the specific arrangements and distinctive features of the "Short-Term Intensive Practicum" (实践教学周).

Shenzhen-Hong Kong Joint Talent Cultivation Project

We understand that the Apparel major has launched a Shenzhen-Hong Kong joint talent cultivation project. Could you please provide a detailed introduction to the cooperation model, cultivation objectives, and implementation outcomes of this project?

Stream Two: Interview Outline for Industry-Education Integration in Apparel & Accessories Design Major, Innovation & Creative Design College

Thank you very much for taking the time to participate in our interview. This interview is conducted as part of the research project on "Policies and Practices of Industry-Academia Integration in Chinese Universities," focusing on exploring innovative models of industry-education integration in the field of apparel and accessories design at your college. The specific questions are as follows:

Program Structure and Talent Cultivation Orientation

Please briefly introduce the program structure of the Innovation & Creative Design College, and explain the interrelations and respective orientations of the Apparel & Accessories Design major (both undergraduate and associate degree programs) with other majors.

Development of Industry Colleges

Please discuss the specific practices of the Apparel & Accessories Design major regarding industry colleges, including cooperation models, operational mechanisms, and phased achievements.

University-Enterprise Collaborative Education Initiatives

Please introduce the specific initiatives of this major in areas such as university-enterprise co-developed courses, talent cultivation program formulation, and employment support, particularly regarding how industry cooperation enhances the quality of talent cultivation.

International Exhibitions and Industry Cooperation

Please share typical cases and operational models of cooperation between the major and government bodies, the industry, and specific enterprises during international exhibitions, cultural and creative expos, etc.

Local Government Linkage Mechanism

Please explain how the major collaborates with local governments to promote industry-education integration, listing specific cooperative projects and implementation pathways.

Internationalization Planning for the Major

We have noted that this major has invited Hong Kong universities and enterprises to participate in graduation projects. Please elaborate on the specific concepts and deployment for graduation projects. Furthermore, regarding the internationalization of the major, are there considerations for cooperation with international institutions, such as art colleges in Italy or Europe?

Talent Cultivation Model through Industry-Education Integration

Please discuss how the concept of industry-education integration and distinctive cultivation models are reflected in the talent cultivation of this major, and introduce the specific arrangements and distinctive features of the "Short-Term Intensive Practicum" (实践教学周).

Shenzhen-Hong Kong Joint Talent Cultivation Project

We understand that the Apparel major has launched a Shenzhen-Hong Kong joint talent cultivation project. Could you please provide a detailed introduction to the cooperation model, cultivation objectives, and implementation outcomes of this project?

7.3 Appendix 3: Interview Questions with teachers teaching Exhibition English at Shenzhen Polytechnic University

Initial Motivation and Role Perception: In the early stages of cooperation (starting around 2003), how did you understand "industry-education cooperation"? What did you consider your primary role as a teacher to be at that time?

Evolution of Teaching Practice: Looking back on the development process of the "Exhibition English" course from a national-level quality course to a national planning textbook, what are the most significant changes in your personal teaching practice (e.g., teaching content, methods, case selection)? Could you share a memorable example of a teaching adjustment you made?

The Connotation of the "Dual-qualification" Identity: In the process of deeply participating in the "Five Authenticities" (真实问题、项目、场景等) training environment, how do you balance the two identities of "school teacher" and "industry mentor"? What challenges and sense of achievement has this dual identity brought you?

Perception of Cooperation Depth: Do you think the current cooperation model leans more towards meeting the short-term talent needs of enterprises (e.g., exhibition interns), or has it truly achieved "deep integration" between the curriculum and industry frontiers? How do you evaluate the actual role played by the industry association in collaborative talent cultivation?

Challenges in Responding to Industry Transformation: Facing the impact of digitization, AI, and big data on the exhibition industry, do you feel pressure regarding your knowledge or skills when teaching? Through what channels do you update your industry knowledge to ensure the teaching content remains current?

Turning Point in Identity: Over the 20 years of cooperation, was there a specific critical moment or event that caused a significant shift in your sense of identity as a "vocational education teacher"? Please describe it in detail.

From “Executor” to “Co-creator”: Do you feel you have transitioned from an "executor" of cooperative projects (implementing a set syllabus) to a "co-creator" of the course? How much autonomy and influence do you have in areas like course design and assessment standard development?

Collaboratively Addressing the “Timeliness Gap”: Research indicates a certain "timeliness gap" between current course content and the digital skill requirements of the labor market. As a frontline teacher, how do you believe schools, departments, industry associations, and individual teachers should work together to effectively narrow this gap? In your view, what kind of support mechanisms or collaborative processes are most crucial to establish?

Future Role Outlook: Looking ahead, what new qualities do you think an ideal Exhibition English teacher should possess? What new role do you hope to play in future industry-education cooperation?