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University-industry cooperation: The deep integration of Shenzhen Polytechnic University and Shenzhen CloudTranslation Technology

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Abstract: This paper explores the connotation and model of university-industry cooperation (UIC) by investigating the collaboration between Shenzhen CloudTranslation Technology Co., Ltd. (CloudTranslation) and Shenzhen Polytechnic University (SZPU) within value co-creation theory. The aim is to develop composite talents in “language + technology + service” mode. In terms of resource investment, the focus is on creating a mechanism for resource-sharing by innovating systems and platforms for industry-education integration, thus promoting a seamless connection between the education chain, talent chain, industry chain, and innovation chain. Regarding innovation, the collaboration addresses industry needs by incorporating the entire process of teaching reform and innovation, with cutting-edge technology deeply embedded to guide the new development of international language talents. The partnership between SZPU and CloudTranslation exemplifies a deep integration of AI technology in the language services industry and educational practice, providing a valuable reference for cultivating high-caliber, forward-thinking talents in higher education who meet the current trends in international language services.

Keywords: university-industry cooperation; Shenzhen Polytechnic University; CloudTranslation; language services; artificial intelligence

1. Introduction

Enhancing university-industry cooperation (UIC) has become a high level policy priority in China due to its positive impact on the both quality of teaching in university and the innovation capacities and competitiveness of industry. UIC emphasizes the collaborative relationship between universities and industries to foster innovation, research, and development. The goal of UIC is to bridge the gap between talent cultivation and industry needs through complementary utilization of resources and mutual advantages, thus promoting the development of both education and the economy. On a macro level, UIC refers to the alignment between industry (sectors, enterprises) and education (mainly school education), primarily addressing the coordination between industrial and educational development. On a micro level, UIC refers to the integration of production and education, primarily focusing on aligning the production process with the teaching process. Through extensive collaboration with universities, enterprises gain access to original technical knowledge and human resources, while universities, through educational cooperation with enterprises, introduce high-quality resources to improve talent cultivation. Theoretically, within an UIC community, universities and industry can achieve shared interests and mutual value.

The concept of University-Industry Collaboration (UIC) originated in the United

States in the early 19th century when American universities began breaking free from religious and traditional education constraints to better prepare graduates for emerging fields like engineering, agriculture, machinery, and manufacturing [1]. This historical development in the U.S. laid important groundwork that would later influence global approaches to industry-education integration.

In China, the evolution of University-Industry Integration (UII) has followed a distinct trajectory, typically described through three key phases: (1) an early integration period during the 1950s–1970s, (2) a separation phase from the late 1970s to mid-2010s, and (3) a renewed integration phase beginning in the mid-2010s. This cyclical pattern of integration and separation reflects China’s unique educational and economic development path.

Building on this historical context, contemporary UIC in China focuses on four primary cooperation goals: joint education, joint talent cultivation, joint employment, and joint development. However, implementing effective industry-education integration remains a significant challenge for vocational education, particularly in translating these theoretical cooperation goals into practical, sustainable models that benefit both educational institutions and industries [2].

In the practice, some industry-education integration projects have deviated from the fundamental goal of talent cultivation. Currently, certain projects excessively focus on scientific and technological innovation as their ultimate objective, prioritizing joint technical research, product development, and commercialization of results with enterprises. They fail to feed scientific research outcomes back into talent cultivation, causing the industry-education integration to lose its educational focus. This situation reflects the utilitarian approach of enterprises. A common issue in the integration process is the problem of “integration without depth” [3,4]. Many UIC projects remain superficial in collaboration. Key manifestations include: 1) Failure to establish stable teams of dual-qualified teachers; 2) disconnection between off-campus internship bases and on-campus teaching, lacking integrated design; 3) absence of robust management systems for school-enterprise cooperation; 4) inadequate formation of genuine collaborative talent cultivation models. The primary cause lies in enterprises failing to gain tangible benefits from participation, resulting in low engagement. The root cause stems from enterprises’ inability to derive tangible benefits from participation, which significantly dampens their engagement. This challenge presents a critical opportunity for CloudTranslation and Shenzhen Polytechnic University’s School of Foreign Languages and Business to pioneer solutions during their partnership.

