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Exploration of the Talent Cultivation Model for Applied Talents in Cross-Border E-Commerce from the Perspective of the Digital Economy

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Abstract: *The deep integration of the digital economy with cross-border e-commerce presents multifaceted competency requirements for applied talents. This study examines the core competency demands for talents within the context of the digital economy, while considering the current trends in the cross-border e-commerce industry and relevant educational practices. It identifies existing challenges in talent development and proposes innovative approaches from the perspectives of curriculum optimization, enhanced industry-education collaboration, faculty capability improvement, and international cooperation. The findings suggest that the cultivation of applied talents should be guided by industry demands, emphasizing the enhancement of practical skills and the integration of digital technologies. Furthermore, it advocates for the establishment of a collaborative educational framework involving government, educational institutions, industry, and enterprises to facilitate the dynamic alignment of talent supply with industry development.*

Keywords: *Digital Economy; Cross-Border E-Commerce; Applied Talents; Industry-Education Integration; Talent Cultivation Model*

1. Introduction

The digital economy, driven by information technology, has restructured global trade patterns. As a significant vehicle of this transformation, cross-border e-commerce is experiencing explosive growth. According to statistics from the General Administration of Customs of China, the import and export volume of cross-border e-commerce is expected to grow by over 30% year-on-year in 2024, becoming a new engine for foreign trade growth. However, the cross-border e-commerce industry faces challenges related to an imbalance in talent supply and demand, with an anticipated talent gap of 4.6 million, particularly in the areas of composite and practical talents. In this context, exploring a talent cultivation model that meets the needs of the digital economy has become a common subject for academia and industry.

With the deepening of global economic integration, cross-border e-commerce, as a new business model, has not only changed traditional trade methods but also provided new growth points for the economic development of various countries. According to the "2023 Global E-Commerce Report," the global e-commerce market is expected to reach $6.54 trillion by 2025, with cross-border e-commerce occupying a significant share. To address this trend, higher education institutions in China face unprecedented opportunities and challenges in cultivating cross-border e-commerce talents. [1].

2. Literature Review

2.1 Digital Economy and the Transformation of Higher Education

Scholars both domestically and internationally generally agree that the digital economy poses a dual challenge to higher education: "digital transformation" and "restructuring of talent." Anderson (2020) points out that future education will exhibit trends of platformization, intelligence, and personalization. [6]. Chinese scholar Zhang Haitao (2022) believes that the digital economy is driving universities to shift from a "knowledge transmission" model to a "competency-oriented" model. [5].

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2.2 Research on the Competency Structure of Cross-Border E-Commerce Talents

Existing studies have conducted multi-dimensional analyses of the competency structure of cross-border e-commerce talents. Liu Haiyan et al. (2021) argue that cross-border e-commerce talents should possess platform operation capabilities, cross-cultural communication skills, data analysis abilities, and entrepreneurial innovation skills. [3] Wang Zhigang (2022) highlights that language proficiency, marketing planning, and understanding of international regulations are core competencies. [4].

2.3 Research on Talent Cultivation Models for Applied Talents

In recent years, terms like "integration of industry and education," "collaboration between schools and enterprises," and "project-driven" have become keywords in the reform of applied higher education. The Ministry of Education's "Implementation Plan for National Integration of Industry and Education Pilot" (2021) explicitly proposes the construction of a dual-driven talent system of "higher vocational education + applied undergraduate education." However, in the field of cross-border e-commerce, systematic research remains limited, especially regarding integration pathways in the context of the digital economy, which still need to be explored. [2]

3. Core Competency Requirements for Cross-Border E-Commerce Talents in the Digital Economy

3.1. Digital Technology Application Ability

Cross-border e-commerce operations heavily rely on data analysis, artificial intelligence, and blockchain technology. Talents need to master tools such as Python and big data analysis software, as well as possess capabilities in cross-border platform operations and digital marketing, such as product selection and traffic optimization on platforms like Shopee and Amazon. By making data-driven decisions, companies can more accurately grasp market dynamics and enhance operational efficiency. Specifically, students need to learn how to use data analysis tools (e.g., Tableau, Power BI) for market trend forecasting and apply machine learning algorithms to optimize advertising effectiveness. Additionally, understanding blockchain technology can help students grasp emerging applications such as digital currency payments and logistics tracking, enhancing their competitiveness in cross-border e-commerce.

