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Research on the Construction Path of Artificial Intelligence Curriculum System for Higher Vocational Undergraduate Education in the New Era

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Abstract

With the rapid development of artificial intelligence (AI) technology, the demand for professionals in the AI field is increasing. As an important pathway for cultivating application-oriented talents, higher vocational undergraduate education faces the critical task of constructing a scientific and reasonable AI curriculum system. Based on the characteristics of higher vocational undergraduate education in the new era, this paper analyzes the necessity and challenges of building an AI curriculum system and proposes a construction path centered on "competency-oriented, school-enterprise cooperation, interdisciplinary integration, and practice-driven" principles. This provides theoretical support and practical guidance for AI education in higher vocational undergraduate programs.

Keywords: higher vocational undergraduate, artificial intelligence, curriculum system, construction path

1. Introduction

Artificial intelligence (AI), as a driving force for social progress, is profoundly reshaping the global economic structure, industrial models, and education systems [1]. It serves not only as the core driver of the ongoing technological revolution and industrial transformation but also as a critical engine for future economic development. In recent years, with the rapid development and widespread application of AI technologies, the Chinese government has significantly increased its strategic focus and policy support for the AI industry [2]. The Ministry of Education has explicitly called for accelerating the development of AI-related disciplines and programs, promoting the deep integration of AI technologies into education, and cultivating high-quality, interdisciplinary technical talents to meet the demands of the new era [3]. These policies provide clear guidance for the development of higher education, particularly undergraduate vocational education, while also presenting new challenges.

As an integral part of China's higher education system, undergraduate vocational education plays a pivotal role in cultivating industry-oriented technical and skilled talents. Its primary objective is to develop application-oriented professionals equipped with a solid theoretical foundation, strong practical abilities, and innovative thinking, thereby directly supporting regional economic development and industrial upgrading. However, the rapid advancement of AI technologies has revealed numerous deficiencies and bottlenecks in the construction of AI curricula within undergraduate vocational education institutions.

First, outdated course design remains a significant issue. Current curricula fail to comprehensively cover core AI technologies, such as deep learning, natural language processing, and computer vision, and lack integration with interdisciplinary knowledge areas, such as the convergence of AI with big data and the Internet of Things. Second, weak practical teaching undermines the development of students' hands-on skills and innovative capabilities, as practical and project-driven components are underemphasized in teaching. Third, misalignment with industry needs further exacerbates the problem. The content of existing courses is disconnected from the practical demands of enterprises, resulting in graduates who lack competitiveness in the job market. For instance, many companies require AI talent capable of application development and problem-solving, yet current programs tend to focus excessively on theoretical instruction, leaving students ill-prepared for real-world challenges.

These issues not only hinder the quality of AI education in undergraduate vocational institutions but also limit their ability to effectively support industrial development. In contrast, many countries have made significant progress in integrating AI technologies into vocational education. For example, community colleges in the United States have partnered with industries to develop employment-oriented AI courses that emphasize practical skill development. Germany's dual-education system has successfully integrated AI technologies with industrial applications, offering students extensive real-world learning opportunities. Similarly, Japan has advanced AI-related programs through government-backed initiatives and corporate collaborations. These international experiences highlight the importance of establishing scientifically sound and industry-aligned AI curricula to enhance the quality of vocational education. However, compared to these countries, China's undergraduate vocational education in AI remains at an early stage, with significant gaps in curriculum design, practical implementation, and industry alignment.

Moreover, empirical evidence underscores the urgency of reform. On the one hand, the demand for AI-related technical and skilled talent in China is growing at an explosive rate. For instance, in 2023, the demand for AI-related positions increased by over 30%, yet the insufficient application capabilities of vocational graduates have exacerbated the talent supply-demand imbalance. On the other hand, the Ministry of Education's policies explicitly emphasize the deep integration of AI technologies into education and identify curriculum reform as a key strategy for cultivating high-quality technical talent. These factors collectively indicate that advancing AI curriculum reform is not only necessary but also urgent for the development of undergraduate vocational education.

Therefore, constructing a scientifically sound and industry-aligned AI curriculum system has become a critical task for undergraduate vocational education. This paper focuses on the current state of undergraduate vocational education, taking into account the latest developments and demands of the AI industry. It aims to analyze the existing problems in AI curriculum design and explore optimization paths and implementation strategies. By integrating theoretical insights with practical solutions, this study seeks to provide scientific theoretical support and actionable guidance for undergraduate vocational institutions, enabling them to better serve the development of the AI industry and contribute to broader economic transformation and upgrading.