We maintain that defining a clear “shared goal” for UIC constitutes the cornerstone of effective collaboration between CloudTranslation and the School [5]. This mutual objective would align institutional and corporate interests while addressing the current shortcomings in implementation. This study aims to present and discuss a practical case of collaborative talent cultivation between SZPU and CloudTranslation, a private company. This paper examines the feasibility, strengths, and challenges of UIC through the lens of value co-creation. Grounded in Service-Dominant Logic (S-D Logic), value co-creation theory represents a paradigm shift from the traditional “producer-consumer” model—where value is embedded in goods/services by producers—to a collaborative process wherein value is jointly

created through actor interactions and resource integration.

Applying this theoretical framework to UIC redefines the relationship beyond simple knowledge transfer or transactional contracts, establishing instead a dynamic partnership that generates distinctive mutual benefits and societal value. In other words, our core question is: How have the governance mechanisms for deep UIC in Chinese vocational education been constructed through the lens of value co-creation theory? Adhering to the cooperative philosophy of “resource-sharing, complementary advantages, and symbiotic development”, the study emphasizes the innovation of integration systems and mechanisms between education and industry, as well as the establishment of platforms to facilitate resource sharing. This research highlights the importance of building organic connections among the education chain, talent chain, industrial chain, and innovation chain in the context of UIC.

2. Literature review

2.1. University-industry cooperation (UIC)

UIC encompasses various forms of cooperation between universities and industries. It emerges and develops to bridge the gap between academic research, practical applications, and talent cultivation in higher education [6–8]. UIC practices take forms such as joint research projects [9], academic consultancy [10], technology transfer offices, collaborative research centers [11], and collaborative student cultivation. Driven by national policies, theoretical research on industry-education integration in China has demonstrated significant diversification. Recently the authors searched the China National Knowledge Infrastructure (CNKI) database using the keyword “industry-education integration,” which translates to “chan jiao rong he” in Chinese. We found a total of 23,300 articles. The earliest literature on this topic appeared in 2007, and since then, the annual number of publications has gradually increased, peaking in 2024 with 4222 articles. The main themes identified include industry-education integration (14,500 articles), vocational colleges (2207 articles), talent cultivation (1606 articles), school-enterprise cooperation (1337 articles), and vocational education (1185 articles). This indicates that UIC continues to receive significant attention within the academic community.

In China, the practice of UIC has been significantly influenced by policy guidance [12]. During the planned economy period (1949–1977), the primitive form of UIC was reflected in the administrative directive-driven “combination of education and production,” aimed at serving national industrialization. The then-popular half-work, half-study system encouraged schools and enterprises to jointly organize students to participate in production labor (e.g., the 1958 “Instruction on Educational Work” required vocational schools to include production labor as a mandatory course). From the Reform and Opening Up to the early 21st century (1978–2013), industry-education integration took the form of policy-guided “combination of industry and education,” focusing on aligning vocational education with market demands. The 1985 “Decision on Educational System Reform” introduced the “train first, employ later” principle, fostering models like order-based classes and training bases. The 1996 “Vocational Education Law of the People’s Republic of China” legally established the direction of industry-education integration, requiring enterprises to participate in

vocational education.

The **Table 1** summarizes the key policies or events related to the collaboration between education and industry.

Currently, research on UIC in China has made significant progress in terms of policy promotion, practical exploration, and theoretical innovation. Based on neo-institutional theory, some scholars argue that industry-education integration is not merely a talent cultivation model, but also a form of institutional design. It requires the construction of an institutional framework through regulatory elements (policies and regulations), normative elements (industry standards), and cultural-cognitive elements [13]. Scholars have studied the “boundary barriers” between the education chain and the industrial chain that need to be addressed in education-industry integration, such as the disconnect between curriculum content and job requirements or the ambiguous roles and responsibilities in school-enterprise cooperation. They propose enhancing the interactive cohesion between education and industry through “flexible willingness,” such as enterprises actively participating in curriculum design and schools flexibly adjusting teaching plans [14].

Some researchers focus on collaborative innovation, emphasizing a “three-in-one” training model that integrates education-industry cooperation, academic-research collaboration, and specialty-entrepreneurship coordination, highlighting multidimensional collaboration among education, research, and industry [15]. Other scholars analyze the market-driven operational mechanisms of education-industry integration from an industrial chain perspective, stressing the coordinated role of educational institutions, enterprises, and government. Some researchers stress the practice-oriented application of education-industry integration, focusing on the practical models in specific industries and advocating problem-solving approaches.

