Research on Innovative Teaching Models in Accounting Education Based on Artificial Intelligence Generated Content (AIGC)

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Abstract: In the context of profound digital transformation influencing the education sector, this study aims to explore the application and innovation potential of Artificial Intelligence Generated Content (AIGC) technology in accounting education. The research primarily analyzes the role of AIGC technology in generating educational content, particularly in providing personalized and dynamic learning experiences, thereby enhancing teaching quality and efficiency. Examining and analyzing cases from Deloitte and the School of Management at Zhejiang University in China, the study finds that AIGC technology significantly improves students' learning efficiency and comprehension abilities, while also enhancing the interactivity and practicality of teaching. The research also identifies challenges in implementing the technology, such as adaptability, allocation of educational resources, and teacher training needs. Finally, it proposes innovative strategies for accounting education based on AIGC, aimed at cultivating professionals suited for the future development of the accounting industry better.

Keywords: Artificial Intelligence Generated Content (AIGC); Accounting Education; Innovation in Teaching Models; Educational Technology Integration; Adaptive Learning Systems

1. Introduction

In the digital age, accounting education is facing unprecedented challenges and opportunities. With the rapid development of information technology, especially the widespread application of artificial intelligence (AI) in various fields, the education industry has begun to explore the use of these advanced technologies to improve teaching quality and efficiency[1]. Artificial Intelligence Generated Content (AIGC), as an important branch of AI, is gradually being recognized and utilized for its potential in education. AIGC can autonomously generate or assist in creating educational content[2], including but not limited to text, images, videos, and interactive simulations. This content creation, based on data-driven and learning algorithms, offers personalized and dynamic learning experiences.

In accounting education, the application of AIGC technology is particularly crucial[3]. Research by scholars like Jackson and Saleh suggests that accounting education should not only impart solid theoretical knowledge to students but also equip them with practical operational skills[4,5]. Traditional teaching models often focus on the instillation of theory, neglecting the cultivation of practical skills, which is somewhat disconnected from the current industry's actual demands for talent. The introduction of AIGC technology aims to bridge this gap by innovating teaching content and methods, enhancing interactivity and practicality in teaching, thereby cultivating professionals better suited for the future development of the accounting industry.

This study aims to explore the current application of AIGC technology in accounting education, analyze its role and potential in innovating teaching models, and propose innovative strategies for accounting education based on AIGC. The research will revolve around the following questions:

(1) What is the current state of AIGC technology application in accounting education?

(2) How does AIGC technology facilitate innovation in accounting teaching models?
(3) What are the possible directions and strategies for innovation in accounting education based on AIGC?
(4) What challenges and limitations might these innovative strategies face in accounting education?
Through the exploration of these questions, this study aims to provide practical guidance and suggestions for accounting educators to improve teaching methods and development, while also offering the academic community more perspectives on the application of AIGC in professional education.

2. Core Concepts and the Necessity of Model Innovation

2.1 Overview of AIGC Technology

2.1.1 Connotation
Artificial Intelligence Generated Content (AIGC) refers to the process of using artificial intelligence technology to automatically create or edit content such as text, images, videos, and audio[6]. The development of AIGC started with simple automation tools like rule-based systems and gradually evolved into more complex machine learning algorithms, including Natural Language Processing (NLP) and computer vision[7]. In recent years, with breakthroughs in deep learning technology, AIGC's capabilities have significantly improved, enhancing the quality and diversity of the generated content.
2.1.2 Application in the field of education
The field of education is one of the forefronts of AIGC technology application. AIGC can provide learners with personalized learning materials, such as exercises and teaching texts generated based on the learner's abilities and preferences. Additionally, AIGC can create interactive learning environments, such as simulated experiments and Virtual Reality (VR) scenarios, enhancing the learning experience and efficiency.

