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Exploration on Application of the EPIP Teaching Model to Cross-Border E-Commerce Instruction in Vocational Education and Training

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Abstract: *The Engineering Practice and Innovation Project (EPIP) is an innovative teaching model developed in China. It is widely adopted in the field of vocational education and training (VET), and is characterized by a strong integration of theoretical instruction and practical application. This pedagogical model employs real projects completed by enterprises as teaching materials, emphasizing student practice within real workplace settings. The primary aim is to cultivate students' occupational competencies and their capacity to adopt innovative solutions to solve complicated work-related problems. The theoretical framework and pedagogical logic of EPIP align closely with the objectives of cross-border e-commerce degree-rewarding programs, which seek to nurture highly skilled professionals. Specifically, EPIP offers an effective means of addressing structural challenges in routine training and instruction, such as the mismatch between theory and practice, and the misalignment between workplace requirements and student competencies. By optimizing the existing training schemes and curriculum design to be in line with actual occupational demands, EPIP strengthens the coherence, systematic, and progression of course structures. Furthermore, it fosters the development of diverse, multi-model, and co-developed teaching resources by educational institutions and enterprises. The establishment of an interdisciplinary, dual-qualified teaching team, which features a close collaboration between institutional education and industry training, and provides a foundation for the innovative application of the EPIP model in cross-border e-commerce education.*

Keywords: *EPIP Teaching Model; Cross-Border E-Commerce; Curriculum Design; Enterprise Project; Vocational Education and Training*

1. Introduction

The global expansion of trade platforms such as TikTok and Amazon Live, together with the rapid internationalization of live-streaming platforms such as TikTok, The Red Book, and Kuai Shou, has promoted new business models in cross-border e-commerce. According to data from the General Administration of Customs, in the first three quarters of 2024, China's total cross-border e-commerce import and export volume has reached RMB 1.88 trillion, of which exports amounted to RMB 1.48 trillion with an increase of 15.2% [1]. Between January and November 2024, live-streaming e-commerce retail sales across the country reached RMB 4.3 trillion, contributing 80% of the incremental growth within the e-commerce industry [2]. Consequently, professionals with integrated competencies in multilingual live-streaming, cross-cultural marketing, and digital operations have become highly sought after in the e-commerce industry. The establishment of new degree programs of Cross-border E-commerce, as well as the major directions of cross-border e-commerce within traditional Business English and Applied English programs, are facing new opportunities as well as challenges. Exploring the application of innovative teaching models in cross-border e-commerce curricula has become an urgent necessity.

2. The Theoretical Framework for the EPIP Pedagogical Model

The four letters of EPIP are abbreviations for Engineering Practice Innovation Project, in which E represents Engineering, P stands for Practice, I denotes Innovation, and the final P refers to Project. Together, the term was translated as "Engineering Practice Innovation Project". The first academic paper on EPIP indexed in CNKI database was published in 2017 [3]. This innovative pedagogy teaching model was conceived from the perspective of modern industrial transformation and development. By adopting

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this model, practitioners and providers focused on establishing an intimate interaction between education and industry, employing real engineering projects as teaching material, and practice was treated as the guiding orientation, and the cultivation of students' practical and innovative capabilities as its primary aim. The model aimed to train students to understand and learn from existing engineering projects, to observe and identify problems during project implementation, and to apply the knowledge they have acquired by adopting innovative methods and approaches to tackling practical issues arising within workplace practice [3].

The creation of the EPIP teaching model was grounded in more than two decades of China's educational reform and theoretical research. The inventor Jingquan Lv drew inspiration from both the wisdom of modern Chinese educational thoughts and combined the advanced international concepts of vocational education, which was designed for the cultivation of innovative, interdisciplinary, and practice-oriented technical talents [4]. It assimilated the ancient Chinese philosophical insight of Mozi's "action-based" pedagogy, modern insights of Tao Xingzhi's "unity of knowledge and action" in life education theory, and current insights of Huang Yanpei's vocational education philosophy of "integration of work and study". These traditions were rooted in Chinese educational practice and, in turn, served to guide contemporary practice [5]. The EPIP model was essentially practice-oriented, project-based, and innovation-driven, with its core logic expressed as "learning by doing, innovating through learning". The teaching model underscored the practical, applied, and innovative nature of vocational education, which aligned with its mission of training highly skilled technical professionals.