At the policy level, Peng Binbai’s advocacy for vocational education internationalization 2.0 represents a strategic response to global educational demands, particularly through the Belt and Road Initiative. This initiative facilitates the transnational diffusion of China’s vocational education standards, technological expertise, and pedagogical values, constituting a soft power projection in global human capital development. From an internationalization perspective, education-industry integration must adopt a global outlook that emphasizes two critical dimensions: international collaboration and cross-cultural resource optimization. Crucially, vocational education should follow industrial globalization to cultivate localized international talent - professionals who combine technical expertise with cross-cultural competencies and regional market knowledge. The BRI provides an institutional platform for such development, enabling global educational resource sharing through mechanisms like Sino-foreign university partnerships for co-developing internationally competitive skilled professionals [16].

Table 1. Key policies and events timeline.

Stage	Time range	Key policy/event	Core content
Combination of education and production	1949–1977	1949: First National Education Work Conference	Established the educational principle of ‘serving workers and farmers, serving production,’ emphasizing the combination of education and production.
		1958: ‘Instruction on Educational Work’ by the Central Committee	Emphasized ‘education must be combined with production labor’; promoted half-work, half-study; incorporated production labor into vocational school curricula.
Combination of industry and education	1978–2013	1978: National Education Work Conference	Proposed that ‘the education sector must align with the demands of national economic development,’ initiating vocational education reform.
		1985: ‘Decision on Educational System Reform’	Established the principle of ‘train first, employ later’; promoted the combination of education and employment.
		1996: ‘Vocational Education Law of the PRC’	Legally established that vocational education must ‘combine industry and education,’ involving enterprises in practical talent cultivation.
		2005: ‘Decision of the State Council on Vigorously Developing Vocational Education’	Advocated the ‘work-study combination, school-enterprise cooperation’ model; emphasized the practice-oriented nature of vocational education.
		2010: ‘National Long-term Education Reform and Development Plan (2010–2020)’	Required vocational education to align with industry needs; promoted school-enterprise cooperative talent cultivation.
Deepening of industry-education integration	2014–present	2014: ‘Decision of the State Council on Accelerating the Development of Modern Vocational Education’	First introduced the concept of ‘industry-education integration’; required schools and enterprises to collaborate in talent cultivation.
		2017: ‘Several Opinions on Deepening Industry-Education Integration’ by the State Council Office	Emphasized enterprise leadership and the ‘dual system’ of talent cultivation; introduced tax and land support policies.
		2019: ‘Implementation Plan for Vocational Education Reform’ (‘Vocational Education 20’)	Proposed construction of industry-education integrated enterprises and training bases; emphasized ‘dual’ cultivation by schools and enterprises.
		2021: ‘Opinions on Promoting High-Quality Development of Modern Vocational Education’	Proposed building an industry-education integration ecosystem; strengthened policy incentives and international cooperation.
		2023: ‘Action Plan for Empowering Industry-Education Integration in Vocational Education (2023–2025)’	Strengthened pilot projects; promoted technology sharing and achievement transformation.
		2025: ‘Three-Year Action Plan for a Strong Education Nation’ by the Ministry of Education	Deepened the construction of Excellent Engineer Academies; explored AI integration (e.g., DeepSeek) with industry-education integration and smart education platforms.

2.2. Barriers of UIC implementation

Various elements can hinder the effectiveness and development of UIC. According to Bruneel et al. [17], these obstacles can be broadly categorized into two main groups: orientation barriers and transaction barriers. Orientation barriers primarily concern the differing perspectives and visions held by academic researchers and industry partners. These differences stem from the gap between pure and applied scientific research, as well as conflicting time horizons. Industry tends to prioritize short-term results that can be quickly commercialized, while academia often focuses on fundamental, long-term research endeavors. Tartari et al. [18] highlighted the challenge in convincing researchers to cede autonomy over their research agendas, which they value highly. Conversely, industry stakeholders are often reluctant to commit resources to long-term projects without clear and immediate business benefits, creating a fundamental misalignment of goals.

