Innovative applications and strategies of AIGC technology in cross-border e-commerce practice course

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Abstract. This paper explores the application of Artificial Intelligence Generated Content (AIGC) in the Cross-Border E-commerce Practice Course, highlighting its transformative role in educational reform and its profound implications in the e-commerce industry. By detailing AIGC's practical implementation, the study illustrates how it not only redefines teaching methods but also significantly enriches course content, aligning it more closely with real-world e-commerce practices. The findings emphasize AIGC's effectiveness in modernizing cross-border e-commerce education and its role in bridging the gap between theoretical learning and practical application in the e-commerce sector. The paper concludes with implications for educational practices, offering valuable insights for educators on integrating AIGC into their teaching, thereby enhancing the relevance and applicability of e-commerce education in today's rapidly evolving digital marketplace.

Keywords: Artificial Intelligence Generated Content, Cross-Border E-commerce, Educational Technology, Teaching Innovation, Student Engagement

1 Introduction

The landscape of cross-border e-commerce (CBEC) has been evolving rapidly, driven by technological advancements and changing global market dynamics. This evolution presents both opportunities and challenges for educational institutions tasked with preparing students for careers in this dynamic field [1]. The emergence of a worldwide labor market and the increasing importance of knowledge as a driver of growth have underscored the need for quality assurance in higher education, particularly in areas like cross-border e-commerce. In recent years, the integration of Artificial Intelligence Generative Content (AIGC) technology in educational settings has emerged as a potential game-changer. AIGC technology, known for its ability to analyze large datasets and generate content, offers innovative approaches to teaching and learning in CBEC. The application of AIGC in educational reform is not just a technological upgrade but a paradigm shift in how educational content is delivered [2].

The challenges faced by the educational sector in CBEC are multifaceted. These include keeping pace with the rapid changes in the industry, addressing the skills gap, and integrating technology effectively into the curriculum. The role of AIGC technology in addressing these challenges is significant. It can provide real-time market analysis, generate dynamic content, and offer interactive learning experiences, thereby bridging the gap between theoretical knowledge and

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practical skills [3]. Furthermore, the application of AIGC in CBEC education aligns with the global trend towards digitalization and automation. As the industry moves towards more data-driven decision-making, the ability of AIGC to process and analyze vast amounts of data becomes increasingly valuable. This shift necessitates a rethinking of traditional educational methods and the adoption of more innovative, technology-driven approaches [4].

The primary purpose of this research is to explore the innovative applications and strategies of AIGC technology in the context of CBEC education. This study aims to bridge the gap between the rapid technological advancements in AIGC and its practical applications in educational settings, particularly in courses related to CBEC. As the e-commerce industry continues to evolve, there is a growing need for educational platforms and curricula that can adapt to these changes and equip students with relevant, practical skills [5].

The research questions guiding this study are as follows: (1) How can AIGC technology be effectively integrated into the curriculum of CBEC practice course to enhance the learning experience? (2) What are the innovative teaching methods and strategies that can be developed using AIGC technology to improve student engagement and learning outcomes in CBEC practice education? These questions are designed to investigate the potential of AIGC technology as a transformative tool in educational settings. The research will delve into the specific applications of AIGC in various aspects of CBEC education, such as market analysis, store design, product description, and customer service.

2 Related research

2.1 Research on the application of AIGC in the field of education

The application of AIGC technology in education has been a subject of increasing interest and research. This technology's potential to revolutionize educational methodologies and outcomes is evident across various disciplines and educational settings. In the context of STEM education, AIGC has been instrumental in enhancing the quality of learning and fostering innovative thinking. For instance, in the course "Wireless Sensor Network Technology and Applications," AIGC technology has been used to guide students in understanding complex principles and applications, thereby cultivating their analytical and problem-solving skills [6]. This approach demonstrates how AIGC can be integrated into curriculum design to stimulate innovation and practical skills among students. Moreover, the application of model-based learning, particularly in STEM fields, has shown significant improvements in learning outcomes. Research in this area has focused on how AIGC can be used to enhance the quality of learning in subjects like accounting, where traditional methods have been less effective [7]. The integration of AIGC in these models has led to a more comprehensive understanding of the subjects, highlighting the technology's role in improving cognitive, affective, and psychomotor abilities.

