

Practical Study on Cross-border E-commerce Competence Cultivation for Vocational College Students based on the Integration of Posts, Courses, Competitions and Certificates

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Abstract: With the continuous advancement and deep implementation of China's "Belt and Road" strategy, cross-border e-commerce has become an important pillar of our country's foreign trade. In order to better promote the training effectiveness of cross-border e-commerce professionals in vocational colleges in China and address the imbalance between talent supply and demand in the market, this study focuses on the research of cultivating cross-border e-commerce competence among vocational college students based on the integration of "posts, courses, competitions and certificates". From the perspective of integrating "occupational courses", this study aligns the training of highly skilled cross-border e-commerce professionals with the needs of economic and social development and industrial transformation and upgrading, based on the skills standards of enterprise positions. From the perspective of integrating "competition courses", this study promotes the integration of competition-oriented courses by drawing on the concepts of the National E-commerce Competition's Cross-border E-commerce Live Streaming Competition and the Belt and Road Countries' E-commerce Skills and Data Analysis Competition. From the perspective of integrating "certification courses", this study organically combines vocational education and vocational training, using enterprise work tasks as carriers and incorporating enterprise certification content to cultivate students' analytical and problem-solving abilities. By focusing on the core courses reform, improving students' comprehensive quality, aligning with "real projects" in enterprises, achieving the integration of teaching resources, and implementing strategies such as deep integration of "1" and "X", this study aims to enhance the cross-border e-commerce competence of vocational college students.

Keywords: Cross-border E-commerce; "Posts, Courses, Competitions and Certificates"; Vocational Education; Cross-border E-commerce Competence.

1. Introduction

In the current context of national vocational education reform, vocational colleges need to align themselves with the national vocational education system reform direction based on their own vocational education system. This will facilitate the progressive positioning of talent development in schools and establish an effective teaching mechanism with their own teaching characteristics, known as the "Four-in-One" model. This model aims to produce more versatile and highly skilled talents for relevant industries in society. Cross-border e-commerce is one of the key industries advocated by the country at present, making it important to address the issue of how to cultivate talents that meet the needs of this industry's development. Although there have been some explorations and achievements in the development of the "Occupational Course Competition Certificates" model for cross-border e-commerce talent development in China, there are still many shortcomings in overall practical application. These include imprecise targeting of training objectives, lack of synchronization with industry development, insufficient depth in school-enterprise cooperation, and incomplete teaching staff. Therefore, it is necessary to rely on the integration framework of "Occupational Course Competition Certificates" to achieve precise targeting of objectives, promote the introduction of competitive teaching models in talent development, and strengthen the overall steady development of the organization. This will lead to the orderly improvement of the quality of cross-border e-commerce

talents and the enhancement of their abilities and competencies.

2. Analysis of the Current Situation of Cross-border E-commerce in Vocational Education in China

2.1. Analysis of the Current courses System of Cross-border E-commerce in Vocational Education

Through literature review and on-site research, we have studied the courses systems of cross-border e-commerce programs in 18 vocational colleges around China, including *Zhejiang Vocational College of Commerce* and *Beijing Vocational College of Business*. From the perspective of courses design, these vocational colleges offer a relatively comprehensive range of courses in the field of cross-border e-commerce, including foundational courses and core courses. Foundational courses cover subjects such as basic computer applications, English, microeconomics, introduction to e-commerce, principles of accounting, principles of management, and enterprise strategic management. Core courses include e-commerce marketing, cross-border logistics, e-commerce platform operations, principles and applications of databases, e-commerce laws and policies, network technologies and applications, and cross-border payment and risk management. In addition, there are specialized elective courses such as case analysis in cross-border e-commerce, e-commerce innovation and

entrepreneurship, e-commerce promotion and advertising, cross-border e-commerce marketing strategies, cross-cultural management in e-commerce, e-commerce finance and taxation, and cross-border e-commerce platform development. These courses meet the demands of students in terms of practical application and overall competence development.

Practical courses mainly involve internships, training, project practices, school-enterprise cooperation projects, cross-border e-commerce competitions, and innovation and entrepreneurship practices. These practical courses allow students to gain a deeper understanding of the specific operations and practical applications of cross-border e-commerce. However, the courses design in these institutions lacks systematization and depth, and there are significant differences in course offerings among different colleges, which create challenges in practical application. Furthermore, the courses design lacks forward-looking and innovative elements, and fails to keep up with the changes and developments in the market and industry, thereby affecting students' competitiveness in the job market. Lastly, the practical courses lack deep cooperation with enterprises and real-world applications, which limits students' practical skills and application levels. Therefore, it is necessary to design courses from the perspectives of "occupational courses," "competition courses," and "certification courses" in order to meet the industry's demand for cross-border e-commerce professionals and cultivate talents with professional ethics, practical abilities, and innovative competitiveness in the field.