Transaction barriers, on the other hand, relate to the costs and complexities arising from the differences between the two sectors. These often manifest as additional transaction costs, resulting from misunderstandings, unclear expectations, or misaligned interests. For example, the uncertain impact of university research in an industry context and the need for specific deliverables can create friction. Furthermore, conflicts over intellectual property rights and confidentiality arrangements frequently impede collaboration, as both parties have different rules and standards governing these issues. Incompatibilities in institutional rules and regulations further complicate partnership processes. Universities often lack the dedicated capacity, such as effective industry liaison offices, to navigate these business interactions efficiently [17].

Building on these foundational concepts, Rossoni et al. [19] outlined several specific barriers that can impede university-industry collaboration. Cultural and institutional differences remain significant, as the distinct organizational cultures, priorities, and operational processes of universities and industry often clash. Limited communication and understanding between academic researchers and industry practitioners can reinforce mistrust and misunderstandings, weakening potential partnerships. Additionally, goals and incentives are frequently misaligned; universities tend to prioritize fundamental research and dissemination of knowledge, whereas industry is driven by the desire for applied, market-oriented results. Funding and resource limitations further restrict the scope and sustainability of collaborative projects, particularly when sufficient financial support is lacking. Concerns over intellectual property—ownership, sharing, and commercialization—also serve as substantial barriers, deterring collaboration due to fears of losing control over valuable innovations. Regulatory and bureaucratic hurdles, such as complex administrative procedures and legal constraints, slow decision-making processes, making it difficult to establish and sustain partnerships. Finally, a lack of appropriate incentives for industry partners and academics alike can significantly reduce engagement in collaborative activities.

Understanding these multifaceted barriers is essential for devising strategies that foster more successful and sustainable university-industry collaborations. Overcoming these obstacles requires deliberate efforts to align goals, streamline administrative processes, and build trust between the sectors, ultimately enabling the joint pursuit of

research that benefits both academia and industry. In this context, the ongoing UIC between Shenzhen Polytechnic University (SZPU) and CloudTranslation represents a valuable exploratory case study for overcoming such implementation challenges.

3. Case study

With the rapid development of AI and other cutting-edge technologies, the global language service industry is undergoing significant transformation. The rise of machine translation and AI-powered language tools is changing the way the industry operates, creating new challenges and opportunities for language professionals. This shift has intensified the need for a new generation of professionals who are proficient in both language and technology. Recognizing this trend, SZPU and CloudTranslation have embarked on a collaborative journey to cultivate language service talents that meet the demands of this evolving industry. The collaboration is carried out under the dual backdrop of deepening national vocational education reform and the demand for industrial upgrading.

The collaboration between SZPU and CloudTranslation is rooted in the shared goal of cultivating a new type of professional with expertise in both language services and AI technology. As a leading institution in vocational education, SZPU brings its rich experience in language education and professional training. CloudTranslation, a technology-driven company, brings cutting-edge AI language tools and industry expertise to the table. Together, they aim to create a talent cultivation model that integrates academic knowledge with industry needs.

At the macro level, the nation encourages extensive and in-depth integration of industry and education. In 2022, the General Office of the CPC Central Committee and the General Office of the State Council issued the “Opinions on Deepening the Reform of the Modern Vocational Education System,” which explicitly proposed the strategic deployment of “building an industry-education integration community” for the first time. The Ministry of Education, along with nine other departments, implemented the “Action Plan for Improving the Quality and Prominence of Vocational Education (2020–2023),” emphasizing the need to deepen school-enterprise cooperation and encouraging vocational schools and enterprises to jointly build industry colleges, technology R&D centers, and other tangible platforms. On 23 December 2024, the Shenzhen City Work Promotion Meeting on Industry-Education Integration was grandly held at SZPU, where SZPU led the establishment of the Shenzhen Regional Industry-Education Alliance, one of the first 28 regional alliances in the country. This marked a new stage in the development of the Shenzhen regional industry-education integration.

At the micro level, the cooperation between CloudTranslation and Shenzhen Polytechnic University has proven the necessity and effectiveness of school-enterprise collaboration. The rapid development of artificial intelligence (AI) and natural language processing (NLP) technologies (such as intelligent translation technologies) has raised higher requirements for the language service industry, which urgently needs highly qualified, multidisciplinary talents proficient in both language and technology. CloudTranslation, a company specializing in AI translation, relies on school-enterprise cooperation to obtain technological R&D support and talent reserves.

Traditional language education, which focuses more on theory, struggles to meet the demand for application-oriented talents with technical skills [20]. UIC, through joint curriculum development and the construction of training bases, enables a precise alignment between educational content and industry needs.