2.2 Current Status and Challenges of Accounting Education

2.2.1 Traditional accounting teaching methods
In China, traditional accounting teaching methods mainly focus on the imparting of theoretical knowledge and training in manual practical skills. According to data released by the Ministry of Education of China, most accounting courses still revolve around traditional fields such as accounting, auditing, and taxation, emphasizing the mastery of theoretical knowledge. However, although effective in cultivating students' foundational knowledge, these methods show limitations in the face of rapidly changing accounting environments and technological advancements. For instance, a survey targeting graduates of accounting majors in China reveals that many employers find graduates lacking in practical operational skills and innovative thinking [8].
2.2.2 Need for Innovation in Teaching Models
As the accounting industry increasingly demands professional talent with practical abilities and innovative thinking, traditional teaching models urgently need innovation. For example, according to the report of the International Accounting Education Standards Board (IAESB), modern accounting education should focus more on the cultivation of analysis and evaluation skills, not just the imparting of accounting knowledge. Therefore, educators and scholars have started exploring more flexible and interactive teaching methods. Case teaching, project-based learning, and flipped classrooms are gradually gaining favor, as they enhance students' critical thinking, problem-solving abilities, and self-learning capacity. For instance, Harvard Business School widely adopts the case teaching method, improving students' practical application abilities and decision-making skills through the analysis of real business cases. In China, universities like Tsinghua University are also beginning to integrate project-based learning and flipped classrooms into accounting education to cultivate students' practical abilities and innovative thinking.

3. Integration of AIGC Technology with Teaching Model Innovation

3.1 Content Innovation

The application of AIGC technology in innovating educational content brings unprecedented opportunities to accounting education. AIGC can autonomously generate case studies based on the latest market data and trends. These case studies not only reflect the current economic environment but also can be customized for specific educational

objectives, enabling students to learn the most up-to-date and relevant content.

In accounting education, the analysis of real-time data is crucial. AIGC technology can provide datasets that are updated in real-time for students to analyze. This not only enhances the practicality and relevance of the teaching content but also strengthens students' ability to handle actual data. Utilizing AIGC, educators can create multimedia teaching materials incorporating text, charts, videos, and interactive elements. This variety of content formats helps meet the needs of students with different learning styles, improving learning appeal and efficiency. AIGC technology also facilitates the integration of accounting with other disciplines, such as economics, management, and information technology, providing students with a more comprehensive and interdisciplinary perspective.

3.2 Method Innovation

The innovative application of AIGC technology in teaching methods offers new perspectives and tools for accounting education, including:

(1) Flipped Classroom[9]: AIGC can be used to create materials for flipped classrooms, such as pre-recorded lecture videos and interactive learning modules[10]. These materials allow students to independently learn theoretical knowledge outside the classroom, while class time is more devoted to discussions, case analysis, and practical operations, thus enhancing classroom interaction and learning efficiency.

(2) Gamified Learning[11]: Accounting-related games and simulation activities developed using AIGC can increase student engagement and interest. By simulating real accounting scenarios, students can learn complex accounting concepts and skills in a gamified environment, while enhancing their problem-solving abilities.

(3) Simulation and Virtual Reality: The combination of AIGC with simulation and Virtual Reality (VR) technologies provides immersive learning experiences. For example, students can engage in activities like audit simulations and financial decision analysis in a virtual accounting environment, aiding in better understanding and application of accounting knowledge.

(4) Personalized Learning Paths: AIGC can offer personalized learning suggestions and resources based on a student's progress and performance. Such personalized learning paths cater to the needs of each student, helping to improve learning outcomes and student satisfaction.

3.3 Environmental Innovation

The application of AIGC in creating a more interactive and personalized learning environment is significant for enhancing the quality and effectiveness of accounting education.

AIGC can be used to create a more interactive learning environment. For instance, through online discussion platforms and interactive question solving, students can more effectively exchange ideas and viewpoints with teachers and peers. This interaction not only enhances student engagement but also fosters the development of critical thinking and collaborative skills. AIGC can provide customized learning materials and activities based on a student's learning history and performance. Such personalized learning experiences cater to the specific needs of different students, enhancing the relevance and efficiency of learning. With AIGC, educators can receive real-time feedback on student progress and comprehension. This information can be used to adjust teaching strategies and content, ensuring teaching activities are more aligned with students' actual situations. Through Augmented Reality (AR) and Virtual Reality (VR) technologies, AIGC can create immersive learning experiences. In such environments, students can engage in deeper and more practical learning through simulated accounting scenarios, like virtual company financial analysis and risk assessment. In the current and future educational landscape, remote and blended learning are increasingly important. AIGC technology supports this flexible learning mode, allowing students to access high-quality accounting education regardless of their location.