3.2. Interdisciplinary Composite Ability

Cross-border e-commerce encompasses knowledge from multiple disciplines, integrating international trade, foreign language skills (especially in less commonly taught languages), legal compliance, and supply chain management. For instance, familiarity with international payment settlement, cross-border logistics design, and intellectual property risk management is essential. This interdisciplinary knowledge structure enables talents to navigate complex international environments with ease. Particularly in legal compliance, students need to understand the e-commerce laws and regulations of various countries to avoid legal disputes in international transactions. Furthermore, possessing marketing knowledge can assist students in formulating effective market entry strategies, enhancing product competitiveness in target markets.

3.3. Practical and Innovative Ability

The rapid iteration of the industry requires talents to quickly adapt to new business models (such as live commerce and social commerce) and solve practical problems through case analysis and hands-on projects. The cultivation of innovative ability is particularly important, as companies expect talents to propose novel solutions in response to market changes. To this end, educational institutions should encourage students to participate in various innovation and entrepreneurship activities, fostering their project management skills and teamwork spirit. For example, by organizing cross-border e-commerce entrepreneurship competitions, students can practice their innovative thinking and practical abilities in a real business environment, thus laying a solid foundation for their future career development.

3.4. Cross-Cultural Communication and Collaboration Ability

In a globalized context, cross-border e-commerce talents must understand cultural differences in

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target markets, master cross-cultural negotiation skills, and adapt to global team collaboration models. This not only helps enhance a company's market competitiveness but also promotes international cooperation and exchange. Students should learn how to communicate effectively in multicultural environments, avoiding misunderstandings and conflicts arising from cultural differences. Moreover, cultivating cross-cultural leadership skills is crucial, enabling students to better manage diverse teams and improve overall team performance in their future careers.

4. Existing Issues in Cross-Border E-Commerce Talent Cultivation

4.1 Curriculum System Lagging behind Industry Demand

Currently, many higher education institutions still emphasize traditional theoretical courses, lacking practical content related to cross-border e-commerce platforms and digital marketing. Some institutions continue to focus on traditional international trade courses without incorporating real project cases, resulting in students facing difficulties in applying their knowledge in actual work settings. The lag in curriculum updates makes it challenging for students to grasp the latest industry dynamics and technological applications, affecting their employment competitiveness. Therefore, educational institutions need to regularly evaluate course content to ensure alignment with industry developments and timely incorporate emerging technologies and market trends.

4.2 Insufficient Depth of Industry-Education Integration

Collaboration between schools and enterprises often remains at the level of internship agreements, with insufficient enterprise involvement in course development and faculty training, leading to a disconnect between teaching and job requirements. The actual needs of enterprises are not promptly reflected in the educational process, resulting in a significant gap between talent cultivation and market demand. To improve this situation, educational institutions should actively establish long-term cooperative relationships with enterprises to jointly develop courses and practical training projects, ensuring that students acquire knowledge and skills that align with industry needs. Additionally, enterprises should participate in all aspects of talent cultivation, from curriculum design to internship arrangements, creating a positive interaction.

4.3 Weak Digital Competence of Faculty

Most teachers lack practical experience in cross-border e-commerce, with a low proportion of dual-qualified instructors. For instance, only 67% of faculty at Hunan University of Science and Technology have transitioned to dual-qualified status through industry practice. Insufficient practical ability among teachers directly affects the effectiveness of practical teaching for students. To address this issue, educational institutions should increase training efforts for faculty, encouraging them to engage in industry practices to enhance their professional competence. Additionally, industry experts can be invited as part-time lecturers to bring the latest industry dynamics and practical experiences into the classroom.

4.4 Insufficient International Cultivation Resources

Limited coverage of less commonly taught language courses and a lag in the construction of cross-cultural training platforms hinder the ability to meet the demands of emerging markets in Southeast Asia and the Middle East. The lack of international cultivation resources restricts students' global perspectives and cross-cultural communication abilities. Educational institutions should actively expand international cooperation, seeking exchanges and partnerships with foreign universities to establish joint cultivation programs that enhance students' international competencies. Furthermore, increasing the provision of less commonly taught language courses can help meet the needs of different markets and cultivate talents with multilingual capabilities.

4.5 Uneven Allocation of Teaching Resources

Many higher education institutions face uneven allocation of teaching resources in cross-border e-commerce talent cultivation, particularly in investments in laboratories, training bases, and teaching software. For example, some local colleges and universities, due to financial and technical constraints, are unable to provide sufficient practical training equipment and software support, leading to students

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lacking necessary practical opportunities. This uneven distribution of resources not only affects teaching quality but also restricts students' practical capabilities.