3.1. Profile of CloudTranslation and SZPU

CloudTranslation was established in 2016 and has subsidiaries in Xiamen and Shanghai. In December 2020, the company passed the national high-tech enterprise certification. CloudTranslation currently supports mutual translation between 86 languages and covers 20 vertical industries, providing leading machine translation solutions and NLP research platforms for global industry users. The core team, led by Professor Shi Xiaodong, has expertise in three generations of machine translation (RBMT, SMT, and NMT), developing self-researched algorithms and models that are open-source. CloudTranslation has achieved top results in various national and international machine translation evaluations, such as CCMT 2019, CWMT 2018, and WMT 2017, winning several awards and holding multiple invention patents and software copyrights.

SZPU is a leading vocational university in China, financed by Shenzhen municipal government. Equipped with skills, knowledge and experience and the entrepreneurial spirit gained in SZPU, more than 40,000 graduates become highly skilled workers in the Great Bay Area in Guangdong province in China. SZPU invents co-action with the industry covering every operational fields of higher education, namely “nine joint actions”—joint governance and culture development, joint development of program syllabus and curricula, joint building of faculty teams, and joint research on applied technologies, joint development of industrial standards, joint development of qualifications and certificates, joint provision of innovation and entrepreneurship education, joint engagement in modern apprenticeships and community services, and joint establishment of overseas TVET skill development centers.

3.2. Methodology & data analysis

We conducted six semi-structured interviews with Deng Li, founder of CloudTranslation between December 2022 and April 2025. The initial interview focused on her business model development process, while five follow-up interviews in 2024 and 2025 specifically explored her university-industry collaboration (UIC) concept and cooperation plans and actions with SZPU. Interview duration ranged from 52 to 260 min. Our research also included interviews with multiple stakeholders: two CloudTranslation senior executives, one policy expert, the company’s chief AI translation scientist (a professor), and ten faculty members from School of Foreign Languages and Business in SZPU, with these interviews lasting 35–86 min. All interviews employed non-directive questioning to gather open-ended narratives about UIC relationships and impacts. The study was further supplemented by six field visits to CloudTranslation facilities and analysis of eight archival documents totaling over 600 pages.

To analyze the collected information for the UIC case study between

CloudTranslation and SZPU, we employed a multi-method qualitative approach. First, we conducted thematic analysis of interview transcripts to identify key patterns in the UIC partnership dynamics, innovation processes, and value co-creation mechanisms. The longitudinal interview data with the founder allowed us to trace the evolution of UIC strategies over time. Second, we performed triangulation by cross-verifying findings from different data sources (executive interviews, faculty perspectives, archival documents) to ensure reliability. Third, we applied narrative analysis techniques to the open-ended responses, reconstructing the partnership's development trajectory. Field observation notes provided contextual understanding of operational realities, while document analysis helped establish the institutional framework. This comprehensive analysis enabled us to develop a robust case study demonstrating how the UIC model created mutual benefits through knowledge transfer, resource sharing, and joint innovation between the enterprise and academic institution.

3.3. Cooperation between CloudTranslation and SZPU

As Chinese brands expand globally through the “industrial globalization” strategy, there emerges an urgent demand for interdisciplinary professionals mastering the “language + technology + service” triad. These compound talents must possess competencies spanning project management, technical localization, cross-cultural marketing, and multilingual communication to effectively support international business operations. This talent gap presents a critical bottleneck in building China's language service capacity. The industry requires systematic cultivation of professionals skilled in translation technologies, technical dissemination, and international exhibition management – competencies that traditional education models often fail to deliver. Addressing this challenge, CloudTranslation and SZPU have established a multidimensional partnership focusing on: 1) Collaborative resources: shared facilities and personnel; 2) holistic integration: industry perspectives throughout the curriculum; 3) technological implementation: cutting-edge tools in teaching methodologies.

3.3.1. Collaborative resources: Shared facilities and personnel

Scholars have noted the incentivization and motivations involving teaching staff in UIC. Perkmann et al. [21] illustrate that academic engagement and commercialization are motivations that play a role in faculty members' willingness to make UIC connections. Further elaborated, four motivations are identified for academics to be involved in UIC activities: 1) commercialization, which means transferring knowledge and technology into products; 2) learning, which refers to obtaining up-to-date knowledge; 3) access to in-kind resources, for example, equipment, materials, or data; and 4) access to funding.