2.2. Analysis of the Current Teaching Modes in Cross-border E-commerce Programs in Vocational Education

In terms of teaching modes, vocational colleges in cross-border e-commerce programs primarily adopt a teaching model where theoretical courses are the main focus, supplemented by practical courses. This model is mainly characterized by teacher-led instruction, classroom lectures, and self-study by students. The theoretical courses aim to provide students with a foundational understanding of cross-border e-commerce theory, while the practical courses focus on applying the theoretical knowledge through internships, project practices, and school-enterprise cooperation.

In addition to the basic teaching model, some vocational colleges also incorporate diversified teaching methods, such as case-based teaching, collaborative teamwork, online learning, and MOOC courses. These teaching methods help to enhance students' learning motivation and foster innovative thinking, stimulating their entrepreneurial spirit. They also cater to the diverse learning needs of students. Furthermore, some vocational colleges collaborate with enterprises and establish mentorship programs. Through this model, industry mentors provide practical guidance and share their experiences, allowing students to gain a better understanding of real-world business situations and industry dynamics. This helps improve students' practical skills and application levels. However, there are certain limitations in the teaching modes of cross-border e-commerce programs in vocational colleges. For example, there is a relative disconnect between theory and practice, and the practical courses lack deep cooperation with enterprises and real-world applications. Additionally, there is a lack of professional certification and assessment mechanisms for practical skills. Therefore, further exploration and implementation of teaching modes that better align with industry demands are needed. It is necessary to

strengthen the design and assessment of practical components, cultivating cross-border e-commerce professionals with professional ethics, practical abilities, and innovative competitiveness.

2.3. Analysis of the Current Status of Cross-border E-commerce Talent Cultivation in Vocational Education

In terms of talent cultivation, vocational colleges in cross-border e-commerce programs generally adopt a comprehensive talent cultivation model that emphasizes practical skills and professional ethics. The core elements of cross-border e-commerce talent cultivation in vocational education include foundational theoretical courses, practical courses, innovation and entrepreneurship education, and foreign language training. The theoretical courses cover relevant knowledge in cross-border e-commerce, international trade policies and regulations, and e-commerce technologies. The practical courses focus on developing students' practical skills and real-world experience through activities such as internships, project practices, and school-enterprise cooperation. Additionally, vocational colleges place importance on innovation and entrepreneurship education, providing students with entrepreneurship courses and practical opportunities to cultivate their innovative spirit and entrepreneurial abilities. Furthermore, foreign language training is an integral part of cross-border e-commerce education, requiring students to acquire a certain level of proficiency in English, Japanese, Korean, and other foreign languages to meet the demands of the international market.

However, despite the cross-border e-commerce talent cultivation model in vocational education aligning to some extent with industry demands, there are still some issues. Firstly, some vocational colleges lack deep cooperation with the actual industry, and the practical components are not closely aligned with real-world application scenarios, resulting in students lacking practical experience in actual operations. Secondly, the courses design in some vocational colleges is not comprehensive enough, lacking cutting-edge and practical content that can meet industry needs. Additionally, while vocational colleges focus on developing students' practical skills and professional ethics in cross-border e-commerce talent cultivation, there is a need to strengthen the cultivation of students' innovation and entrepreneurship abilities, including providing more entrepreneurship projects and practical opportunities. Moreover, there is a lack of professional certification and assessment mechanisms for practical skills in cross-border e-commerce talent cultivation in vocational colleges. The evaluation and development of students primarily rely on credit points and practical performance, lacking more detailed and scientific assessment methods.

3. Analysis and Research on the Integration of Vocational Courses, Competitions, and Certifications in Cross-border E-commerce Major in Vocational Education in China

To better cultivate the abilities required for cross-border e-commerce professional positions, it is necessary to analyze and research the elements of cross-border e-commerce competence that involve the integration of vocational courses,

competitions, and certifications. By conducting in-depth analysis of the demands and abilities required for cross-border e-commerce professional positions, it provides a basis for optimizing the content of courses and designing practical teaching methods. Taking the examples of the National College Students' E-commerce "Innovation, Creativity, and Entrepreneurship" Challenge in the fields of cross-border e-commerce live streaming and data analysis, as well as the Belt and Road Initiative and BRICS Countries Skills Development and Technological Innovation Competition in the field of cross-border e-commerce skills and data analysis, it involves developing teaching materials, courseware, and enhancing teachers' expertise. Furthermore, through the National 1+X Cross-border E-commerce B2B, B2C Vocational Skills Certification and Practical English Vocational Skills Certification outlines, it analyzes and improves the certification system and develops teaching standards. Additionally, the concept of "vocational courses,

competitions, and certifications" needs to be integrated into the courses design, incorporating the required abilities for actual work into the courses, ensuring that students acquire practical knowledge and skills with real-world application value. Through the analysis and research of the existing courses system, the courses design is upgraded and optimized, guided by the workflow of cross-border e-commerce professional positions, to establish a student competence cultivation model that integrates vocational courses, competitions, and certifications.