Engineering thinking constitutes the essential feature of the EPIP teaching model. On the one hand, teaching design emphasizes the cultivation of students' systematic thinking. To carry out this teaching model, courses are structured systematically, with close attention paid to the interconnections among different elements of teaching content, thereby ensuring that students' knowledge structures are project-based and mutually reinforcing. On the other hand, the model stresses the cultivation of students' awareness of standardization. Projects are conducted according to established standards and procedures, and students' skills are evaluated against project benchmarks, with targeted suggestions for improvement provided upon project completion.

The practice dimension forms the key pathway to the development of student competences. Through practice-oriented design, theoretical knowledge was closely integrated with practical skills. By implementing real engineering projects, authentic teaching environments were created, which enable students to acquire the practical abilities expected in real workplace contexts [6]. Guided by this teaching model, teachers are expected to build a progressive practice-based training system moving from basic skills to integrated application, and then to innovative practice. Learning projects are drawn from real and completed enterprise cases, with teaching tasks designed to cover the entire work processes in professional positions. These tasks are deliberately designed to be challenging, incorporating appropriate technical difficulties and scenarios likely to occur in professional settings. Lv, Tang, Shi [3] innovatively proposed a progressive curriculum structure enabling a three-stage professional training pathway, which was from an apprentice to become a technician, and finally a field engineer.

Innovation represents the core driving force of the EPIP teaching model. Teaching design encourages students to apply existing knowledge in creative ways, exercising their capacity for innovation to devise new methods and approaches for addressing problems encountered in engineering projects. In practice, a "dual-mentor system" combining technical and business expertise promotes cross-disciplinary integration and innovation. The ultimate objective is to cultivate students' ability to achieve from technological improvement to original invention, equipping them to propose innovative solutions to real engineering challenges.

Projects serve as the organizational carrier of the EPIP model. Teaching activities are situated within complicated engineering projects, using them as the framework and foundation for instruction, thereby ensuring their adaptability for the training of technical professionals. Building on this principle, Jingquan Lv extracted the "Five Reals" teaching strategy, which refers to the integration of thinking and doing, of theory and practice, of school and enterprise, of vocational education and socio-economic development, and of vocational education with holistic human development. These strategies create teaching contexts for vocational talent cultivation. He further proposed a "five-industry linkage" educational ecosystem, which is directed to integrate industry, sector, enterprise, discipline, and profession. The five linkages guided the development of vocational teaching materials and the exploration of new pedagogical models, therefore, to create a new ecosystem for vocational education.

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3. Practical challenges in cross-border e-commerce course teaching

3.1 Imperfect curriculum design

Cross-border e-commerce, characterized by its international nature, interdisciplinary focus, and diversity, not only requires a curriculum that incorporates knowledge of sociology, law, business, and other related fields to enhance students' professionalism, specificity, and regional applicability of language use. Courses in business management, international finance, operations management, and supply chain management in the curricula are essential to their unique roles within cross-border e-commerce. However, insufficient attention to regional economies and cultures in the curriculum often leads to a homogeneous approach to teaching, resulting in difficulties in regional application. Before the release of the Teaching Standards for Higher Vocational Education Cross-Border E-Commerce Programs, by the Ministry of Education in February 2025, significant disparities existed in curriculum design across institutions, accompanied by a lack of uniform standards and regulations, which resulted in uneven knowledge and skill sets among graduates, adversely affecting their general employability and industry recognition. Nevertheless, exploration into the formation and development of a coherent disciplinary structure remained at a preliminary stage.

3.2 Imperfect knowledge Structure of the Teaching staff

As cross-border e-commerce is an emerging academic discipline, the teaching faculty were primarily individuals from fields such as languages, international trade, e-commerce, and computer science. This led to a lack of interdisciplinary diversity within the teaching staff, with a notable shortage of comprehensive, cross-disciplinary educators who possess both advanced foreign language skills, well-developed cross-cultural awareness, familiarity with international standards, and strong business operation capabilities. Furthermore, instructors often possess limited practical industry experience, as well as insufficient experience in guiding students through hands-on enterprise practice. Consequently, student learning remained largely theoretical, leading to underdeveloped practical competencies and were unable to meet the demands of real-world business environments. Critical practical areas such as overseas warehouse exploration, business data analysis, social media operation, independent website development, off-site promotion, and B2C/B2B cross-border e-commerce operations lack the essential training environment that only the industry can provide. When students undertook internships or entered into employment, employers had to invest substantial time and resources in new employee training.