2. The Significance and Current Situation of the Construction of Artificial Intelligence Curriculum System for Higher Vocational Undergraduates

In recent years, the rapid development of artificial intelligence (AI) technology has significantly impacted economic and social structures. According to the China Artificial Intelligence Industry Development Report (2023), the scale of China's AI industry has exceeded 500 billion RMB, with an annual growth rate of over 20%[4]. Meanwhile, the talent gap in AI-related fields continues to expand. In 2023 alone, the demand for AI-related positions increased by more than 30%, yet enterprises widely report a severe shortage of talent with practical application capabilities. To address this issue, the Ministry of Education released the Guidelines for Accelerating the Construction of AI-related Disciplines and Programs, which explicitly call for vocational education to accelerate the development of AI curriculum systems and cultivate technical and skilled talents to meet industrial demands. However, the current construction of AI curricula in undergraduate vocational education still faces numerous challenges that urgently need to be addressed.

2.1 Outdated Course Content and Misalignment with Industry Needs

Outdated course content is one of the primary challenges in the construction of AI curricula for undergraduate vocational education. Most existing curricula are still based on traditional computer science, with a focus on programming languages (e.g., C, Java) and basic algorithms, while systematically covering core AI technologies such as machine learning, deep learning, natural language processing, and computer vision remains insufficient[2]. For instance, at a certain vocational institution, the core courses of its AI program still revolve around traditional subjects such as "Data Structures" and "Operating Systems," while emerging technologies like "Deep Learning" and "Computer Vision" are only offered as electives, accounting for less than 10% of the total course hours.

Additionally, the lack of interdisciplinary integration further exacerbates this issue. The curricula fail to reflect the convergence of AI with other fields such as big data and the Internet of Things (IoT), which are crucial for meeting industry needs. For example, in the intelligent manufacturing sector, enterprises often require technical personnel who can apply AI technologies to industrial data analysis. However, students in vocational institutions have limited opportunities to engage with relevant case studies during their education, leaving them ill-prepared for such roles upon graduation.

2.2 Weak Faculty Resources Constraining Teaching Quality

The shortage of qualified faculty is another major bottleneck in the construction of AI curricula. According to the China Vocational Education Development Report, less than 15% of AI-related faculty in vocational institutions have practical experience in enterprises, and fewer than 20% hold advanced degrees (master's or above) in AI-related fields[5]. Most instructors possess only basic programming skills and theoretical knowledge, lacking systematic training in AI technologies and real-world application experience.

For example, in one vocational institution, a "Deep Learning" course had to be taught by a computer science instructor with no prior experience in AI, resulting in a curriculum that remained purely theoretical and failed to incorporate practical case studies. This lack of qualified faculty directly undermines the effectiveness of teaching and limits students' ability to acquire the skills needed for industry demands.

2.3 Insufficient Practical Teaching Resources and Weak Hands-On Skills

Practical teaching is the cornerstone of vocational education, yet the lack of sufficient resources for practical training severely limits students' ability to develop hands-on skills. Many vocational institutions face constraints due to outdated laboratory equipment that fails to meet the requirements of AI education[6]. For instance, at a certain institution, the AI laboratory was only equipped with low-performance computers and lacked essential hardware such as GPU servers, robots, and sensors, preventing students from engaging with real-world AI development environments.

Moreover, the design of practical courses is often overly simplistic and formalized, providing students with limited opportunities to work on real-world projects. For example, in the "Machine Learning" course, students were only required to complete a basic classification algorithm experiment to validate theoretical knowledge but were not exposed to real-world data analysis projects. This lack of comprehensive practical training hinders students' ability to apply their theoretical knowledge to solve complex real-world problems, thereby weakening their competitiveness in the job market.

2.4 Weak Industry-Education Integration and Lack of Collaboration Mechanisms

Another critical issue is the insufficient integration of industry and education in the construction of AI curricula. Curriculum design is often dominated by academic institutions, with minimal participation from enterprises, resulting in a disconnect between what is taught in schools and the actual skills required by the job market. For example, in the design of a "Natural Language Processing" course at a vocational institution, there was no collaboration with relevant enterprises, leading to a curriculum that focused heavily on theoretical analysis while neglecting practical applications such as text mining and speech recognition, which are in high demand in the industry.

Additionally, the forms of collaboration between schools and enterprises are often limited to short-term internships for students, with little depth in areas such as course development and teaching implementation. In contrast, Germany's dual-education system emphasizes full participation of enterprises in curriculum design and teaching processes, providing students with real-world learning environments and project-based training opportunities[2]. Compared to such international models, China's vocational institutions still face significant gaps in establishing effective industry-education collaboration mechanisms.

2.5 The Necessity of Optimizing AI Curriculum Systems

In summary, the construction of AI curricula in undergraduate vocational education faces multiple challenges, including outdated course content, weak faculty resources, insufficient practical teaching conditions, and inadequate industry-education integration. These issues not only hinder the quality of AI talent cultivation but also limit the ability of vocational education to support industrial development effectively.

