

A Study on the Mechanism of Industry-Education Integration in the Elderly Care Field of Private Higher Education Institutions Empowered by AIGC

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ABSTRACT

With the deepening of population aging, the demand for high-quality composite talents in the elderly care field is increasing sharply. Private higher education institutions have unique advantages in the cultivation of applied talents, and industry-education integration is a key path for their development. The rapid development of AIGC (Artificial Intelligence Generated Content) technology provides strong technical support and innovative possibilities for elderly care education. This study focuses on exploring how AIGC can empower the deep integration of industry and education in the elderly care major of private higher education institutions. By analyzing the core characteristics of AIGC and its application potential in elderly care education, and by examining the pain points faced by private higher education institutions in the integration of industry and education in the elderly care field, this study constructs an AIGC-empowered mechanism model that includes five core modules: "intelligent curriculum development," "virtual simulation training," "intelligent resource matching," "collaborative innovation platform," and "dynamic evaluation and feedback." The study emphasizes that AIGC technology can effectively bridge the gap between the needs of the elderly care industry and the talent cultivation of higher education institutions, providing innovative solutions for private higher education institutions to improve the quality of elderly care talent cultivation and to serve the regional aging cause.

KEYWORDS

Artificial intelligence generated content; Elderly care services; Industry-education integration; Talent cultivation; Educational innovation

1 Introduction

Population aging has become an important challenge facing China's social development, giving rise to a huge demand for specialized, intelligent, and humanized elderly care services. The elderly care field urgently needs a large number of composite talents who master modern service concepts, professional skills, and are proficient in the use of intelligent technologies. Private higher education institutions, with their flexible operating mechanisms, keen market responsiveness, and applied orientation, are playing an increasingly important role in cultivating high-quality technical and skilled talents that meet industry needs. Industry-education integration, as the key link connecting the education chain, talent chain, and the industrial chain and innovation chain, is the core path to improving the quality of elderly care talent cultivation in private higher education institutions. AIGC technologies, represented by ChatGPT and Wenxin, with their powerful capabilities in content generation, knowledge integration, situational simulation, and personalized interaction, are profoundly reshaping multiple industries. The introduction of AIGC into the field of elderly care education offers private higher education institutions an unprecedented opportunity to deepen industry-education integration and innovate talent cultivation models.

2 Characteristics of AIGC technology and its suitability for elderly care education

AIGC possesses several core characteristics that make it highly suitable for elderly care education scenarios^[3-4]. It can automatically generate a wide range of teaching resources, such as text, images, audio, and video, that comply with the curriculum requirements, thereby greatly enriching the teaching material repository and addressing the issue of scarce high-quality resources. AIGC is also capable of rapidly integrating vast amounts of knowledge from multiple disciplines, including medicine, nursing, psychology, rehabilitation, and sociology, to construct a knowledge graph for elderly care services. Additionally, it provides 24/7 intelligent tutoring and simulated expert interactions for students. By creating immersive virtual elderly care environments, AIGC can simulate various common health issues, psychological states, and complex communication scenarios in older adults. Students can engage in risk-free, repeatable practical training to enhance their ability to handle real-world situations. Based on the analysis of students' learning behaviors, knowledge acquisition levels, and skill weaknesses, AIGC can dynamically generate personalized learning plans, recommend resources, exercises, and feedback, achieving tailored education. It also assists teachers in instructional design, assignment grading, and report analysis, thereby reducing their administrative burdens. For students, AIGC aids in literature search, report writing, and scheme design, improving learning efficiency.

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3 Current status and challenges of industry-education integration in elderly care services at private higher education institutions

Currently, private higher education institutions face a series of structural dilemmas and deep-seated challenges in promoting industry-education integration in the elderly care field [5,6]. First, there is a significant deficiency in the “dual-qualified” faculty, with a severe shortage of teachers who possess both solid theoretical knowledge and rich practical experience in front-line elderly care. Second, there is a sharp contradiction between the supply and demand of practical teaching resources. On-campus training bases, due to their high construction and maintenance costs, generally suffer from outdated facilities and insufficient technological advancement. Third, the curriculum system is clearly misaligned with industry needs. The mechanism for updating course content is rigid and unable to promptly incorporate the latest industry developments, such as smart elderly care technology standards, new methods for psychological comfort of the elderly, and new models of medical and nursing integration. The outdated nature of textbooks forms a stark contrast with the rapid iteration of the industry. Fourth, the cooperation between schools and enterprises is trapped in a “superficial” dilemma, with interactions mostly limited to providing internship positions and occasional lectures. There is a lack of effective mechanisms for shared interests and long-term motivation in jointly building the curriculum system. Finally, the talent evaluation system is seriously outdated, overly relying on theoretical written exams and basic skills operation assessments, and lacks scientific, dynamic, and multi-dimensional evaluation tools and standards for students' core professional qualities. These pain points are interwoven and severely restrict the quality and adaptability of talent cultivation in the elderly care major at private higher education institutions, urgently requiring systemic solutions through mechanism innovation and technological empowerment.