4.6 Weak Career Planning Awareness among Students

Many students enter higher education without a clear understanding of the overall situation and career development paths in the cross-border e-commerce industry, resulting in a lack of goal orientation during their studies. This weakness in career planning awareness often leads students to be passive in course selection and internship arrangements, impacting their career development. Therefore, universities should strengthen career planning education, guiding students to clarify their personal development goals and enhance their professional qualities.

5. Innovative Pathways for Cultivating Applied Talents

5.1 Constructing a "Digital + Professional" Curriculum System

Layered design of the curriculum chain: The foundational layer should include courses such as "Python Data Analysis" and "Blockchain Finance"; the integration layer should add courses like "Data-Driven Operations in Cross-Border E-Commerce" and "Digital Trade Practices"; the practical layer should introduce virtual simulation projects, such as "Comprehensive Training on Cross-Border E-Commerce Bonded Import Processes." This tiered curriculum design can help students gradually master necessary skills and form a systematic knowledge structure.

Strengthening case and project-based teaching: Use real data from enterprises to design teaching scenarios, such as the supply chain optimization case of Shenzhen Anjun Logistics. Through the analysis of real cases, students can better understand the integration of theory and practice. Additionally, encouraging students to participate in industry competitions and project practices can enhance their practical skills and innovative thinking.

5.2 Deepening the Collaborative Education Mechanism among Government, Schools, Industries, and Enterprises

Co-building industry colleges and training bases: Establish long-term internship bases with cross-border e-commerce companies, regularly organizing students for internships and practical experiences to enhance their practical skills. Through deep cooperation with enterprises, students can develop their skills in real working environments and stay updated on industry trends.

Implementing a "Dual Mentor System": Involve enterprise mentors in course development and graduation project guidance. For example, Qingdao University of Technology (Linyi) has invited customs experts to teach, enhancing students' practical skills. The dual mentor system can provide students with richer learning resources and guidance, ensuring they gain firsthand industry experience during their studies.

5.3 Enhancing Faculty Digital and Practical Abilities

Implementing the "Three Advances Plan": Faculty members should engage in industry positions (averaging 42 occurrences per year), participate in platform training (e.g., Huawei HCIA certification), and collaborate in interdisciplinary teams, aiming to increase the proportion of dual-qualified instructors to 67%. Through this approach, faculty can continuously update their knowledge, improve teaching quality, and align course content with industry developments.

Introducing an industry certification system: Encourage faculty to obtain qualifications such as "Cross-Border E-Commerce Specialist" and "Digital Marketing Specialist," promoting alignment between teaching and industry standards. Industry certifications not only enhance faculty professional capabilities but also provide students with more authoritative learning resources, helping them secure better opportunities in their future careers.

5.4 Expanding International Cultivation Pathways

Building a curriculum for less commonly taught languages: Add courses in Russian, Arabic, and other languages aimed at the "Belt and Road" markets, strengthening cross-cultural communication training.

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This targeted language training can help students better adapt to international market demands and enhance their cross-cultural communication skills.

Establishing international exchange platforms: Collaborate with overseas universities and e-commerce platforms (such as Lazada and Shopee) to conduct joint cultivation and overseas internship projects. Through international exchanges, students can broaden their perspectives, enhance their overall qualities, and understand the business environments and cultural backgrounds of different markets.

5.5 Improving Dynamic Evaluation and Incentive Mechanisms

Introducing diverse evaluation indicators: Combine enterprise feedback, competition results (such as the National Business English Practical Competition), and innovation and entrepreneurship achievements to construct a competency-oriented evaluation system. A diversified evaluation system can more comprehensively reflect students' overall abilities and promote their engagement in the learning process.

Establishing a talent certification system: Collaborate with industry associations to develop standards for cross-border e-commerce talents, achieving "integration of courses and certifications." Through talent certification, students' employment competitiveness and social recognition can be enhanced, providing them with more opportunities for career development.

5.6 Introducing Industry Internships and Practical Projects

Establishing internship bases: Create long-term internship bases with cross-border e-commerce companies, regularly organizing students for internships and practical experiences to enhance their practical skills. Through deep cooperation with enterprises, students can develop their skills in real working environments and stay updated on industry trends.

Promoting project-driven learning: Introduce a "project-driven" teaching model, using real cross-border e-commerce projects to facilitate student learning through practice. For example, a comprehensive simulation project can be designed, covering everything from market research to product listing, logistics distribution, and after-sales service, comprehensively training students' overall capabilities.