3.1. Analysis of the Elements of Cross-border E-commerce Competence for Vocational College Students through the Integration of Vocational Courses, Competitions, and Certifications

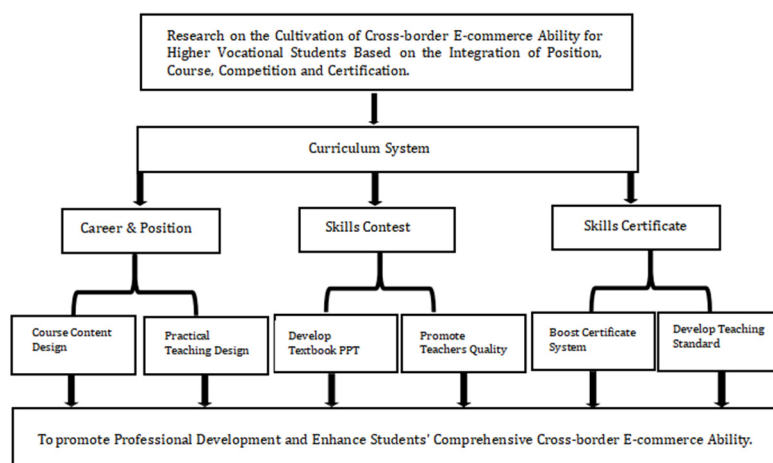


Fig 1. Elements of Cross-border E-commerce Competence for Vocational College Students-Vocational Courses, Competitions, and Certifications

To conduct research on the topic, it is necessary to clarify the logical relationship among the four elements of "vocational courses, competitions, and certifications" in the cultivation of cross-border e-commerce competence for vocational college students. Firstly, "vocational courses" serve as the standard for course learning. The courses content aligns with job requirements, professional standards, work processes, and production technologies. Through collaboration between schools and enterprises, teaching materials are jointly developed, reflecting job skills and other related aspects. Secondly, "competitions" play a crucial role in showcasing courses teaching. By establishing a sound competition mechanism at the national, provincial, and school levels, the professional competence of students can be effectively enhanced. Thirdly, "certifications" validate the industry-specific knowledge gained through course learning. By participating in certifications such as the 1+X Vocational Skills Level Certificate, comprehensive abilities required for professional activities and personal career development are integrated into the certification, expanding students' employability and entrepreneurial skills.

3.2. Research on the Integration of "Vocational Courses" for the Development of Cross-border E-commerce Competence in Vocational College Students

In order to better cultivate highly skilled talents in cross-

border e-commerce, it is necessary to align them with the needs of economic and social development as well as industrial transformation and upgrading. In this process, we need to first have a deep understanding of the skills standards required by enterprises. Based on this, we can design and optimize course content to ensure that the knowledge and skills acquired by students can be directly applied in practical work. Additionally, it is important to conduct in-depth research on the specific professional positions or job clusters involved, clearly identifying the skills and competencies required for different positions. This will help in building a competency-based courses system.

When designing the courses, the logical thread should revolve around the job positions. Courses should be set based on a systematic analysis of the process of completing work tasks, forming work projects that closely align with the actual job requirements. This ensures a tight integration between the course content and practical work, thereby enhancing students' practical abilities and employ ability.

In Vocational College Students based on "Vocational Courses" Integration through research, it has been identified that cross-border e-commerce companies and their internal job positions encompass six major job responsibilities, skill standards, and recommended courses for foundational knowledge, core specialization, elective specialization, and practical training.

3.2.1. Cross-border E-commerce B2B Operations

Specialist

The role of a cross-border e-commerce B2B Operations Specialist primarily involves the daily operations and maintenance of the cross-border e-commerce B2B platform. This includes tasks such as managing product data, monitoring and analyzing sales performance, handling orders, and providing after-sales services. The specialist needs to collaborate closely with various departments, coordinate and resolve operational issues, and improve operational efficiency and performance. The skill standards for this role include proficiently operating the cross-border e-commerce B2B platform and its management systems and tools, possessing strong data analysis and processing abilities, being capable of swiftly and accurately organizing, analyzing, and preparing reports, having excellent communication and coordination skills to collaborate smoothly with personnel from different departments, effectively managing relationships with external suppliers and clients, being familiar with cross-border e-commerce policies, regulations, and industry standards, conducting business operations in compliance with regulations and standards, understanding the development trends and market dynamics of the cross-border e-commerce industry, and being able to make timely adjustments to operational strategies. Based on the job responsibilities and skill standards, the following courses can be offered:

(1) *Cross-border e-commerce B2B Platform Operation* This course aims to cultivate students' familiarity with various operation methods and functionalities of B2B platforms, enabling them to acquire essential skills in B2B platform management. The course covers concepts, classifications, characteristics, and development trends of cross-border e-commerce B2B platforms, commonly used tools and software, product listing, inventory management, order management, transaction management, payment settlement, and other knowledge related to transaction flow management on B2B platforms. It also includes topics such as data analysis, statistics, report generation, and data mining on B2B platforms, marketing strategies and advertising techniques on B2B platforms, international trade regulations applicable to B2B platforms, logistics and transportation, security risks associated with B2B platforms, network security, and data protection.