3.3 Lack of industry-education collaborative training

The lack of industry-education collaborative training for cross-border e-commerce was manifested in three aspects. Firstly, there was insufficient investment in teaching hardware facilities. Practical teaching in cross-border e-commerce requires specialized ERP systems, simulated overseas warehouse platforms, and multilingual customer service systems. Due to funding constraints, most institutions could only provide the most basic e-commerce simulation software for practical instruction. Secondly, the number and the range of enterprises that were involved in the industry-education collaboration were inadequate. Currently, there is a noticeable imbalance in resource allocation during collaboration between higher vocational institutions and enterprises. Most institutions tended to establish cooperative relationships with leading companies in the industry, while paying insufficient attention to the vast number of small and medium-sized enterprises (SMEs). Compared to the relatively fixed post structures of large enterprises, SMEs typically emphasized more on practical abilities and adaptability, creating a structural contradiction where enterprises faced difficulties recruiting suitable staff, while students were struggling to find employment. Thirdly, the depth of industry-education collaboration remained insufficient. Existing collaborations could not accommodate large-scale practical training, but limited learning activities to enterprise visits, which were regarded as superficial level cooperation. There was a notable shortage of cases genuinely achieving two-way cultivation through locate enterprises within colleges and design colleges within enterprises. Furthermore, teaching resources in vocational training fail to keep pace with industry development, resulting in poor alignment between talent development and industry requirements in cross-border e-commerce, along with inadequate teaching facilities and other related issues.

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4. Exploration of the EPIP Teaching Model in Practical Cross-border E-commerce Course Instruction

4.1 Talent development objectives

The EPIP teaching model employs an integrated and systematic curriculum design that interconnects teaching materials, enabling students to develop a skill set structured by conducting real projects in enterprises. Through constructing practical learning environments, it fosters the comprehensive application of acquired skills, stimulating innovative thinking and creative problem-solving abilities to address real-world position challenges. By decomposing real project requirements and implementing progressive training within a typical work environment, the model enhances students' practical competencies and innovative capacities, which support students in mastering both the professional knowledge and technical skills required in real work positions, while also developing comprehensive vocational qualities and operational capabilities. Therefore, the EPIP teaching model is highly aligned with the practical-oriented and high-skilled talents.

4.2 Curriculum design for cross-border e-commerce programs

Guided by the EPIP teaching model, the curriculum design for cross-border e-commerce programs must be oriented towards the actual competency requirements of professional positions. Centered on the core principles of cultivating engineering thinking, enhancing practical abilities, stimulating innovation awareness, and project-driven learning, it should integrate educational theory, industry needs, and the principles of talent development. The curriculum must adhere to the principles of progressive skill development, industry-education integration, and sustainable student development, ensuring the courses are designed to be scientific, systematic, and practical.

In terms of curriculum structure, the EPIP model moved away from the traditional fragmented disciplinary knowledge. For instance, when reconstructing the curriculum contained project, courses should be designed and organized based on typical work scenarios, such as overseas market expansion for a specific brand, or planning seasonal promotional campaigns. The training integrates knowledge modules including international trade regulations, platform operations, digital marketing, and logistics management. When designing a practical course, students should implement a complete work process including product selection, store setup, advertising campaigns, order fulfilment, and after-sales management. By solving practical problems such as improving trade conversion rates in Southeast Asian markets and improving international logistics efficiency, students systematically mastered the application of knowledge from multiple disciplines. The curriculum should incorporate different levels of difficulty. The initial stages focus on simulated projects to develop fundamental operational skills, followed by the introduction of real enterprise projects or competition-based tasks in later stages to stimulate innovative thinking, thereby achieving a progression from knowledge to practice, and ultimately to innovation.