5.7 Strengthening Academic and Industry Interaction

Hosting industry forums and seminars: Regularly organize forums and seminars in the cross-border e-commerce industry, inviting industry experts, corporate executives, and scholars to discuss industry development trends and talent needs. Such events not only provide students with the latest industry information but also promote communication and cooperation between schools and enterprises.

Establishing alumni networks and resource-sharing platforms: Utilize alumni resources to invite successful alumni to share their experiences and provide internship and employment information within the industry. By establishing an alumni network, more career development opportunities can be offered to current students, helping them better integrate into the industry.

5.8 Strengthening Innovation and Entrepreneurship Education

Adding innovation and entrepreneurship courses: Incorporate related courses into the curriculum, such as "Practical Cross-Border E-Commerce Entrepreneurship" and "Innovative Thinking and Practice," to cultivate students' entrepreneurial awareness and capabilities. Through these courses, students can better understand the challenges and opportunities in the entrepreneurial process, enhancing their innovative abilities.

Supporting student entrepreneurial practices: Establish special funds and resources to support students in undertaking cross-border e-commerce entrepreneurial projects, encouraging them to apply their knowledge in practice. Through entrepreneurial practices, students can gain deeper insights into market demands and enhance their overall qualities.

6. Case Studies

6.1 The "Business English + Cross-Border E-Commerce" Model at Ankang College

By optimizing course groups (e.g., practical logistics in cross-border e-commerce, new media graphic

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design) and jointly developing practical projects with enterprises, students' employment competitiveness has significantly improved, contributing to regional rural revitalization. The successful experience of Ankang College demonstrates that industry-education integration can not only enhance students' practical abilities but also support local economic development. Particularly in rural e-commerce development, cultivating talents with cross-border e-commerce capabilities has facilitated the transformation and upgrading of the local economy.

6.2 The "Three-Dimensional Synergy" Practice at Hunan University of Science and Technology

With the main line of "Digital Foundation, Industry-Education Integration, Serving Local Needs," a virtual simulation experiment platform has been constructed, with students winning over 100 national competition awards annually and maintaining an employment rate of over 90%. The practices at Hunan University of Science and Technology prove that an innovative talent cultivation model can effectively enhance students' overall qualities and employability. Through deep cooperation with enterprises, the school can stay informed about industry needs and adjust course offerings to ensure that students' knowledge aligns with actual work requirements.

6.3 The Industry-Education Integration Forum at Harbin Guangsha University

Through cross-disciplinary collaboration (e.g., integrating economics, management, and law) and diversified teaching evaluations, the curriculum system aligns with the digital economy strategy of Heilongjiang Province, delivering high-quality applied talents. The exploration at Harbin Guangsha University provides valuable insights for other institutions. By hosting industry-education integration forums, the school can gather industry experts and scholars to discuss directions and strategies for talent cultivation, forming a positive interactive mechanism.

6.4 The "International Perspective on Cross-Border E-Commerce Talent Cultivation" Model at Nanjing University of Posts and Telecommunications

Nanjing University of Posts and Telecommunications has partnered with internationally renowned universities to offer "International Cross-Border E-Commerce" courses, combining real cases from international markets to cultivate students' global perspectives and cross-cultural communication abilities. The university has also collaborated with e-commerce giants like Alibaba and JD.com to provide abundant internship opportunities, allowing students to practice in real business environments. Through this internationalized talent cultivation model, students' employment rates and career development prospects have significantly improved.

6.5 The "Industry-Education Integration" Case at Southwestern University of Finance and Economics

Southwestern University of Finance and Economics has established "industry-education integration" partnerships with multiple cross-border e-commerce enterprises, conducting "order-based" talent cultivation projects. Enterprises customize course content based on their needs, ensuring that students' knowledge aligns with job requirements. Additionally, the school encourages students to participate in actual projects from enterprises to enhance their practical abilities. This model has fostered positive interaction between the school and enterprises, promoting effective talent cultivation.

7. Conclusions

The continuous evolution of the digital economy requires dynamic adjustments to the talent cultivation model for cross-border e-commerce. In the future, it is essential to further integrate resources from government, schools, and enterprises, explore the application of emerging technologies such as artificial intelligence and the metaverse in teaching, and construct a lifelong learning system. Additionally, strengthening alignment with international standards will promote the globalization of China's experience in cross-border e-commerce talent cultivation, providing talent support for the development of global digital trade. By continuously optimizing the talent cultivation model to meet new industry demands, China's cross-border e-commerce talents will be poised to secure a place in the global market.

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