4. Application Methods of AIGC Technology in Accounting Education

4.1 Automated Generation of Teaching Content

4.1.1 Automated financial reporting and analysis

(1) Real-time Data Integration: AIGC technology can integrate real-time financial data from various sources to automatically generate financial reports. This real-time nature ensures that students can access the latest market trends, enhancing the practicality and relevance of teaching.
(2) In-depth Data Analysis: Using advanced algorithms, AIGC technology can conduct deep analysis of complex financial data, providing insightful reports. This not only helps students understand the trends and patterns behind financial data but also hones their analytical and critical thinking skills.
(3) Personalized Content Adaptation: AIGC technology can also adjust the complexity and depth of reports according to course requirements and students' learning levels, making them more suitable for students' learning needs.

4.1.2 Customized case studies

Adaptability to Student Interests and Needs: AIGC technology can analyze students' learning progress, interests, and feedback to generate customized case studies. This personalized learning material is more likely to engage students and increase their participation. Scenario Simulation and Practice: By simulating real-world accounting scenarios, AIGC technology can create case studies with high relevance and practical value. This method not only helps students understand how theoretical knowledge is applied in real situations but also enhances their problem-solving skills.

4.2 Interactive Learning and Simulation

4.2.1 Virtual accounting laboratories

AIGC technology can create virtual accounting laboratories, simulating real business environments. In these environments, students can engage in various accounting activities, such as simulated audits and tax planning, which help them apply theoretical knowledge in real situations. Furthermore, by practicing in virtual accounting labs, students can make mistakes and learn from them in a safe simulated environment, which is crucial for developing key skills needed in actual work. Additionally, AIGC technology can provide instant feedback and guidance, helping students understand how their decisions impact financial outcomes in the simulated environment, thus improving their decision-making skills.

4.2.2 Interactive learning tools

AIGC technology can develop interactive learning tools, such as online accounting games and simulators. These tools provide a fun and engaging learning platform, allowing students to learn accounting concepts in a gamified environment. A key advantage of these tools is the provision of instant feedback and assessment, helping students immediately understand their performance and make adjustments based on feedback. Through these interactive learning tools, students' learning experiences are enhanced; they not only better understand accounting concepts but also improve their problem-solving abilities and critical thinking skills.

4.3 Designing Personalized Learning Paths

AIGC technology plays a crucial role in providing personalized learning experiences and assessments, essential for meeting the unique learning needs of different students and enhancing overall learning effectiveness.

4.3.1 Personalized learning materials

AIGC technology can analyze students' learning abilities, knowledge levels, and progress to provide customized learning materials and activities. This personalized approach ensures that each student can learn at their own pace and ability, thereby maximizing learning effectiveness. Through adaptive learning systems, AIGC technology can dynamically adjust learning content and difficulty to match students' progress and feedback. This dynamic adjustment helps maintain a balance between challenge and support, effectively fostering learning. Additionally, AIGC technology can offer a variety of learning materials, such as videos, simulated exercises, and interactive case studies, to cater to students with different learning styles.

4.3.2 Adaptive learning systems

AIGC technology can generate customized assessments for individual students, considering their learning journey and performance. This personalized assessment more accurately reflects students' learning outcomes and mastery of subjects. Providing instant feedback is another key advantage of AIGC technology. Students can immediately understand their performance in specific tasks or tests, allowing for quick adjustments in

learning strategies and methods. Additionally, AIGC technology can track students' learning progress and outcomes, offering long-term learning analytics. This helps teachers and students understand learning patterns, identify strengths, and areas for improvement.

4.4 Teaching Assessment and Feedback Mechanisms

4.4.1 Real-time assessment tools

In accounting education, timely and effective teaching assessment and feedback mechanisms are crucial for ensuring teaching quality and student learning effectiveness. AIGC technology offers innovative tools and methods in this regard. AIGC technology can provide real-time assessment tools, helping teachers monitor students' learning progress and understanding in real-time. These tools can automatically track students' assignment submissions, test scores, online discussion participation, etc., providing comprehensive learning data for teachers. Based on this real-time data, teachers can promptly adjust teaching methods and content. For example, if data shows that most students struggle with a particular topic, teachers can choose to re-teach that topic or provide additional learning resources and guidance. Real-time assessment tools also support personalized learning. Teachers can provide customized guidance and support based on each student's progress and performance, helping each student overcome learning obstacles.

