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# Research on Challenges and Countermeasures of E-Commerce Education in the Background of Digital Economy

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## Abstract

With the innovation of technology, the digital economy is booming, bringing about profound changes in society and the economy as a whole, accompanied by the rapid iterative development of e-commerce, the demand for e-commerce professionals is gradually increasing, and the requirements for talents are gradually improving, e-commerce education is gradually growing at the same time in the faculty, teaching, teaching materials, cultivation objectives, etc., also faced with a number of challenges and dilemmas. For this reason, it is necessary to follow the market and technological development, conform to the development of the digital economy, and cultivate high-quality e-commerce talents.

## Keywords

digital economy; e-commerce; education

## 1.Introduction

E-commerce has become an important driver of world economic growth over the last two decades. According to the United Nations Conference on Trade and Development, in 2020, global online transactions totaled $26.7 trillion, a 4% increase from 2019. This figure represents a share of the global retail industry, from 16% in 2019 to 19% in 2020. With the continuous advancement of online technology and the widespread use of smartphones, people's consumption habits have changed, contributing to the rapid development of e-commerce. The use of online platforms for marketing products and services can expand the market and effectively improve operational efficiency, making it an important part of business development. However, the rapid development of e-commerce has also revealed many problems, especially in terms of talent training.

With the development and depth of e-commerce, the requirements for professional talents continue to increase. The talent demand trend of e-commerce enterprises is the need for both traditional business knowledge reserves, but also with digital technology, network marketing and data analysis capabilities of composite talents. In the wave of digital transformation of the world economy, e-commerce professional and technical personnel training is particularly important, the key to the future direction of development of e-commerce education and the corresponding education policy and strategy development is to explore how e-commerce education should be responsive to market demand. This paper takes e-commerce education in higher vocational colleges and universities as the research object. Theoretically, it can help educators and researchers better understand the current core issues and development trends of e-commerce education, and it also has certain

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reference value in practical application. Through the in-depth analysis of this issue, it can help enterprises and educational institutions to carry out better collaboration and cultivate e-commerce professionals who meet the needs of the market, so as to promote the sustainable and healthy development of the e-commerce industry. Thus, it is of great theoretical and practical significance to improve and develop e-commerce education in China, and to promote e-commerce talent cultivation and innovative development in China.

## 2. Overview of developments in the teaching of e-commerce

### *2.1 Development history of e-commerce teaching in China*

The teaching of e-commerce has developed in response to the rapid emergence of the e-commerce industry. Since the launch of the Internet commercial program in 1991, e-commerce has been developing rapidly, leading to a growing demand for related education and training, and in the mid-1990s, many schools have offered courses related to it. At the beginning of e-commerce education, teaching was limited to basic Internet applications and simple online transactions, with courses focusing on basic e-commerce technologies such as web design and online payment systems. At the beginning of the twenty-first century, e-commerce education underwent a very important transformation and began to extend to broader business areas, such as e-marketing, supply chain management, e-commerce strategy and corporate resource planning. However, with the diversification of e-commerce models and the increasing sophistication of technology, e-commerce education has now become a comprehensive discipline that involves many aspects of technology, management and marketing.

### *2.2 E-commerce education at all levels of education in the country*

At present, e-commerce education has been deepened at all levels of education, showing a hierarchical progression and diversified teaching objectives in terms of syllabus and content.

(1) Secondary school level: learning of basic Internet knowledge. Information technology courses are offered in general high schools, which mainly introduce the basic applications of the Internet, simple e-commerce concepts, online trade security, etc.; some secondary vocational schools have e-commerce majors, which mainly study basic online store editing, customer service and online marketing. The teaching objective at this stage is to cultivate students' basic knowledge and ability in e-commerce, so as to lay a solid foundation for their future study and work.

(2) University level: systematic and specialized e-commerce education. Courses cover all areas of e-commerce, including the design and development of e-commerce systems, online marketing strategies, electronic payment systems, e-commerce laws and regulations and ethics. In addition, practical training courses are also set up to cultivate students' application ability, through project learning, simulation games, internships and other ways to enhance students' professional skills.

(3) Graduate level: focusing on strategic level knowledge and advanced management skills training. At the graduate level, e-commerce education deepens to cover e-commerce strategy development, global e-commerce environment, e-commerce project management, emerging e-commerce science and technology research and so on. Graduate education generally requires original research work to improve scientific research and creative thinking.

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### *2.3 Case studies and comparative analysis*

A representative example is the Digital Business Program at the Massachusetts Institute of Technology (MIT), which combines theory and practice and allows students to apply what they have learned in simulated business situations through courses on modern e-commerce technology, business models, strategic management, and so on. Another example is Stanford University's E-Business Program, which focuses on technological innovation and business management, encouraging students to develop new e-business methods and entrepreneurial plans.