2.2 Current state of cross-border e-commerce education

The current landscape of CBEC education is characterized by a dynamic interplay between traditional theoretical approaches and the emerging need for practical, skills-based training. As the global e-commerce market continues to expand, educational institutions face the challenge of equipping students with the necessary skills to navigate this complex and rapidly evolving

field [8]. The integration of practical training in e-commerce education has become increasingly important, with many universities introducing courses specifically focused on CBEC.

A key issue in current CBEC education is the reliance on traditional teaching methods, which often fail to adequately prepare students for the practical demands of the e-commerce industry. This gap between theoretical knowledge and practical skills can lead to difficulties for graduates in adapting to the professional environment, particularly in the context of new and evolving e-commerce models [9]. To address this, there is a growing emphasis on multi-dimensional teaching approaches that combine theory with practical application, aiming to enhance the core competencies of students in international economics and trade.

The concept of STEM education has also been identified as an effective framework for cultivating the innovative abilities of CBEC students. This approach emphasizes the integration of science, technology, engineering, and mathematics into the curriculum, fostering a more holistic and interdisciplinary understanding of e-commerce [10]. By adopting diverse teaching methods, focusing on practical application, and nurturing innovative thinking, educators can significantly improve students' innovation capabilities and competitiveness in the global market. Furthermore, the rise of Internet-based online education models presents new opportunities and challenges for CBEC education. The development of online courses, supported by modern information technology, is becoming an important direction for classroom teaching reform. This approach allows for the design of interdisciplinary, application-oriented undergraduate programs that cater to the industry's demand for skilled CBEC professionals.

3 Application of AIGC technology in the CBEC practice course

3.1 Integration of AIGC technology in CBEC practice course

The CBEC practice course is a comprehensive program designed to provide students with an in-depth understanding of the global e-commerce marketplace, focusing on platforms like AliExpress and Amazon. It spans a variety of topics including the basics of CBEC, strategic product selection, store decoration, product listing, marketing tactics, logistics management, financial operations, and customer service. While the courses offer robust content, there are several areas where its effectiveness could be significantly enhanced: (1) Traditional teaching methods often rely on static content, which may not adequately capture the dynamic nature of the global e-commerce environment. This could result in a gap between what students learn and the real-world scenarios they encounter; (2) Current course modules might lack interactive and engaging elements, which are crucial for retaining student interest and facilitating deeper understanding; (3) The methods taught for market analysis and product selection might not reflect the latest industry standards, potentially leaving students with outdated skills; (4) The course might currently focus on traditional marketing strategies, which may not fully leverage the potential of digital and AI-driven tools prevalent in modern e-commerce; (5) There's possibly a lack of emphasis on the use of real-time data for operational decisions, an increasingly important aspect in e-commerce logistics and management.

To address these limitations, integrating AIGC technology into the course curriculum becomes essential. AIGC can provide up-to-date, dynamic learning materials, reflecting the latest trends and practices in the e-commerce sector. Interactive AI-generated content can lead to a more

engaging learning experience, fostering a deeper understanding of the subject matter. By integrating AIGC technology, the CBEC practice course will not only overcome its current limitations but will also align more closely with the evolving needs of the global e-commerce industry. The course leverages AIGC technology in several key areas to enhance learning outcomes and equip students with relevant, practical skills. The Table 1 illustrates the integration of AIGC across various course chapters.