Therefore, constructing a scientifically sound and industry-aligned AI curriculum system has become an urgent task. Specifically, efforts should focus on optimizing course design to enhance coverage of core AI technologies and interdisciplinary knowledge, strengthening practical teaching by increasing investments in laboratory resources, improving faculty development through the recruitment of high-level talent and enterprise-based training, and deepening school-enterprise collaboration to establish effective cooperative education mechanisms. These measures will significantly enhance students' technical application capabilities, enabling undergraduate vocational education to better meet the demands of the new era while providing high-quality talent to support the rapid development of the AI industry[1].

3. Defining Training Objectives and Course Framework

The training objectives of the undergraduate vocational AI program should closely align with industry demands, focusing on cultivating application-oriented technical talents[3]. The program emphasizes the organic integration of theory and practice while fostering the comprehensive development of students' skills. Specifically, the goal is to produce well-rounded professionals with a solid theoretical foundation, proficient practical skills, innovative thinking, and strong professional ethics. These individuals should be capable of engaging in AI technology development, application, and management to drive regional economic growth and facilitate the transformation and upgrading of AI-related industries. To achieve this goal, the course framework must adhere to principles of scientific rigor and systematic design, comprising four key modules: general education courses, foundational professional courses, core professional courses, and practical courses. Together, these modules form a structured, progressive system for developing knowledge and skills.

3.1 General Education Courses: Building a Foundation and Enhancing Comprehensive Competencies

The general education courses aim to provide students with the essential foundational knowledge and skills required for subsequent professional learning while fostering their overall competencies and a sense of social responsibility. This module includes courses such as advanced mathematics, college English, and computer fundamentals, which help students develop logical thinking, language communication, and information processing skills. Additionally, courses on topics such as technology ethics and innovation & entrepreneurship should be integrated to enable students to understand the societal role of AI and its potential impacts[7].

For instance, in the technology ethics course, students can analyze real-world cases to deepen their understanding of the societal implications of AI technologies. Discussions could include cases such as "The Application of ChatGPT in Education," examining how it improves learning efficiency while raising concerns about academic integrity, or "Autonomous Driving Technology," analyzing its safety challenges and ethical responsibilities. These cases help students recognize the dual-edged nature of AI technologies, fostering their sense of social responsibility and professional ethics.

3.2 Foundational Professional Courses: Strengthening Technical Foundations and Laying Academic Groundwork

The foundational professional courses are designed to equip students with the essential theoretical and technical tools needed in the AI field, providing a solid foundation for advanced professional studies. This module includes courses such as linear algebra, probability and statistics, Python programming, and data structures & algorithms. Through these courses, students gain critical skills in mathematical modeling, programming implementation, and algorithm design, preparing them for in-depth exploration of AI technologies.

For example, in the "Python Programming" course, students learn how to use Python for data processing, algorithm implementation, and model training. A practical teaching activity could involve designing a "small-scale data analysis project," such as analyzing user purchasing behavior data from an e-commerce platform using Python. This project-based learning approach not only helps students better understand theoretical concepts but also cultivates their ability to solve real-world problems.

Additionally, the "Probability and Statistics" course can incorporate classical machine learning algorithms into its teaching. For instance, students can explore the practical application of probability theory in text classification through the case of a "Naive Bayes Classifier," such as designing a spam email filtering system. This case-based teaching method effectively enhances students' ability to apply theoretical knowledge to practical scenarios.

3.3 Core Professional Courses: Focusing on Key Technologies and Developing Problem-Solving Skills

The core professional courses constitute the central part of the AI curriculum, aiming to help students systematically master the core technologies in the AI field while developing their ability to solve real-world problems. This module includes courses such as machine learning, deep learning, computer vision, natural language processing, and reinforcement learning, covering the major domains of AI.

The course content should emphasize the deep integration of theory and practice[2]. For instance, in the "Deep Learning" course, students can learn the principles of convolutional neural networks (CNNs) and apply them in a practical image processing project, such as developing a "facial recognition system." During the project, students would complete tasks such as data collection, model training and optimization, and results validation. This approach not only helps students grasp deep learning technologies but also cultivates teamwork and project management skills.

In the "Natural Language Processing" course, a case study on developing an "intelligent customer service system" could be introduced. Students would learn how to use NLP techniques to implement text classification, sentiment analysis, and automated question-answering functions, thereby mastering the application of NLP in real-world scenarios. This case-based teaching approach enables students to connect theoretical knowledge with industry demands, enhancing their competitiveness in the job market.