(2) *Cross-border E-commerce Data Processing and Analysis* This course aims to equip students with data analysis and processing skills, enabling them to handle various types of data and create reports. The course covers topics such as data collection and cleansing, fundamentals of data analysis, data mining, machine learning, data modeling, data visualization, case studies in data analysis, and application of data analysis tools.

(3) *Cross-border E-commerce Laws and Regulations* This course aims to familiarize students with relevant policies, regulations, and industry standards in cross-border e-commerce, ensuring compliance with legal requirements in business operations. The course covers domestic and international trade regulations, regulations on e-commerce platform management, consumer rights protection, intellectual property rights protection, risk prevention, and compliance management.

(4) *Industry English* This course aims to develop students' English language proficiency in terms of industry-specific terminology, product knowledge, market trends, and other aspects, enhancing their competitiveness and communication

abilities in the international market. The course covers industry overviews, product knowledge, interpretation of inquiries, reading industry news, and industry culture and etiquette.

(5) *Business Correspondence in Foreign Languages* This course aims to cultivate students' skills in business correspondence writing and responses, fostering proficiency in writing and responding to foreign business letters and improving students' understanding and abilities in dealing with foreign trade culture and customer relations. The course covers topics such as foreign language communication in cross-border e-commerce B2B operations, correspondence for foreign customer development, inquiry letters, quotation letters, invitation letters for events, introduction letters for new products, inquiry replies, quotation replies, negotiation letters, payment method letters, complaints, rights protection, customer service, suggestions, appreciation letters, customer service and after-sales service letters, business etiquette, cultural considerations, and case analyses.

(6) *International Trade Theory and Practice* This course aims to enhance students' understanding of the basic concepts and processes of cross-border B2B business, international trade-related policies, regulations, and taxation, import and export trade operations, risk management through document handling, basic knowledge of international trade contracts, and payment and financial instruments in international trade. The course covers topics such as international trade fundamentals, international trade policies, regulations, and taxation, import and export trade operation processes, international trade contracts, international payments, international trade risk management, and international logistics and insurance.

(7) *Alibaba International Site Operations Practicum* This practicum course aims to develop students' proficiency in cross-border B2B operations by engaging in deep collaboration with industry partners. The course involves partnering with companies that provide students with sub-accounts on their platforms, and students are jointly guided by mentors from the companies and instructors from the school. The course primarily focuses on product uploading, image processing, and marketing promotion.

3.2.2. Cross-border E-commerce Operations B2C

Specialist

The cross-border e-commerce operations B2C specialist is responsible for the daily operational tasks on the cross-border e-commerce platform, including product management, order management, logistics management, and customer service. They adhere to platform rules and policies to ensure smooth platform operations. They also follow up on product promotion plans, coordinate promotional resources, and increase product exposure and sales. Additionally, they handle customer complaints and disputes, protect customer rights, monitor competitor activities, stay updated on market trends, and analyze and develop corresponding sales strategies.

The skill requirements for this role include a solid understanding of cross-border e-commerce platform operations and management, familiarity with platform operation models and rules, excellent communication and coordination skills, a strong sense of teamwork, the ability to effectively coordinate work across different departments, market analysis skills, the ability to develop sales strategies, good customer service awareness, and dispute resolution capabilities to handle customer complaints and protect

customer rights. They should also possess data analysis and processing skills specific to cross-border e-commerce platforms to optimize operational strategies and improve sales efficiency. Based on the responsibilities and skill requirements, the following courses can be offered:

(1) *Cross-border E-commerce Visual Design* This course aims to develop students' ability to perform visual design on cross-border e-commerce platforms, enabling them to independently handle interface design and advertising design on these platforms. The course covers topics such as an overview of visual design in cross-border e-commerce platforms, design software operation skills, design materials and composition, advertising design and creativity, and case studies in design practice.

(2) *Cross-border E-commerce B2C Operations* This course focuses on cultivating students' abilities in cross-border e-commerce B2C operations and promotion using platforms such as AliExpress or Amazon. The course covers topics including product uploading, store design, product page optimization, platform and store activity reporting, data analysis, logistics handling, order processing, and advertising strategies.

(3) *Cross-border E-commerce English* This course aims to develop students' proficiency in common English vocabulary and expressions used in cross-border e-commerce. It enables them to communicate fluently and accurately in English through business correspondence such as emails, phone calls, and video conferences. Students will also gain an understanding of relevant English terminology specific to the cross-border e-commerce industry. They will be able to read and comprehend cross-border e-commerce documents, reports, and data analyses, effectively utilize English information platforms for cross-border e-commerce, gather and organize market, competition, and trend-related information, and possess the ability to translate and write English documents and marketing materials related to cross-border e-commerce. The course covers the study of cross-border e-commerce English vocabulary and grammar, learning industry-specific English terminology, developing skills and practice in business communication through emails, phone calls, and video conferences in the context of cross-border e-commerce, using English information platforms for cross-border e-commerce and information filtering techniques, as well as translation and writing skills for cross-border e-commerce documents and marketing materials.