4 Construction of the mechanism for AIGC to empower industry-education integration in elderly care services at private higher education institutions

To address the aforementioned pain points and fully leverage the potential of AIGC, the following core empowerment mechanisms are constructed:

4.1 Intelligent curriculum development and dynamic update mechanism

Utilizing AIGC to crawl and analyze vast amounts of information on domestic and international elderly care policies, industry reports, technological trends, case studies, and new job requirements in real-time, AIGC can automatically generate analytical summaries and trend reports. Experts from both the academic and industry sectors jointly define the competency goals. Based on these goals, the latest industry knowledge base, and pedagogical principles, AIGC rapidly generates course outlines, modular teaching content, and supporting resources. AIGC also assists in multiple rounds of iterative optimization to ensure the cutting-edge nature and applicability of the curriculum content. Based on the core content framework, AIGC can assist in generating basic textbook texts, accompanying study guides, and practical training manuals. Teachers and industry mentors are responsible for reviewing, supplementing case studies, and making localized revisions, thereby significantly improving the development efficiency.

4.2 Virtual simulation immersive training mechanism

Leveraging the powerful generative capabilities of AIGC, highly realistic virtual environments covering all scenarios of elderly care services are created. Within these virtual settings, AIGC-driven “intelligent elderly” NPCs (non-player characters) are deployed, each with different physiological conditions, personality traits, cognitive levels, and emotional states. These NPCs can engage in natural language dialogues with students, simulating the complexity of real service interactions. Students can repeatedly practice standardized operations in the virtual environment. More importantly, they can train in handling emergencies, addressing communication challenges, and making ethical decisions, which are higher-order skills. The system records the process and provides instant feedback and post-mortem analysis.

4.3 Intelligent resource matching and collaborative talent cultivation mechanism

Based on learning analytics, an AIGC “personal tutor” is assigned to each student, providing customized learning pathways, precise resource recommendations, intelligent Q&A, learning progress monitoring, and early warnings. AIGC can simulate experienced elderly care workers, managers, or industry experts to offer virtual guidance to students. Additionally, a platform is established to connect real enterprise mentors for online Q&A, case reviews, and project guidance, breaking geographical barriers and expanding the coverage of high-quality enterprise mentors. By analyzing students' skill strengths, practical performance, career preferences, and matching them with corporate job requirements and project needs, AIGC can provide more precise internship recommendations and job matches, thereby enhancing the effectiveness of internships.

4.4 Data-driven collaborative innovation platform mechanism

Led by higher education institutions, a collaborative cloud platform integrating AIGC capabilities is jointly built and operated in partnership with elderly care enterprises, technology companies, and research institutions. The platform aggregates a teaching resource repository, virtual training modules, a real project pool, an industry database, and collaborative R&D tools. It collects data from the teaching process, practical training operations, real corporate service data, and user feedback. AIGC performs in-depth analysis of these data to identify service pain points, optimize processes, and distill best practices, forming reusable knowledge assets to feed back into teaching and industry. Based on platform data and AIGC's analytical and generative capabilities, universities and enterprises jointly undertake applied research projects in elderly care services, such as developing smart age-friendly product prototypes, optimizing service process plans, and designing new elderly care models. Teachers, students, and corporate engineers all participate in these projects.

4.5 Dynamic comprehensive evaluation and feedback optimization mechanism

Utilizing AIGC capabilities, multi-dimensional data from students' entire learning process, including theoretical study, virtual training, online interaction, project participation, and corporate internships, are automatically collected. AIGC processes and analyzes these vast amounts of data in depth to generate comprehensive and objective student competency profiles and growth trajectory reports. These reports not only present the results but also analyze strengths and areas for improvement. The evaluation results are fed back in real-time to students, teachers, enterprises, and managers, forming a closed loop of "evaluation - feedback - improvement," continuously optimizing the entire talent cultivation process.

5 Conclusion

The rapid development of AIGC technology provides a powerful and innovative solution to resolve the deep-seated contradictions in the industry-education integration of private higher education institutions in the elderly care field. The five core mechanisms constructed in this study—intelligent curriculum development and update, virtual simulation immersive training, intelligent resource matching and collaborative talent cultivation, data-driven collaborative innovation platform, and dynamic comprehensive evaluation and feedback—are designed to deeply integrate AIGC capabilities and systematically enhance the effectiveness of industry-education integration. In the future, as AIGC technology continues to iterate and further integrates with the Internet of Things, big data, robotics, and other technologies, its application scenarios in elderly care education will become even broader and more in-depth. Private higher education institutions should make forward-looking arrangements, be brave in practice, and deeply integrate AIGC into the entire chain of elderly care talent cultivation. By doing so, they can create a new ecosystem of industry-education integration that is intelligent, high-quality, and distinctive, and deliver more outstanding innovative, composite, and applied talents to China's aging cause.

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