4.4.2 Feedback and improvement

Discuss how AIGC technology assists teachers in providing personalized feedback and how student feedback can be used to improve teaching content and methods. AIGC technology can aid teachers in offering more personalized and specific feedback. Using students' learning data, teachers can provide targeted feedback for each student's specific situation, helping them understand their strengths and areas for improvement. AIGC technology can also help teachers collect and analyze students' feedback to improve teaching content and methods. Through students' feedback, teachers can understand which teaching methods are most effective and which content needs further optimization, thereby continuously enhancing teaching quality. This data and feedback-driven approach promote a continuous cycle of teaching improvement. Teachers constantly adjust their teaching based on students' performance and feedback, while students benefit from more accurate and targeted instruction.

5. Case Studies and Application Analysis

5.1 Case Study of Deloitte

Deloitte, as a global leader in professional services, has extensive experience in the financial field. To enhance teaching and service quality, Deloitte adopted generative artificial intelligence (AIGC) technology, especially in the automated generation of financial reports and market analysis.

5.1.1 Implementation process

Deloitte selected a deep learning-based generative AI model to adapt to different financial scenarios, generating reports from financial data or analyses from market data. Deloitte trained its internal financial instructors in AIGC technology, enabling them to use it to generate various financial cases and solutions, increasing the interest and interactivity of teaching. Based on the characteristics of AIGC technology, Deloitte redesigned its financial courses to display cutting-edge knowledge and practical application, simulating real financial scenarios. Additionally, Deloitte fully utilized AIGC technology to provide external clients with customized financial reports, market analyses, and consulting recommendations.

5.1.2 Feedback on effectiveness

In the Deloitte case, AIGC-generated financial content and charts helped students quickly grasp knowledge and deeply understand financial principles. The rich and diverse content and charts made teaching more vivid and interesting, showcasing the latest developments in finance. Efficient and accurate financial reports and analyses enhanced professionalism, while personalized consultations and recommendations optimized services.

5.1.3 Challenges and coping strategies

However, in Deloitte's case, we also found that users need continuous updates to ensure the technological advancement and applicability, often encountering compatibility and security issues. The need for teacher training was challenging to adapt, and how to sustain effective training and encourage teachers to adjust teaching methods to adapt to new technology became a new problem for the

enterprise. Additionally, guiding students to actively accept new technology, focusing on their learning motivation and attitude to enhance participation, was also a major challenge.

In summary, Deloitte not only achieved innovation in teaching and services in the financial field but also demonstrated how to effectively apply emerging technology to meet the needs of modern education and services.

5.2 Case Study from Zhejiang University

The Department of Finance and Accounting at the School of Management of Zhejiang University, Intelligent Finance major. The department started enrolling undergraduate students in the Intelligent Finance major in 2019, being one of the first universities in China to offer this specialty. The school's educational environment is characterized by a strong atmosphere of innovation and an international perspective. The feature of the accounting major is its emphasis on the combination of theory and practice, training financially competitive talents with an international perspective. The introduction of AIGC technology was intended to adapt to the trends of digital transformation and intelligent revolution, improving the quality and level of accounting education, and cultivating high-end composite talents capable of using new technologies to solve accounting problems.

5.2.1 Implementation process

After introducing AIGC technology, the Department of Finance and Accounting at Zhejiang University's School of Management reformed and innovated its accounting courses, adding content and teaching methods related to new technology and management practice, enhancing the specificity and effectiveness of teaching. These improvements' specific impact on student learning outcomes manifested in the following ways:

(1) Students' understanding of complex accounting concepts improved, with the ability to use AIGC technology to assist in accounting analysis and decision-making, enhancing problem-solving skills in accounting.

(2) Students' mastery of practical operational skills improved, being able to proficiently use AIGC technology to generate accounting content, enhancing the efficiency and quality of accounting work.

(3) Students' interest and ability in innovation and entrepreneurship increased, combining AIGC technology to explore new business models and value creation methods, enhancing the potential and level of accounting innovation.

5.2.2 Feedback on effectiveness

According to a survey by the Department of Finance and Accounting at Zhejiang University's School of Management, supplemented by ACCA's "Research Report on the Development of Intelligent Accounting Education in Chinese Universities," the feedback from students and teachers on the application of AIGC technology was generally positive. Students found AIGC technology to be an interesting and useful teaching tool, stimulating learning interest, enhancing learning effectiveness, boosting learning confidence, broadening learning horizons, and developing learning abilities. Teachers considered AIGC technology an effective and innovative teaching method, enriching teaching content, optimizing teaching processes, enhancing teaching standards, promoting teaching reform, and cultivating teaching abilities. Both students and teachers regarded AIGC technology as an important and necessary accounting skill, adapting to the development needs of the accounting industry, enhancing the competitiveness of accounting talents, and promoting the development of accounting talents.