(4) *Cross-border Logistics Management* This course aims to equip students with foundational theories and practical skills in cross-border e-commerce logistics, enabling them to plan, organize, coordinate, and control logistics operations in the context of cross-border e-commerce. The course covers topics such as basic knowledge of cross-border logistics, cross-border e-commerce logistics processes, logistics cost control, selection of logistics service providers for cross-border e-commerce, logistics risk management, logistics data analysis and optimization, and practical applications of cross-border e-commerce logistics.

(5) *Cross-border E-commerce B2C Operations Practical Project*: This practical course aims to develop students' proficiency in cross-border B2C operations. It involves deep collaboration between the university and industry partners, where the company provides students with sub-accounts on their e-commerce platforms. Students will receive guidance from both company mentors and university instructors to enhance their cross-border B2C operational capabilities.

3.2.3. Cross-border E-commerce Livestream Operations Specialist

The cross-border e-commerce livestream operations specialist is responsible for the operation and management of cross-border e-commerce livestreaming platforms. Their main responsibilities include planning and executing livestreaming activities, hosting, guiding, and engaging with viewers during livestreams to increase viewership, fan interaction rates, and conversion rates. They are also responsible for maintaining and updating content on the livestreaming platform, including enhancing livestreaming rooms and updating content. Managing platform users, including registration, verification, and activities, is another aspect of their role. They work closely with team members and other departments to ensure the smooth execution of livestreaming activities. The required skills include effective communication and coordination abilities, a collaborative spirit for working with diverse individuals, the capability to independently plan and execute livestreaming activities, such as topic selection, program development, and organizing implementation. Additionally, they should be familiar with operating and maintaining cross-border e-commerce livestreaming platforms, proficient in livestreaming tools and techniques, knowledgeable about internet marketing and user psychology to increase viewership, fan interaction rates, and conversion rates. They should also stay updated on the development trends and market demands of the cross-border e-commerce industry to formulate appropriate livestreaming strategies. The following courses can be designed based on the job responsibilities and skill requirements:

(1) *Cross-border E-commerce Livestream Operations* This course aims to enhance students' cross-border e-commerce livestream operations capabilities. The courses cover an introduction to livestreaming platforms and selection, livestream planning and preparation, livestream content, necessary equipment for livestreaming, design and setup of streaming environments, livestream execution, and livestream review.

(2) *Cross-border E-commerce Livestream Operations Practical Project* This practical course aims to develop students' proficiency in cross-border e-commerce livestream operations. It involves deep collaboration between the university and industry partners, where the company provides students with sub-accounts on their B2B or B2C platforms. Students receive guidance from both company mentors and university instructors to enhance their cross-border e-commerce livestream operations capabilities.

3.2.4. Social Media Operations Specialist

The social media operations specialist is primarily responsible for managing and maintaining company accounts on social media platforms such as Facebook, TikTok, YouTube, LinkedIn, etc. They are responsible for planning and executing marketing campaigns, as well as monitoring, analyzing, reporting, optimizing, and advertising data. The required skills include solid experience in social media operations and designing marketing strategies, proficiency in operating and managing social media platforms, familiarity with social media tools, keen market insight and judgment to stay updated on market changes and trends, and the ability to analyze data and optimize marketing strategies based on the analysis results.

Based on the job responsibilities and skill requirements, the following courses can be designed:

(1) *Cross-border E-commerce Social Media Operations*

This course aims to develop students' capabilities and skills in social media operations. It covers topics such as an overview of social media platforms, social media operation strategies, content creation and dissemination, fan interaction and maintenance, and data analysis and optimization to achieve goals such as brand communication, fan engagement, and sales leads, thereby enhancing the company's brand image and business sales.

(2) *Intercultural Communication (Bilingual)* This course aims to cultivate students' awareness and abilities in intercultural communication, improving communication and maintenance levels on cross-border e-commerce social media platforms. It helps students understand the differences and conflicts that exist in intercultural communication and enhance their efficiency and quality of work on cross-border e-commerce social media platforms. The course covers topics such as an overview of intercultural communication, international business etiquette, intercultural communication skills, cross-cultural conflict resolution, intercultural communication on social media, and case studies of intercultural communication.

(3) *Business English Speaking* This course aims to enhance students' proficiency in spoken business English and boost their confidence and abilities in offline business communication with cross-border e-commerce B2B clients. The courses include topics such as business negotiation oral skills, business English speaking training, business English presentation skills, and business meeting conversation.

