

Research and Practice on the Innovation of E-commerce Course Teaching Empowered by AIGC: A Case Study of "Customer Service Management"

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Abstract: With the rapid development of artificial intelligence technology, artificial intelligence generated content (AIGC) has made a splendid transformation from rule-driven to data-driven. It has released huge potential in various fields by virtue of its advantages such as multi-modal content generation and massive data analysis and processing. In the higher education industry, especially in the e-commerce major of colleges and universities, AIGC technology has opened up a new path for teaching mode innovation. Taking the e-commerce major course "Customer Service Management" as an example, this paper conducts teaching practice exploration, aiming to construct a scientific framework for course teaching innovation and cultivate high-quality technical and skilled talents that meet the needs of the times.

1. Introduction

The widespread adoption of AIGC technology in the e-commerce sector is transforming critical components of operational processes and continuously broadening marketing applications. As consumer expectations for real-time service continue to rise, the demand for rapid and efficient responses within the e-commerce industry has grown significantly. Consequently, traditional manual customer service models are encountering substantial limitations. Intelligent customer service systems, powered by AIGC technologies such as Natural Language Processing, are enabling a strategic shift toward more human-centered and operationally efficient service paradigms.^[1]

The application of AIGC technology in the field of customer service management covers the entire life cycle of pre-sale, during-sale and post-sale. In the pre-sale module, the virtual person driven by AIGC technology is available 24 hours a day. Through multiple rounds of conversations with customers, it generates personalized recommendation lists, efficiently and accurately completing guidance and conversion, achieving the goals of increasing conversion rates and reducing acquisition costs. In the during-sale module, through Natural Language Processing and deep learning, it accurately identifies the customer's emotions and questioning intentions and quickly completes keyword matching. Combined with order details and previous conversation contents, it dynamically generates soothing language and efficiently handles routine issues such as payment methods, logistics delivery and coupon usage. In the post-sale module, the AI customer service promptly responds to inquiries about order status, returns and refunds, price protection, product usage methods, etc. and automatically provides solutions.^[2] By combining customer profiles to accurately predict potential problems and proactively provide related services, it achieves the goals of improving post-sale efficiency and building customer loyalty.

2. Analysis of The Current Teaching Situation of the "Customer Service Management" Course

With the emergence of the digital economy, the e-commerce industry has become a key driver in

the development of modern service sectors. Customer service management, as a core component of enterprise operations and management, plays a decisive role in the success or failure of business activities. "Customer Service Management" is a core professional course for finance- and business-related disciplines such as e-commerce and marketing. The primary objective of this course is to equip students with an understanding of the fundamental principles and key concepts of customer service management, while cultivating strategic thinking and execution capabilities centered on customer needs. The curriculum encompasses modules including an overview of customer service management, customer analysis, customer information management, customer satisfaction management, customer loyalty management, customer interaction management, and customer service quality management. As an integrated course, "Customer Service Management" is grounded in theoretical principles, structured around the customer service management process, and supported by practical techniques to deliver combined theoretical and applied instruction. Throughout the teaching process, practical training tasks and simulation exercises are incorporated into pre-sale, during-sale, and post-sale stages of customer service. This approach enables students to identify, develop, and retain high-value customers, construct precise customer profiles, deeply explore customer value potential, enhance customer loyalty, and—through effective resource integration and strategic marketing planning—facilitate the transition from customer satisfaction to customer loyalty. Ultimately, it aims to establish high-quality, customer-centric experiential services.

At present, the "Customer Service Management" course still faces several prominent problems in the teaching implementation process, mainly reflected in the following three aspects. Firstly, the update of teaching content lags behind. The teaching content of this course fails to keep up with the rapid development trend of the e-commerce industry in a timely manner and appears inadequate in meeting the increasingly high ability requirements of enterprises for customer service management talents. Although emerging technologies such as generative artificial intelligence and blockchain have gradually become key elements of competition in various industries, most universities have not yet achieved a deep integration of new technologies, new business forms and teaching systems in the "Customer Service Management" course. The update cycle of teaching resources such as textbooks and case libraries is relatively long. The teaching focus is still concentrated on traditional customer service theories, core service processes and strategic frameworks, etc., lacking systematic introduction of application scenarios of cutting-edge technologies. Secondly, there is a disconnection between practical teaching and the actual demands of enterprises. The practical components in the course mostly rely on situational simulation operating systems, mainly covering basic consultation responses and routine complaint handling modules. However, there are significant gaps compared with the real operation systems of enterprises in terms of system simulation, data dimensions, and business complexity. The current practical training platforms are difficult to reproduce the real customer service environment of all channels and multiple scenarios, which makes it hard for students to effectively transfer the practical experience they have gained to the solution of actual problems in enterprises. Thirdly, the teaching mode is relatively outdated. At present, this course generally adopts the traditional teaching method of "theoretical instruction + basic practical operation". Teachers focus on imparting the basic theories and operational skills of customer service, while students undergo ability training through case analysis, simulation exercises and practical training systems. This type of teaching form focuses more on knowledge imparting and skill imitation, lacking the cultivation of students' higher-order thinking ability and comprehensive application ability, and is difficult to meet the training goals of modern e-commerce industry for high-quality compound service talents.

3. Teaching Design and Implementation of the "Customer Service Management" Course Oriented to AIGC Technology

Currently, the field of customer service management is undergoing an unprecedented transformation, and the wide application of generative artificial intelligence technology is precisely the core driving force behind this change. The reconstruction of the "Customer Service

Management" course oriented to AIGC technology is imperative. The specific teaching design and implementation can start from the following points.