5.2.3 Challenges and coping strategies

In the application of AIGC technology, students and teachers mainly face challenges in terms of the lack of teaching resources, the pressing need for teaching training, and the need to expand the application of teaching. Therefore, the main coping strategies also stem from these aspects. On the one hand, it is necessary to increase the teaching resources of AIGC technology, such as textbooks, case studies, software, etc., to improve the teaching support and assurance of AIGC technology. At the same time, it is essential to strengthen the teaching training in AIGC technology, including training for teachers, students, and enterprises, to enhance the teaching capabilities and levels of AIGC technology. Additionally, it is crucial to expand the teaching application of AIGC technology, such as course design, project design, competition design, etc., to increase the breadth and depth of teaching with AIGC technology.

6. Conclusion and Discussion

This study embarked on an exploratory journey to understand the impact and potential of Artificial Intelligence Generated Content (AIGC) in revolutionizing accounting education. Through comprehensive analysis and case studies, including insights from Deloitte and the School of Management at Zhejiang University, the research illuminated how AIGC technology fosters innovation in teaching methodologies and content creation within the domain of accounting education.

Key findings of this study underscore the significant role AIGC plays in enhancing personalized and dynamic learning experiences, thereby improving learning efficiency, comprehension abilities, and the overall quality of education. The research delved into various facets of AIGC application, ranging from content innovation and methodological advancements to environmental enhancements in the educational sphere. The integration of AIGC in educational practices was found to not only cater to the evolving needs of the accounting profession but also to align with the digital transformation trends in the education sector.

Moreover, the study identified and discussed several challenges associated with the implementation of AIGC technology. These include adaptability issues, the allocation of educational resources, and the need for comprehensive teacher training programs. Addressing these challenges, the research proposed innovative strategies tailored for accounting education, aiming to cultivate accounting professionals who are well-equipped for future industry developments.

As we conclude, it is evident that the incorporation of AIGC technology in accounting education holds immense promise for reshaping traditional teaching models. It opens avenues for a more interactive, efficient, and practical approach to learning, aligning educational outcomes with the demands of the contemporary accounting industry. The following sections will further delve into the potential, challenges, and future directions of AIGC technology in accounting education, offering insights for educators, policymakers, and stakeholders in the education and accounting sectors.

6.1 Potential and Challenges of AIGC Technology in Accounting Education

AIGC technology shows significant potential in accounting education, bringing innovation and transformation to traditional teaching methods. By automatically generating personalized and dynamic teaching content, AIGC technology can not only improve teaching efficiency but also promote active learning and in-depth understanding among students. However, the application of this technology also faces a series of challenges. Issues such as the cost of technology implementation, the technological adaptability of teachers and students, and the assurance of teaching quality need careful consideration. Additionally, data privacy and security are important aspects that cannot be overlooked when using AIGC technology.

6.2 Impact on Teaching Practice

The impact of AIGC technology on teaching practice is multifaceted. It has changed not only the way teaching content is created and distributed but also fostered innovation in teaching methods and learning environments. For instance, with AIGC technology, teachers can achieve more personalized instruction, while students can enhance their accounting capabilities through more interactive and practical learning methods. However, this requires teachers to continuously update their technological knowledge and adjust their teaching strategies to adapt to new teaching tools and methods. Simultaneously, students also need to develop learning skills that align with these changes to fully utilize the resources provided by AIGC technology.

6.3 Suggestions for Future Research Directions

Considering that the application of AIGC technology in accounting education is still in its early stages, future research can delve into the following areas:

(1) Technological Development Trends: Research the latest developments in AIGC technology and how these technologies can be further optimized and integrated into accounting education.

(2) Teaching Effectiveness Assessment: Conduct more empirical studies to assess the effectiveness of AIGC technology in different teaching contexts and student groups, and how

to quantify these effects.

(3) Adaptability of Teachers and Students: Study how teachers and students adapt to changes brought by AIGC technology, including their acceptance, technological proficiency, and motivation for continuous learning.

(4) Ethical and Legal Issues: Explore ethical and legal issues that may arise when using AIGC technology, such as data privacy protection, intellectual property rights, and accountability.

Continued research in these directions can provide theoretical and practical support for the ongoing innovation and application of AIGC technology in accounting education.

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