The curriculum design must align with industry needs and talent competency standards. As the EPIP model is centered on solving practical engineering problems, its curriculum should clearly define the industry’s requirements for competencies in the industry, data analysis, supply chain management, and cross-cultural communication. Being a highly practical field, the curriculum should focus on developing the ability to solve complex problems in work contexts. Through practical project modules such as setting up an e-commerce website and executing overseas social media marketing campaigns, students gain skills in platform rules, user profiling, and marketing planning.

Course implementation should be project-driven, using real business projects to connect knowledge segments and reflecting holistic and systematic thinking. The EPIP teaching model emphasizes learning through real business, requiring curricula based on real projects that integrate fragmented knowledge into systematic competency modules. Constructivist learning theory emphasizes that learners construct knowledge actively by solving real-world problems. The core of the EPIP model is on engineering thinking, which emphasizes the ability to analyze problems systematically and solve problems innovatively, by breaking down complex problems into manageable subsystems. For instance, in cross-border e-commerce operations, issues such as low traffic conversion can be broken down into sub-problems like page design, keyword matching, and user path optimization, guiding students to analyze and solve problems using structured methods.

Adhering to the principle of combining innovation and practice, cross-border e-commerce required the application of technical tools and business innovation within working contexts. With the rapid technological development in cross-border e-commerce, some emerging technologies have been used in

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work, such as AI product selection, big data marketing, and cross-border livestreaming. Therefore, the curriculum must balance hands-on training with existing technical tools and the exploration of innovative models. Incorporating mainstream tools in teaching, like Google Analytics and ERP systems, and into practical courses, should follow the principle of progressive innovation. Students are expected to first master established tools and processes, and then are guided to apply them with innovative approaches in real or simulated projects. Simultaneously, students should be encouraged to apply new technologies, such as using AI to generate marketing content to solve traditional problems, fostering an innovative orientation.

4.3 Development of teaching and learning resources

The development of teaching and learning resources serves as a critical foundation for implementing the EPIP pedagogical model. In the aspect of hardware resources, institutions must establish specialized cross-border e-commerce training centers, which are equipped with operational simulation or virtual platforms, live-streaming studios, ERP management systems, and other hardware facilities to replicate typical business environments. Similarly, it is necessary to broaden and deepen collaboration with enterprises through the joint development of both on-campus training centers and off-campus training bases, enabling students to participate in real-world tasks such as store management, new media marketing, logistics service, and warehouse operations. Regarding the software teaching resources, it is fundamental to build sustainable digital case libraries for real projects, collecting business cases that align with current industry trends, such as operations on platforms including TikTok, Amazon, and AliExpress, and these resources should be continuously updated. Furthermore, digital and virtual simulation technologies should be employed to construct immersive virtual business platforms. These will allow students to respond in virtual environments to the globalized business scenarios, such as the changing customs policies, evolving international standards, and fluctuating exchange rate, hence enhancing their risk management capabilities.

Developing rich digital resources is an effective instrument in building students' knowledge and technical skills. On one hand, it is imperative to integrate online learning platforms such as MOOC-based vocational education systems and corporate training repositories, such as the official Amazon training courses of a multi-level, to build an ecosystem of teaching materials. These modular and project-based digital resources target individual skill gaps and key competency requirements, ensuring the development of students' professional abilities and literacy at each step of skill acquisition. On the other hand, closer collaboration with enterprises should be pursued to develop tailored industry-education collaborative courses that are built on the extensive practical experience of businesses. Based on enterprise competency frameworks, the specialized elective courses, such as cross-border live-stream marketing and overseas social media promotion, should be developed, which will allow students to select modules according to their personal interests and career aspirations for targeted skill enhancement. During course delivery, a project-driven pedagogy approach should be adopted. Through constant practice, they acquire competencies in planning, implementation, and evaluation, thereby facilitating a smooth transition from academic learning to professional development [7].

4.4 Faculty development and capacity building

The establishment of a teaching team characterized by dual-professional competencies, innovative capacity, and interdisciplinary expertise is essential for the successful implementation of the EPIP teaching model. On the one hand, institutions should encourage teaching staff to engage in industrial practice through collaborative projects with enterprises. Such engagement enables educators to familiarize the latest regulations governing major cross-border e-commerce platforms, to acquire cutting-edge industry technologies, and to master the application of generative artificial intelligence in cross-border e-commerce contexts. Practical experience of tutors and mentors obtained in industry should be systematically transplanted into teaching processes. Institutions may develop some regular programs for staff to work within enterprises, and participate in some important business activities, such as peak-season promotions and new product development, thereby accumulating substantial experience for instruction. Supporting teaching staff in obtaining professional qualifications, such as obtaining certificate accreditation, like Amazon Operation Specialist, can effectively enhance their practical instructional capabilities.