(4) *Business English Listening* This course aims to develop students' English listening skills in the context of cross-border e-commerce B2B business, including understanding customer demands, supplier requirements, product specifications, and other aspects. It focuses on improving listening abilities in various business activities, lectures, and other business English scenarios. The course covers topics such as business English listening techniques, cross-border e-commerce business English listening in various fields, industry-specific business English listening, business English listening training, and practical business English speaking exercises.

3.2.5. Cross-border E-commerce Optimization Specialist

The cross-border e-commerce optimization specialist is primarily responsible for website development, design, and SEO optimization and promotion activities for the company. Their main goal is to enhance the user experience and search engine rankings of the company's website, increase website traffic, and improve brand visibility and sales performance. The required skills include familiarity with platforms such as WIX and Shopify, the ability to independently handle website development and design, conducting keyword research, optimizing website structure, optimizing page content, and establishing high-quality backlinks for SEO purposes. They should also possess website data analysis capabilities, using tools like Google Analytics to analyze website traffic, traffic sources, user behavior, etc., in order to optimize conversion rates. Proficiency in English reading and writing is necessary for reading and translating English materials, as well as creating English SEO articles and website content. Additionally, teamwork and communication skills are important for collaborating with different departments within the company. Based on the job responsibilities and skill requirements, the following course can be designed:

SEO Optimization This course aims to develop students' ability to independently build and optimize websites,

familiarize them with basic concepts and methods of optimization, and provide practical skills for both on-page and off-page SEO. Students will learn keyword research and analysis, high-quality content creation, website architecture optimization, tag optimization, internal link optimization, external link building techniques, and how to improve website rankings and traffic. The course covers topics such as website construction and design, introduction to basic concepts and methods of SEO optimization, high-quality and high-authority article writing, website architecture optimization, tag optimization, internal link optimization, external link building, utilization of SEO tools, and case analysis of SEO optimization.

3.2.6. Cross-border E-commerce Operations Manager

The cross-border e-commerce operations manager is primarily responsible for overseeing the operational management of the company's cross-border e-commerce business. This includes developing and implementing operational strategies, managing and supervising the day-to-day operations of the platform, as well as team management, recruitment, and training. The required skills include strong experience in cross-border e-commerce operations and knowledge of related business aspects. They should be familiar with the operational management of cross-border e-commerce platforms, possess excellent data analysis and decision-making abilities, and be able to formulate and optimize operational strategies based on data insights. Effective communication, coordination, and team management skills are also essential. Based on the job responsibilities and skill requirements, the following specific courses and course content can be designed:

Based on the analysis and research above, the courses for cultivating cross-border e-commerce abilities for vocational students can be organized into professional foundation courses, core courses, elective courses, and practical courses, as depicted in the diagram below:

Cross-border E-commerce Operations Management This course aims to provide students with an in-depth understanding of cross-border e-commerce operations management knowledge and practices. It covers essential skills and tools in operations, enhances awareness and comprehension of the cross-border e-commerce industry, and develops the ability to adapt to industry changes and challenges. The course content includes an overview of cross-border e-commerce operations management, cross-border e-commerce market analysis, website operations and management, cross-border payment and risk control, and team management and leadership.

3.3. Conducting Practical Research on Developing Cross-border E-commerce Abilities in Vocational Students through Integrated "Competition-oriented Courses"

Vocational skills competitions are an important criterion for assessing the quality of vocational education and teaching, as well as a key driving force for professional teaching reform. From the perspective of the common structure of the industry, competitions, and education systems, the integration of demands, standards, processes, and evaluations is the core of the "production-competition-education" mechanism in vocational education. They can play a role in promoting "competition-driven teaching," "competition-driven

learning," and "competition-driven improvement."

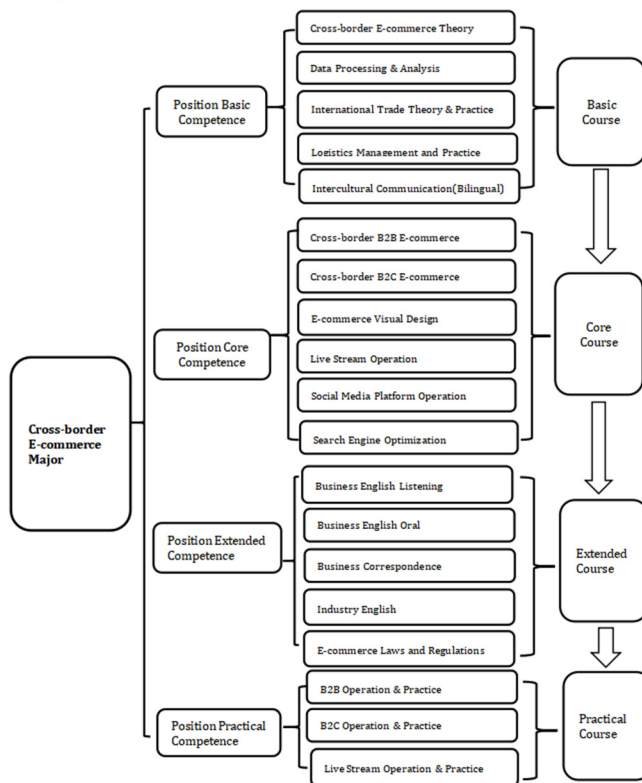


Fig 2. Courses Design for Developing Cross-border E-commerce Abilities in Vocational Students through Integrated Job-oriented Courses