Table 1. Integration of AIGC across various course chapters

Chapter	Section	AIGC Application	Description
Market Product Selection	Negative Review Analysis	AI Sentiment Analysis	AI algorithms analyze negative reviews, identifying and addressing key issues.
	Industry Dynamic Analysis	AI Trend Analysis	AI tools predict market trends, offering insights into industry dynamics.
Store Decoration	Store Homepage Decoration	AI-Generated Visual Content	AI tools generate engaging visual layouts and content for store homepages.
Product Listing	Product Information Quality	AI-Generated Product Descriptions	AI creates precise and appealing product descriptions.
	Main Product Image Design	AI-Assisted Image Design	AI enhances the visual appeal and professionalism of main product images.
On-Site Marketing	Content Marketing	AI-Generated Feed Content	AI develops engaging content for the Feed channel, enhancing marketing strategies.
Off-Site Marketing	Email Marketing	AI-Generated Personalized Emails	AI crafts personalized marketing emails to boost user engagement.
Logistics and Distribution	Overseas Warehouses	AI in Inventory Management and Demand Forecasting	AI optimizes inventory management and predicts demand in overseas warehouses.
Customer Service	Customer Service	AI Customer Service Bots	Training AI bots to improve service efficiency and quality.
Operational Analysis	Data Analysis	AI for Data Analysis	AI conducts efficient data analysis to support decision-making processes.

AI Sentiment Analysis for Negative Review Analysis: In this integration, AI algorithms are used to systematically process and analyze large quantities of customer reviews. The focus on negative reviews is strategic, as they often contain critical insights into product flaws or customer dissatisfaction. By teaching students how to use AI for this analysis, they learn to quickly identify and address potential issues that can affect a brand's reputation. The integration of AI here is key because it allows for the processing of data at a scale and speed unattainable by human analysis alone, making it an essential tool for businesses in the highly competitive e-commerce sector.

AI Trend Analysis for Industry Dynamic Analysis: The use of AI for market trend analysis is crucial in equipping students with the skills to anticipate and adapt to rapidly changing market conditions. AI tools can process vast amounts of data from various sources to identify emerging trends, enabling businesses to stay ahead of the curve. This aspect of the course prepares

students to leverage AI for strategic decision-making in product selection and market positioning, crucial for success in the global e-commerce arena.

AI-Generated Visual Content for Store Homepage Decoration: Here, AI is utilized to generate engaging and aesthetically pleasing designs for online storefronts. The emphasis on visual appeal is based on the understanding that in e-commerce, the visual presentation can significantly influence customer perceptions and buying decisions. AI's ability to analyze current design trends and user preferences allows for the creation of customized, appealing storefront layouts. This integration demonstrates to students how AI can be a powerful tool in enhancing the visual marketing strategy of an e-commerce business.

AI-Generated Product Descriptions: This integration focuses on using AI to create detailed and attractive product descriptions. AI's ability to generate unique and relevant content quickly can significantly enhance the online visibility and appeal of products. This is particularly important in e-commerce, where the quality of product descriptions can directly influence customer purchase decisions and SEO rankings.

AI-Assisted Image Design for Main Product Image: In this section, AI tools are used to design high-quality main product images. The importance of a product's visual representation in e-commerce cannot be overstated, as it is often the first point of interaction between the customer and the product. AI can help create images that are not only visually appealing but also optimized for different platforms, enhancing the product's attractiveness and potentially increasing sales.

AI-Generated Feed Content for Content Marketing: This application involves using AI to create content for on-site marketing channels like Feed. AI's ability to analyze user behavior and preferences enables the creation of personalized and engaging content. This is crucial in a digital marketing strategy, as well-crafted content can significantly improve customer engagement and retention.

AI-Generated Personalized Emails for Email Marketing: AI's role in crafting personalized marketing emails is a key component of an effective digital marketing strategy. By using AI, businesses can create highly personalized and relevant email content for their customers, leading to higher engagement rates. This integration teaches students the importance of personalization in marketing communications and how AI can be leveraged to achieve it at scale.

AI in Inventory Management and Demand Forecasting: AI's application in this area demonstrates its ability to optimize inventory management and accurately forecast product demand, especially in overseas warehouses. This is critical in e-commerce logistics, where efficient inventory management and the ability to predict demand trends can significantly impact business success. Students learn how AI can provide actionable insights that lead to more efficient supply chain management and reduced costs.

AI Bots for Customer Service: In this section, the focus is on utilizing AI bots to improve customer service. AI bots can handle routine inquiries, freeing up human customer service representatives for more complex issues. This not only improves efficiency but also enhances the overall quality of customer service. Teaching students about AI in customer service prepares them for the increasing role of automation in customer relations.