In a word, e-commerce education should be reformed and improved continuously in the development of e-commerce industry, and should pay more attention to practical teaching, multidisciplinary integration, globalization and digital development under the guidance of market demand. In the rapid development of the e-commerce industry today, new business models, new technologies emerge one after another, e-commerce teaching puts forward higher requirements, the need to deepen the collaboration with the industry, enhance the combination of production, learning and research, strengthen the cooperation between schools and enterprises, to provide more teaching content with the combination of enterprise practice while providing technical support and talent support for enterprises. At the same time, under the background of globalization and digitalization, e-commerce education should pay more attention to cross-cultural communication and collaboration, in order to cultivate e-commerce talents with innovative and international perspectives.

## 3. Challenges and dilemmas facing e-commerce education

Against the background of the rapid development of network technology and the acceleration of the process of global integration, e-commerce has become a major driving force for economic growth in China. However, there are still many difficulties and challenges in the development of e-commerce education in China.

### *3.1Lack of teachers*

E-commerce is an emerging discipline, but there is currently a lack of full-time faculty. In the training of talents need both technical theory and business theory, but most of the current professional teachers only have economic management or computer science professional background, the integration of professional knowledge is not enough. To solve this problem, it is necessary to strengthen the introduction and training of the faculty, strengthen the training of e-commerce professionals at the same time to strengthen the professional training of the existing faculty of e-commerce majors, to enhance the level of knowledge and the ability to research.

### *3.2Lack of quality teaching materials*

The concept and practice of e-commerce are introduced by foreign countries, and e-commerce is a new discipline in China, especially in the construction of teaching materials is still in the initial exploration stage, and it is difficult to connect with the actual needs of e-commerce industry under the rapid development of digital economy in terms of timeliness. The existing e-commerce textbooks and teaching aids in higher vocational colleges and universities can be roughly divided into two categories: one is the translation of foreign-language textbooks, which is easy to read but has limited adaptability; the other is the textbooks written by domestic scholars, which are generally not in-depth enough, emphasizing the introduction of the

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basic knowledge, and lacking in the description of the specific aspects of the e-commerce activities such as the security and the process, as well as lacking in the authoritative nature.

### *3.3 Lack of opportunities for practical training*

E-commerce majors have strong practicality, but in the current teaching, students do not have many opportunities for internship. Due to the lack of interactive learning environment (e.g. laboratory teaching, experimental demonstration, etc.) and intuitive perception of laboratory facilities (e.g. WEB server, FTP server, etc.), the traditional teaching method of lectures can hardly arouse the students' interest in learning and sense of immersion, so that the students can't have a deeper understanding of the business process and technical application of e-commerce.

### *3.4Lack of convergence with international standards*

Global e-commerce has become the trend of future development, which also requires e-commerce talents to have international vision and cross-cultural communication skills. However, at present, the curriculum content, teaching cases and cooperation projects of e-commerce education in China are still dominated by the domestic market, lack of international vision and fewer global case studies, which restrict students' understanding of international e-commerce and the cultivation of their thinking, and thus affect their competitiveness in the international market.

### *3.5The dilemma of teaching in a way that is contrary to the laws of student development*

E-commerce education should focus on cultivating students' creative thinking and problem solving ability, while the current teaching methods are mostly based on imparting theoretical knowledge, lacking the atmosphere to stimulate students' independent inquiry and creativity. This teaching method violates the law of independent learning and growth of students, and cannot effectively mobilize students' learning initiative and creativity, which restricts the development of their comprehensive quality.

### *3.6Inadequate interface with market needs*

At present, the main goal of e-commerce education in China is market-oriented, but there is still a big gap between its teaching content, talent training and market needs. In terms of teaching content, on the one hand, it has not kept up with the latest e-commerce technologies and business models, such as big data analysis, artificial intelligence, cloud computing, the Internet of Things, etc. in the field of e-commerce; at the same time, in the process of teaching, there is a lack of cultivation of soft skills (teamwork, communication and coordination, leadership, etc.) necessary for modern e-commerce talents.

## 4.Trends in e-commerce education in the digital economy

The development of the digital economy has had a direct and far-reaching impact on e-commerce education. In order to adapt to technological changes, e-commerce education should research and teach emerging technologies such as artificial intelligence, virtual reality, blockchain, big data analysis, cloud computing, mobile commerce, and cross-border e-commerce. On this basis, e-commerce professionals centered on "sustainable development" and "social responsibility" are proposed.

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Artificial Intelligence and Machine Learning: The application of artificial intelligence and machine learning to e-commerce education can intelligently adjust the course content and difficulty according to the students' learning process and preferences, optimize the personalized learning experience, and enhance the teaching effect. In addition, artificial intelligence technology can also analyze the case data accumulated in teaching to find out the problems existing in the teaching process and improve the teaching effect. On this basis, the teaching model of "tailor-made teaching" is proposed.

VR and AR:VR (Virtual Reality) and AR are two technologies that are revolutionizing e-Business Education. Through the simulation of the e-business field, students are able to operate in a virtual network environment and develop their practical application and problem-solving skills. Using immersion teaching methods, students can experience every step of e-business, stimulate their interest in learning, enhance their creativity, and deepen their understanding and application of what they have learned.