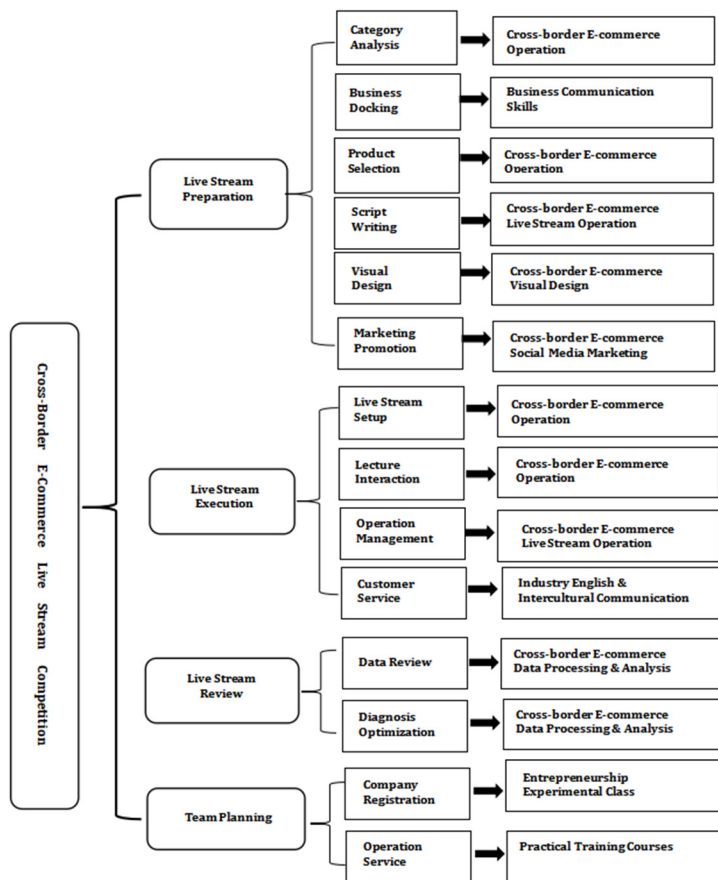


Fig 3. Course Design for Developing Cross-border E-commerce Live Broadcasting Abilities in Vocational Students through Integrated "Competition-oriented Courses"

Drawing on the competition concepts of the National College Students' E-commerce "Innovation, Creativity, and Entrepreneurship" Challenge in Cross-border E-commerce Live Broadcasting, as well as the Belt and Road Initiative and

the BRICS Countries' Skills Development and Technological Innovation Competition in Cross-border E-commerce Skills and Data Analysis, the integration of competition-oriented courses is promoted to drive teaching reform in the cultivation

of cross-border e-commerce professionals, and to play a role in shaping, guiding, benchmarking, and catalyzing vocational education reform. To achieve the goal of competition-driven learning, it is necessary to develop corresponding textbooks and courseware for competitions to drive the development of related disciplines. Competition results can be transformed into teaching resources by integrating competition experiences, competition specifications, theoretical knowledge, competition results, micro-course videos, etc., into the design of study plans and project topics, and by transforming some of the students' training results into popular teaching resources. Secondly, it is necessary to train teachers to understand the new requirements of enterprises for students' professional literacy and skills and to be aware of the cutting-edge trends in professional development, promoting self-improvement. Teachers should lead the teaching reform concept of "project-based learning, work task-oriented, action-guided" and form a consensus on the integration of "learning through doing, teaching through doing, and integration of teaching and learning."

3.4. Conducting Research on "Certification-Integrated" Approach for Developing Cross-border E-commerce Skills in Vocational College Students