AI for Data Analysis: The integration of AI in data analysis is crucial for making informed business decisions. In this section, students learn how to use AI tools to analyze large datasets effectively, gaining insights that can inform various aspects of e-commerce operations. This skill is increasingly important in the data-driven e-commerce industry, where the ability to quickly analyze and act on data can provide a competitive edge.

The integration of AIGC technology in each of these areas is not just about leveraging new tools but about providing a more nuanced, practical understanding of the e-commerce domain. It enables students to experience firsthand the applications of AI in various aspects of CBEC, from market analysis to customer service. This approach ensures that graduates are not only theoretically knowledgeable but also practically skilled, ready to meet the challenges of the modern CBEC landscape. This comprehensive incorporation of AIGC into the course curriculum positions it at the forefront of educational innovation, aligning closely with industry needs and future trends.

3.2 Innovative teaching methods and strategies through AIGC technology

The integration of AIGC technology into teaching methodologies marks a transformative shift in education, particularly in the domain of CBEC. First, AIGC ushers in a new era of instructional design, characterized by dynamic and interactive content that adapts to individual learning styles and paces. This approach, powered by AI algorithms, analyzes student performance and learning patterns, enabling personalized and effective educational experiences. As students interact with content that aligns with their unique learning journeys, they become more engaged and invested in the material. Furthermore, AIGC significantly enhances collaborative learning. Through AI-driven platforms, students can participate in group projects and discussions. These platforms not only facilitate collaboration but also analyze interactions to provide insights into improving teamwork skills, crucial for modern CBEC practices.

Additionally, AIGC technology is instrumental in providing continuous assessment and real-time feedback, essential components of student development. AI tools offer immediate feedback on assignments and quizzes, helping students to quickly understand their progress and areas needing improvement. This continuous assessment process keeps students actively engaged and informed about their learning progress. Gamification of educational content through AIGC is another effective strategy to boost engagement and motivation. By integrating game-like elements such as point scoring, competitions, and rewards, learning becomes not only more enjoyable but also more engaging, leading to improved retention and understanding. Moreover, AIGC challenges students with complex, real-world problems, enhancing their critical thinking and problem-solving skills. By presenting scenarios that require in-depth analysis and strategic decision-making, it encourages students to think critically and creatively, fostering skills that are vital in the fast-paced and dynamic field of CBEC. Through these various applications, AIGC is reshaping the landscape of education in CBEC, making learning more personalized, interactive, and relevant to the real-world challenges of the industry.

4 Conclusions and implications

In the exploration of AIGC technology in CBEC education, several key findings have emerged, reshaping educational practices significantly. Firstly, AIGC has enhanced personalization and

adaptability in learning, tailoring educational content to individual student needs and preferences. This technology has also introduced interactive and practical learning modules, providing students with immersive experiences that mirror real-world CBEC scenarios. Another significant advancement is the facilitation of collaborative learning, with AI-powered tools enabling students to engage in teamwork. Moreover, AIGC's incorporation of gamification elements has led to increased student engagement and motivation, making learning more interactive and enjoyable. Lastly, the ability of AIGC to provide real-time feedback and continuous assessment has been pivotal in creating a dynamic and responsive learning environment, allowing for immediate understanding and application of concepts. These findings collectively highlight the transformative impact of AIGC on educational practices in the domain of CBEC, offering a more personalized, practical, and engaging learning experience.

The findings from this research have several implications for educational practice in the realm of cross-border e-commerce. First, the integration of AIGC necessitates a reevaluation of curriculum design and delivery methods. Educational institutions must adapt their curricula to leverage AIGC's capabilities fully, ensuring that teaching methods are aligned with the dynamic needs of the digital age. Second, as AIGC becomes more prevalent, the role of the teacher will evolve from traditional content delivery to facilitation and guidance within AI-enhanced learning environments. This shift necessitates professional development opportunities for educators to familiarize themselves with AIGC technologies and their applications in teaching. Third, with AIGC, assessment methods can become more continuous and adaptive, moving away from traditional examination models. This shift calls for the development of new evaluation strategies that accurately reflect student learning within AI-enhanced educational frameworks.

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