3.1. Reshape the teaching objectives of "Customer Service Management"

The traditional course objectives focus on the following aspects: At the knowledge objective level, master the basic theories and business processes of customer service management, such as customer selection, customer development, customer information, customer classification, customer communication, customer satisfaction, customer loyalty, and customer retention, etc. At the level of capability goals, possess practical abilities such as CRM strategy formulation, project implementation, process design, technology selection, and mathematical analysis and processing. At the level of quality goals, establish correct values, cultivate students' professional identity and sense of responsibility towards customer service management, and enhance students' professional qualities in customer service management. In the AIGC era, the teaching objectives of courses should be reshaped based on the concept of human-machine collaboration. First of all, it is necessary to update students' cognition and clarify that the core essence of AIGC tools is to empower traditional customer service management and achieve human-machine collaboration rather than complete replacement. We need to have a profound understanding of the application principles, scenarios, advantages and disadvantages of generative artificial intelligence in the field of customer service management. Secondly, it is to cultivate students' abilities, such as proficiently using mainstream AIGC tools in the field of customer service like Natural Language Processing, and constructing and optimizing human-machine collaborative service processes, etc. The last point is to enhance students' qualities, mainly by cultivating their critical thinking and continuous learning mindset.

3.2. Reconstruct the teaching content of "Customer Service Management"

The teaching content of "Customer Service Management" should break free from the constraints of traditional textbook knowledge and deeply integrate large language models, predictive analytics, machine learning with the traditional theories and basic work processes of customer service management. Integrate classic theories such as customer satisfaction, customer loyalty, and customer relationship maintenance in customer service management into the AIGC technology blueprint, enabling students to recognize the differences between artificial intelligence customer service and traditional human customer service during the transformation from interpersonal interaction to human-computer interaction. Set up the AIGC special topic module This includes using tools such as ChatGPT and DeepSeek to assist in designing enterprise socialized customer relationship management plans, industry customer service management application analysis reports, designing differentiated marketing plans in combination with customer classification, assisting in writing customer development plans, satisfaction survey plans, customer lifetime value calculation plans, and building a customer service management evaluation system, etc. The SCOPE model is utilized to analyze the customer composition of the enterprise and its major competitors, build a customer information database, and the RFM model is employed to identify customer types and generate personalized management plans."

3.3. Innovate the teaching methods of "Customer Service Management"

The authenticity and scientificity of the business environment simulation in the teaching process of traditional e-commerce majors need to be improved urgently. Project-driven teaching is carried out by leveraging AIGC technology, and students' practical operation ability and innovation ability are cultivated through immersive experiences in practice. For instance, customer service management workshops can be established, introducing customer service platforms such as Alibaba's Alibaba Xiaomi, Baidu's intelligent dialogue platform UNIT, and ChatGPT. Students can conduct hierarchical practical exercises through these platforms and participate in the entire real customer service management process. Conduct investigations and research on the pain points of real enterprise customer service in study groups, and select AIGC tools to assist in completing market research, customer group portrait construction, effect evaluation, ethical risk reporting and

other contents. By holding competitions such as the AI Customer Service versus traditional human customer service PK Contest and the intelligent customer service Challenge, we can achieve competition linkage, understand the specific application paths of artificial intelligence in customer service management from multiple perspectives, and explore the integration opportunities of artificial intelligence in customer service and support.

4. Optimize the assessment and evaluation of "Customer Service Management"

By establishing an evaluation system that combines process-oriented assessment with summative assessment, students' comprehensive abilities are evaluated and precise data feedback is provided for the improvement of teachers' teaching quality.^[3] The assessment dimensions mainly include the following aspects: First, the degree of knowledge mastery. The mastery of basic knowledge of customer service management is evaluated through in-class tests, online chapter tests, and final exams, etc. The accuracy rate, score rate, and completion time of each knowledge point of students are collected. The second is the application ability of skills. Through simulation training with CRM systems, SCOPE models, RFM models, call center simulation systems, etc., students' ability to combine theory with practice is objectively evaluated in combination with the completion of situational tasks. The third is the comprehensive practical and innovative ability. By using AIGC tools to assist in designing practical and feasible customer service optimization plans for enterprises and participating in real project practices of school-enterprise cooperation units, students' continuous learning ability, innovation ability and teamwork ability are evaluated.

5. Conclusion

This paper takes the "Customer Service Management" course of the e-commerce major as the research carrier and deeply explores the practical path of AIGC empowering the innovation of course teaching. Research has confirmed that AIGC technology can effectively meet the full life cycle demands of customer service, including pre-sale, in-sale and after-sale, providing key support for the efficient and humanized upgrade of the customer service model. At the same time, it precisely addresses the pain points of traditional courses, such as lagging teaching content, disconnection between practice and enterprises, and single teaching forms. By reshaping the teaching goals of human-machine collaboration, reconstructing the AIGC integrated teaching content, innovating practical teaching methods, and optimizing comprehensive assessment and evaluation, a scientific framework for course teaching innovation has been constructed. This practice not only provides a feasible model for the integrated application of AIGC in e-commerce professional courses, but also helps cultivate high-quality technical and skilled talents that meet industry demands, offering an important reference for the innovation of teaching models in e-commerce majors in higher education.

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2) National Vocational Education Teaching Steering Committee for Business 2024 Vocational Education Teaching Research Project: "Research on the Integrated Application of AIGC Technology in the Curriculum System of Business Vocational Education" (202410A02)

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