Blockchain technology: This technology has been widely used in e-commerce to ensure the security and transparency of transactions through blockchain technology. In addition, blockchain technology provides a brand-new business model for e-commerce, which requires updating the teaching content to adapt to the new topics. Through the study of blockchain-related knowledge and practical training, students' creative thinking ability and security awareness can be improved.

Big data analysis: With the explosive growth in the number of e-commerce transactions, big data analysis has become one of the most important tools, providing new methods for dealing with complex e-commerce issues. The curriculum of e-commerce majors increases the teaching and practical training of big data analysis knowledge, so that students can collect, process and analyze huge amounts of information, improve their sensitivity to data, and cultivate students' insight into consumer behavior and market trends, so as to optimize business decision-making and enhance their ability to compete in the market.

Cloud computing and service industry: Cloud computing can make e-commerce more flexible and make business operations more efficient and less costly. In e-commerce education, strengthening the teaching of cloud computing, PaaS, IaaS and other courses will help to improve students' understanding of modern e-commerce business operation mode, lay a good foundation for future employment, and enhance their innovation and entrepreneurship.

Mobile commerce: Driven by cell phones, mobile Internet and other emerging technologies, mobile commerce has gained a pivotal position in e-commerce. In e-commerce education, strengthening the teaching of mobile application development and maintenance, mobile payment system, mobile platform marketing and customer service can equip students with the ability to carry out commercial activities in the mobile environment and improve their scientific and technological knowledge and market sensitivity.

Cross-border e-commerce: cross-border e-commerce is developing rapidly in the context of global integration, and e-commerce education should keep pace with the times and strengthen the teaching of cross-border e-commerce. The course content includes international trade regulations, cross-cultural communication skills, international logistics and payment systems, to enhance the competitiveness of students in the international e-commerce market, cross-cultural communication skills and collaboration skills.

Sustainable development and social responsibility: As consumers pay more and more attention to sustain-

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able development and CSR, e-commerce enterprises have also gradually noticed this issue and put forward "sustainable development strategy", "green packaging", "green logistics" and other contents. Green Packaging", "Green Logistics" and so on. By learning about sustainable development and CSR, students can enhance their sense of responsibility towards the environment and the company.

## 5. Recommendations for countermeasures

### *5.1 Strengthening education in the application of science and technology*

In e-commerce education in accordance with changes in the market and technology, timely adjustment of teaching content, while encouraging and supporting domestic researchers to write e-commerce textbooks with high authority and practical value. Artificial intelligence, machine learning, virtual reality, augmented reality, blockchain, so that students can keep pace with the times and improve their comprehensive quality. Strengthen the study of emerging technologies, so that students can not only have an understanding of the use of cutting-edge technology in e-commerce, but also cultivate students' innovative ability in the practical application of e-commerce, and consolidate the professional and technical foundation of e-commerce majors in higher vocational colleges and universities.

### *5.2Enhancing substantive teaching and case studies*

E-commerce education in higher vocational colleges and universities should create a good learning environment for students. On the one hand, it should increase capital investment, improve experimental equipment, reform internship teaching methods, and cultivate students' hands-on ability. On the other hand, it should strengthen the collaboration with enterprises, so that students have the opportunity to participate in practice, project-driven learning and practical case study. Through practical teaching and case studies, students can not only apply what they have learned to actual production, but also effectively improve their hands-on ability, laying a good foundation for future employment.

### *5.3Developing an international business perspective*

In the era of globalization, international competition in the business field is becoming more and more intense, placing higher demands on entrepreneurs and professionals in terms of their international vision and cross-cultural communication skills. In order to adapt to this development trend, the education sector should actively promote the cultivation of internationalized business talents so as to enhance China's competitiveness in the global economic arena. By actively introducing advanced educational ideas and classic e-commerce cases in the world, expanding international exchanges and cooperation, and by strengthening the cultivation of international business vision, cross-cultural communication ability, as well as international vision and international collaborative spirit, it will help our students to carry out e-commerce better under the background of globalization, and to contribute to our country's strength in the global economic arena. To this end, the education sector and enterprises should work together to create favorable conditions for the cultivation of internationalized business talents and help China's sustainable economic development.

### *5.4Emphasis on sustainable development and social responsibility.*

Lead students to explore and innovate sustainable e-commerce business models, such as environmentally friendly packaging, green logistics solutions, etc., to cultivate students' awareness of environmental protec-

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tion. Integrate corporate social responsibility into e-commerce teaching, analyzing corporate social responsibility from three levels: social, environmental and economic. Students are stimulated to think positively about how to find a balance between corporate profitability and social responsibility, and to promote the harmonious progress of society.

### *5.5Keeping up with market and technological developments*

The education sector should keep up with the market and technological development, strengthen curriculum revision, carry out extensive exchanges with e-commerce enterprises, and organize regular forums, lectures and other activities, so that e-commerce teachers and students can grasp the industry trends in a short period of time, and be well-prepared for their future careers.

On this basis, with a view to cultivating a group of new e-commerce talents for China's e-commerce profession who are more in line with the actual market demand and have innovative consciousness, technical skills and international vision, and injecting new vitality into the sustainable and healthy development of China's e-commerce industry.

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