To meet the occupational skill requirements for cross-border e-commerce positions and the goals of cultivating high-tech skilled talents, vocational education and vocational training are integrated. The courses are designed based on industry standards and incorporates enterprise certification content, aiming to develop students' analytical and problem-solving abilities. Firstly, we establish and improve the certification system for high-skilled talents, including evaluations for enterprise high-skilled talents and vocational qualifications in colleges, based on industry standards. This promotes the transformation from knowledge-based teaching to skill-based teaching and from teaching theories to practical learning. Secondly, the course modules are optimized based on the requirements of vocational skill level certification and professional skills competitions. The teaching team continues to explore models such as division of labor and collaboration, joint teaching by industry and academic mentors, and the sharing and co-construction of teaching resources among institutions. Teaching methods are improved, and course evaluation mechanisms are optimized to enhance the quality of talent development. We have also established a "1+X" vocational skills level certificate learning portfolio, which connects the new batch of "X" certificates in core courses. For example, the Cross-border E-commerce B2B Operations Specialist module is aligned with the "1+X" Cross-border E-commerce B2B Data Operations Vocational Skills Level Certificate (Intermediate, Advanced). Similarly, the Cross-border E-commerce B2C Operations Specialist module aligns with the "1+X" Cross-border E-commerce B2C Data Operations Vocational Skills Level Certificate (Intermediate, Advanced), and the Cross-border E-commerce Live-streaming Operations Specialist module aligns with the "1+X" Practical English Communication Vocational Skills Level Certificate (Intermediate, Advanced) or the "1+X" Cross-border E-commerce Live-streaming Operations Vocational Skills Level Certificate (Intermediate, Advanced), and so on. By utilizing both on-campus and off-campus training bases, we effectively enhance students' cross-border e-commerce capabilities. Lastly, we align with industry-

recognized certifications and improve the teaching standards. Based on industry and enterprise certification standards and the teaching reality of higher vocational colleges, we develop vocational skills education and training standards to guide the adjustment of professional course settings and teaching content in higher education institutions. This integration of academic education and vocational training establishes a smooth pathway for the growth of technical skilled talents. The comprehensive implementation of the credit bank system facilitates mutual recognition of vocational skills certificates and course credits, as well as the exchange standards and accumulation system, promoting the deep integration of the "1" (academic education) and "X" (vocational training). We encourage certified students to participate in national competitions such as the National College Student E-commerce Innovation, Creativity, and Entrepreneurship Challenge in cross-border live-streaming and data analysis, as well as innovation and entrepreneurship competitions, and the Belt and Road Initiative and BRICS Countries' Skills Development and Technological Innovation Competition in cross-border e-commerce skills and data analysis. This promotes significant improvement in professional skills and achieves deep integration of "Course, Competition, and Certification."

4. Conclusion

This study aimed to investigate the path for cultivating cross-border e-commerce professionals and focused on analyzing the impact of the integration of "Course, Competition, and Certification" on the cross-border e-commerce capabilities of vocational college students. It also explored the research on the integration of "Job-Related Courses, Competition Courses, and Certification Courses" for developing cross-border e-commerce skills in vocational college students. The findings of the study indicate that the integration of "Course, Competition, and Certification" has a positive impact on improving the cross-border e-commerce capabilities of vocational college students. Among them, the integration of "Job-Related Courses" combines students' theoretical knowledge with practical experience, promoting the enhancement of their practical abilities and problem-solving skills. The integration of "Competition Courses" allows students to strengthen their practical skills and abilities through participation in competitions, enhancing their teamwork and innovative thinking. The integration of "Certification Courses" enables students to obtain industry-recognized certificates, improving their employ-ability and career prospects.

The cross-border e-commerce talent development model, "Job-Related Courses, Competition Courses, and Certification Courses" in the Cross-border E-commerce program at Ruian School of Wenzhou Polytechnic, is an innovative training model. This model nurtures the abilities of cross-border e-commerce talents and enables students to better adapt to market demands. Under this model, students not only acquire theoretical knowledge but also gain practical experience, which is highly beneficial for enhancing their practical abilities and competitiveness in the job market. In addition, through the integration of "Competition Courses," students participate in practical activities such as the National College Student E-commerce Innovation, Creativity, and Entrepreneurship Challenge, which helps them further develop their practical skills and enhance their comprehensive qualities. As a specific case of cross-border e-

commerce practice, the Pioneers team from Ruian School participated in the 12th National College Student E-commerce Innovation, Creativity, and Entrepreneurship Challenge in the cross-border e-commerce practical competition and won the second prize nationwide in the live-streaming platform category. This competition provided students with hands-on experience in cross-border e-commerce operations, fostering their teamwork and practical skills while improving their practical abilities and professional competence in cross-border e-commerce. After the competition, the guiding teachers led the students to engage with society and collaborate with various dedicated and innovative enterprises such as *Zhejiang Chaolong Textile Machinery Co., Ltd.*, to connect with cross-border e-commerce training projects. Discussions and optimizations were carried out regarding the courses system, textbook development, job standards, cross-border competitions, and B2B and B2C live-streaming collaborations under the "Job-Related Courses, Competition Courses, and Certification Courses" model, yielding preliminary results. This collaboration between the college and enterprises not only meets the demands of the companies but also provides students with a better practical platform, allowing them to gain in-depth understanding of the actual operations and development trends of cross-border e-commerce, thus better adapting to market demands.

The effectiveness of the "Job-Related Courses, Competition Courses, and Certification Courses" cross-border e-commerce talent development model in vocational colleges suggests that vocational colleges can strengthen cooperation with enterprises in teaching models, promote various certification courses, and actively participate in various competitions to provide students with more practical opportunities. Additionally, vocational colleges need to enhance teacher training, improve their teaching abilities and professional competence, and provide better support for students' career development.

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