In the case of UIC between CloudTranslation and the School of Foreign Languages and Business, faculty participation in UIC projects extends to individual members through both formal expectations and voluntary engagement. Faculty from the School of Foreign Languages and Business at SZPU demonstrate particular enthusiasm for UIC involvement, motivated by three key factors: 1) Job requirements: Industrial collaboration time is formally incorporated into faculty performance evaluations; 2) project incentives: through partnerships with companies like

CloudTranslation, faculty actively engage with cutting-edge industry technologies and trends. Their participation spans patent applications, trademark development, and contributions to AI platforms (such as Iwrite and Transwai), including product development, testing, and market validation; 3) industry-academic relations: maintaining strong industry connections supports curriculum development, requiring continuous multi-stakeholder evaluation to ensure academic relevance.

CloudTranslation and the school built a high-level teaching team for intelligent translation, addressing the challenges posed by AI and the needs of the Greater Bay Area's digital economy. The business English program, based on an AI translation competency model, established a talent pool for training post-editing professionals. CloudTranslation has conducted targeted training for teachers, covering language, product technology, project management, and competitiveness analysis. Since 2022, CloudTranslation's Chairwoman, Ding Li, has served as the Vice Chairman of the Industry-Education Integration Steering Committee at the School of Foreign Languages and Business at SZPU.

CloudTranslation and the School of Foreign Languages and Business jointly developed an intelligent language teaching management system and built a machine translation and post-editing training platform. This platform simulates real-world translation projects and improves translation training capabilities. They integrated teaching resources for unified management, creating a feedback loop for teaching improvement. Through AI-assisted homework evaluation, teachers' efficiency has significantly increased. The interpretation quality evaluation system, for example, assesses students' pronunciation and expression during practice, offering objective feedback and guidance for further improvement.

The two sides have built an efficient platform operating mechanism, established a platform management committee, and formulated a three-year development plan and annual plan. They have launched a "Language Service Elite Class" to train high-end talents and created a joint school-enterprise talent cultivating system. This collaboration leverages Guangdong's vocational education innovation platform and SZPU's off-campus training base, seamlessly bridging academia and industry in curriculum design and workforce preparation. To date, the platform has trained over 60 students, many of whom now pursue master's degrees or hold prominent roles in global companies (e.g., operations managers, brand managers), demonstrating exceptional academic proficiency and industry readiness.

CloudTranslate's pivotal role in Guangdong's Vocational Education Innovation Platform—through its collaborative projects with SZPU—directly facilitated its successful designation as a Shenzhen "Specialized, Refined, Unique and Innovative" (SRUI) Enterprise in 2023. This recognition has secured enhanced government resources and policy support while significantly elevating the company's industry reputation.

3.3.2. Holistic integration: Industry perspectives throughout the curriculum

In terms of innovation, CloudTranslation's collaboration with the school aims to immerse students in industry-relevant environments, exposing them to cutting-edge translation technologies and trends. This helps cultivate high-end language professionals needed in the Greater Bay Area. Efforts include course development,

training base construction, and textbook development. The joint development has led to the creation of seven high-quality courses, including “Language Workshop” and “Business Writing” with more courses under development.

“Language Workshop” this course serves as a dynamic, interactive platform for enhancing students’ comprehensive English skills—speaking, listening, reading, and writing. With CloudTranslation’s AI-powered transcription and subtitle technologies, students engage with authentic materials such as international news, corporate videos, and intercultural dialogues. These tools allow for real-time feedback and multilingual comparison, helping students identify linguistic nuances and cultural variations. Workshop activities—including debates, presentations, and role-plays—are enriched by CloudTranslation’s support in simulating multilingual and multicultural scenarios. As a result, students not only develop practical language fluency but also enhance their intercultural sensitivity and communicative adaptability, central to fostering Understanding, Interaction, and Communication across global contexts.

“Business Writing” equips students with the practical skills needed to communicate effectively in professional business contexts. The curriculum includes real-world documents such as emails, memos, proposals, reports, and résumés, with emphasis on clarity, conciseness, tone, and audience awareness. With support from CloudTranslation, authentic multilingual business cases and real-time translation tools are integrated into classroom activities, enabling students to simulate cross-border communication and adapt to global business environments. Through scenario-based tasks and peer collaboration, students not only improve their writing proficiency but also build intercultural awareness—laying a solid foundation for effective international business communication.