On the other hand, institutions should facilitate the deep involvement of industry mentors in all aspects of teaching and learning. Inviting operational specialists and technical experts from enterprises as guest lecturers, to provide specialized workshops, offering project guidance, and sharing business

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insights can introduce advanced operational skills and valuable professional networks into the classroom. Furthermore, the interdisciplinary teaching team from international trade, business English, e-commerce, marketing, and computer science is crucial for designing integrated project tasks and addressing complex challenges during project implementation. Such collaboration represents a vital approach to addressing the multidisciplinary nature of cross-border e-commerce education. Fostering a faculty team that possesses both rich theoretical knowledge and extensive practical experience will power the development of students' professional competencies, thereby supporting the transition of the cross-border e-commerce sector towards high-quality development [7].

To strengthen the development of the dual-qualified teaching team, institutions should establish an integrated system for the shared academic and industrial expertise, which includes recognizing industrial experience in academic promotion and performance evaluation. Enterprises should be encouraged to provide industry mentors with training skills and educational psychology, to reward appropriate honorary titles to motivate both academic and industrial contributors. Institutions should develop some teacher training programs and teaching-research activities that focus on the EPIP model, to facilitate discussions on the design and implementation of instructional processes, including course design, delivery, and assessment, to enhance educators' project guidance capabilities, to improve overall teaching quality, and to ensure the effective execution of the curriculum.

5. Conclusion

The EPIP teaching model, with its focus on engineering practice and innovation projects, offers both a theoretical framework and a practical methodology for reforming traditional education. By aligning curriculum design with industry requirements, enriching multimodal teaching resources, and strengthening the development of a dual-qualified, innovative, and interdisciplinary training staff, this model effectively stimulates students' learning motivation and creative potential. It addresses the limitations of traditional pedagogy and alleviates the mismatch between labor market demands and talent development. During the implementation process, students enhance their practical skills through participation in real enterprise projects, fostering their innovative ability to resolve complex problems. By broadening and deepening industry-education collaboration within the program curriculum, higher education institutions can further synthesize the cross-border e-commerce vocational education with industry development. The continuous refinement of the EPIP model in pedagogy will cultivate a growing number of highly skilled and innovative professionals, thereby supporting the sustainable development of students, the cross-border e-commerce industry, and the regional economy.

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References

[1] AMZ123. Report Interpretation: Summary of 2024 Industry Data for Cross-Border E-Commerce, How is the Development Status of Cross-Border E-Commerce? Retrieved from: https://baijiahao.baidu.com/s?id=1822034371716919762&wfr=spider&for=pc

[2] Zhang J. Retail Sales from Live Streaming E-Commerce Reach 4.3 Trillion Yuan in First 11 Months of 2024, with Small and Medium-Sized Merchants as the Core Force. China Business Journal. Retrieved from: https://baijiahao.baidu.com/s?id=1819880073630213747&wfr=spider&for=pc

[3] Lv J, Tang X, Shi Y. Research and Practice on the Teaching Model of the Engineering Practice Innovation Project (EPIP). Chinese Vocational and Technical Education, 2017, (5), 10-14.

[4] Lv J, Geng J. Exploration on Curriculum Theory in EPIP Teaching Mode. Journal of Tianjin Vocational Institutes, 2020, 22 (11), 3-7.

[5] Lv J, Shen Y. Research on Fducation Theory of EPIP Teaching Mode. Journal of Tianjin Vocational Institutes, 2021, 23 (4), 3-6.

[6] Wei B. Research on the Practical Dimension of the Teaching Mode of Engineering Practice Innovation Project (EPIP). Vocational Education Research, 2024, 6, 33-37.

[7] Sun X, Zheng S. Research on the Optimization of the Standard System for Cultivating Crossborder E-commerce Talents. Standard Science, 2025, 5, 82-89.