The School of Foreign Languages and Business at SZPU collaborates with CloudTranslation to provide company-led, faculty-supported project-based internships for translation-track students. These internships involve real-world translation projects for leading companies such as Huawei, Mindray, and other industry giants, covering specialized domains and large-scale international conferences. Conducted during short semesters, these immersive programs allow students and faculty to work closely with industry partners, gaining hands-on experience in authentic multilingual environments. This model has significantly enhanced students’ global competence and industry readiness, with nearly 10% of graduates entering Fortune Global 500 multinational companies each year.

Two parties have jointly established an off-campus internship base and upgraded the on-campus training base, implemented teacher training programs for artificial intelligence translation technology, developed vocational skill level certificates for AI translation, explored new models and mechanisms for the operation of industry-education integration innovation platforms, and developed intelligent language service carriers and application scenarios for smart home appliances, smart wearables, and smart robots.

The expert mentor team from CloudTranslation is deeply involved in the college’s vocational 5C curriculum and is implementing the “Five-course Action” plan to enhance the teaching quality of the team. CloudTranslation collaborates with the School of Foreign Languages and Business at SZPU to develop intelligent translation teaching resources and to establish training programs for intelligent translation talent,

teaching standards, teaching case studies, and textbook development, while engaging in school-enterprise collaborative dual education. The main measures for base construction include the following three aspects:

1) In April 2023, a school-level off-campus student training base was established to jointly develop an off-campus internship base for intelligent translation and language services. Numerous students are participating in projects such as post-editing with CloudTranslation and AI scenario development.

2) Assisting in upgrading the on-campus smart foreign language training base, CloudTranslation interpretation quality assessment system tracks and improves the entire learning process of students and conducts multidimensional evaluations of language learning outcomes, enhancing students' international language service capabilities. CloudTranslation provides the Transwai system and customized intelligent language service systems to further enhance the teaching and research capabilities of Business College faculty.

3) To meet the demand for high-end foreign language talents who are “proficient in languages, knowledgeable of nations, and skilled in fields,” and in service of national development strategies and the social needs of the Guangdong-Hong Kong-Macao Greater Bay Area, CloudTranslation and the School of Foreign Languages and Business are jointly revising national planning textbooks such as “Exhibition English” and “International Trade Practices,” and assisting in publishing textbooks and monographs like “Entrepreneurship Project Management” and “Country Studies on Cross-border E-commerce.” The cooperative team is actively promoting global digital research in vocational education, and provide high-quality teaching resources to countries along the Belt and Road and other global regions such as E-commerce Marketing, contributing deep vocational experience” and Chinese wisdom towards building a community with a shared future for mankind and the development of international vocational education.

3.3.3. Technological implementation: Cutting-edge tools in teaching methodologies

With the changing international landscape, vocational education is playing a key role in producing high-quality professionals. The partnership has leveraged CloudTranslation's advanced AI technologies, including the Transwai audio-video translation platform, integrating AI with language and translation studies to cultivate talents suited to the latest international language service trends. Through close cooperation, the two parties have secured over five copyrights and patents, demonstrating their shared commitment to innovation. CloudTranslation assists the School of Foreign Languages and Business in supporting the development of Gansu Peili Vocational College, which has established an internship base under the name of CloudTranslation. In terms of building the training base, the collaboration between CloudTranslation and the School of Business and Foreign Languages aims to create a model of a digital intelligent internship base and promote new ideas, standards, and mechanisms for school-enterprise-government collaboration. CloudTranslation and the School of Foreign Languages and Business have broken new ground by establishing high-end platforms for digital and intelligent language services. These efforts align with the “AI + Vocational Education” initiative and involve creating

research and practice centers for AI translation and digital teaching resources.

SZPU have established a deep collaboration in the field of AI-powered language and business education with CloudTranslation. Leveraging CloudTranslation's web crawling technology and the Transwai multilingual translation platform, the partnership has built a national-level foreign-language database to support country-specific research. This has led to the publication of 22 cross-border e-commerce research books covering different nations. These publications form the basis for further innovation, including AI-supported tools such as Transwai for instant subtitle generation and Iwrite, a platform that assists both written and spoken translation tasks, enhancing students' and faculty members' language capabilities.

Building on this foundation, three major AI-driven initiatives have been implemented. First, a real-time cross-border business intelligence monitoring system automatically scrapes and translates data from e-commerce sites, social media, and legal updates (e.g., Amazon reviews, TikTok trends, customs regulations), and integrates them into dynamic knowledge graphs to detect market risks, emerging consumption trends, and cultural sensitivities. Second, an intelligent localization copywriting engine, trained on the language strategies from the 22-country research publications, enables one-click generation of high-conversion marketing content tailored to local legal and cultural norms, with continuous optimization via A/B testing. Finally, a multilingual virtual business negotiation simulator uses immersive 3D environments and real-time AI translation to allow students to engage in culturally diverse simulated negotiations, strengthening their strategic communication and crisis response skills. These initiatives not only empower students to participate in real enterprise projects but also feed into the school's evolving curriculum, such as the forthcoming textbook "Cross-Border E-Commerce Practice in the AI Era".

4. Discussion and implications

The collaboration between Shenzhen Polytechnic University and CloudTranslation is a typical case of implementing national policies and achieving coordinated school-enterprise talent cultivation. This partnership addresses key challenges in industry-education integration and offers valuable insights.

4.1. National level: Overcoming policy execution challenges and building ecosystems

UIC in China is a combination of top-down and bottom-up practices. The Chinese government has introduced several policies to promote vocational education and its integration with industry. Key initiatives include the "Vocational Education Industry-Education Integration Empowerment Action Plan" and other related frameworks that provide guidelines and support for establishing partnerships between universities and industries. Significant financial support is allocated to both universities and industries for research and development projects. This funding often comes with conditions that encourage collaboration, such as requiring universities to partner with local businesses to qualify for grants.

Such decisions provide a strong impetus for local initiatives, often supported by provincial and municipal governments, leading to various forms of cooperative actions

between universities and companies. A notable example of this cooperation is the partnership between SZPU and leading companies such as Huawei, BYD, and DJI. They formed Modern Industrial Colleges to foster research and innovation. These institutions serve as hubs where industry needs and educational programs align, ensuring that graduates have relevant skills. It creates an organic connection between education, research, and industry.

4.2. Enterprise level: Reducing R&D costs and enhancing technological transformation

Companies often encounter mismatches between their technology needs and the available talent supply. Collaborative efforts, such as joint school-enterprise research centers, effectively transform corporate challenges into valuable teaching and research topics, fostering innovation and talent development. Increasingly, programs that include internships, cooperative education, and hands-on projects are becoming common. In these initiatives, universities partner with companies to provide students with real-world experience, while businesses gain access to fresh ideas and skilled talent. For instance, CloudTranslation was recognized by the government as a “Specialized, Refined, Distinctive” enterprise due to its deep collaboration with SZPU.

4.3. School level: Breaking barriers between education and industry

Traditional education often lags behind industry changes. By co-creating real-world curricula and providing industry-specific teaching tools, schools can ensure that education stays aligned with market demands. CloudTranslation and SZPU have also tackled challenges like outdated equipment and a lack of hands-on training for teachers through mutual hiring and teacher internships. Universities might be incentivized to develop curricula based on industry needs, ensuring that educational outputs align with market requirements. Faculty and students participate in industry conferences, startup incubators, and networking events, which foster relationships between academic researchers and industry leaders. These informal interactions can deepen UIC. SZPU, in collaboration with CloudTranslation has successfully landed on the Guangdong Province Industry-Education Integration Innovation Platform.

5. Conclusion

UIC in China is characterized by both top-down and bottom-up approaches, which not only facilitate effective collaboration but also promote a sustainable ecosystem for innovation that aligns educational outcomes with market demands. This dual strategy allows for flexibility and responsiveness to both national goals and local needs. In the future, China may support more innovative grassroots initiatives, emphasizing the importance of accumulating, making transparent, and sharing related experiences to foster inter-agency horizontal learning [22]. Future studies should focus on inter-regional comparative research initiatives, as there have been very few studies addressing this issue so far [23]. Comparing the rich experiences of China in integrating education and industry with the efforts of other nations to promote UIC may contribute to a new balance in the historically conditioned dominant forms and directions of cross-cultural knowledge flow [22].

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