3.4 Practical Courses: Strengthening Hands-On Skills and Enhancing Professional Competence

Practical courses are essential for cultivating students' hands-on skills and innovative thinking. These courses should be designed around real-world scenarios and industry needs, enabling students to transform theoretical knowledge into practical capabilities. Practical courses include project-based training, enterprise internships, and graduation projects. Through these activities, students can participate in real-world project development, enhancing their practical abilities and professional competence.

For instance, in the "Project-Based Training" course, students could work on developing an "intelligent security system." Using deep learning technologies, students would design a system that captures and recognizes abnormal behaviors through cameras and triggers automatic alerts. During the project, students would engage in tasks such as data processing, model optimization, and system integration, comprehensively improving their practical skills.

In the enterprise internship phase, students could be placed in AI-related companies, such as those in intelligent manufacturing, medical AI, or smart city sectors, to participate in actual projects. For example, during an internship at a medical AI company, students might work on developing a "medical image automatic diagnosis system," learning how to apply computer vision techniques to disease detection. This hands-on experience not only helps students accumulate real-world work experience but also deepens their understanding of industry requirements.

Graduation projects can encourage students to propose innovative solutions based on industry needs. For instance, a student might design a "voice recognition-based smart home control system," independently completing tasks such as requirement analysis, system design, functionality implementation, and performance testing. Such comprehensive projects enable students to consolidate their knowledge while enhancing their innovation capabilities and professional competitiveness.

4. Strengthening Practical Teaching and Industry-Education Integration

Undergraduate vocational education emphasizes the cultivation of students' practical and application-oriented abilities. Therefore, the AI curriculum should focus on practical teaching while promoting deep integration with industries. By building an integrated on-campus and off-campus practical teaching system, the curriculum can enhance students' technical application skills and their adaptability to industry demands. This can be achieved through the development of on-campus laboratories, enterprise collaboration projects, joint university-enterprise laboratories, and encouraging students to participate in competitions and research activities.

4.1 Building On-Campus Laboratories

On-campus laboratories serve as a critical foundation for practical teaching in AI education. Institutions should invest in constructing laboratories equipped with AI development platforms, GPU servers, robots, sensors, and other essential hardware. These facilities provide students with diverse practical scenarios for hands-on learning. Additionally, institutions must regularly update both software and hardware resources to keep pace with rapid technological advancements, ensuring that students are exposed to the latest tools and technologies[8]. For example, the integration of mainstream deep learning frameworks such as TensorFlow and PyTorch, along with data processing and modeling tools, can enable students to complete projects ranging from basic experiments to complex applications.

4.2 Developing Enterprise Collaboration Projects

Real-world enterprise projects are crucial for enhancing students' technical application skills. Institutions should establish in-depth partnerships with AI enterprises to collaboratively design and implement enterprise collaboration projects. Through these projects, students can develop technical skills, understand industry demands, and become familiar with enterprise workflows. For instance, by collaborating with intelligent manufacturing companies, institutions can develop a project on "Quality Inspection Systems Based on Computer Vision," where students participate in data collection, model training, and system deployment, thereby improving their teamwork and problem-solving abilities.

4.3 Establishing Joint University-Enterprise Laboratories

Joint university-enterprise laboratories represent an important approach to achieving industry-education integration. By sharing resources and co-developing technologies, universities and enterprises can provide students with a learning environment closely aligned with industry practices. This approach allows students to gain insights into cutting-edge technologies and workflows. Simultaneously, enterprises benefit by identifying and cultivating talented individuals. For example, a joint laboratory could focus on developing and optimizing "Intelligent Customer Service Systems," where students work under the guidance of enterprise mentors, gaining direct exposure to industrial applications while enhancing their professional competencies.

4.4 Encouraging Participation in Competitions and Research

Competitions and research projects provide students with valuable platforms to showcase their skills and gain practical experience. Institutions should actively encourage students to participate in AI-related innovation and entrepreneurship competitions, research projects, and technical contests. These activities not only enhance students' practical and innovative abilities but also broaden their horizons and build their professional experience. For instance, students can participate in national competitions such as the "National Artificial Intelligence

Innovation Competition," where they tackle technical challenges and collaborate in teams, further improving their comprehensive abilities and industry competitiveness.

5. Optimizing Faculty Development

A high-quality faculty team is essential for the successful implementation of an AI curriculum and the improvement of teaching quality. Undergraduate vocational institutions should adopt measures such as attracting high-level talent, enhancing teacher training, and promoting the integration of research and teaching. These efforts aim to build a team of educators with strong theoretical foundations and extensive practical experience, providing critical support for the curriculum.

5.1 Attracting High-Level Talent

High-level talent in the AI field is a key resource for improving teaching quality[3]. Institutions should actively recruit PhD graduates, returning overseas scholars, and technical experts with extensive industry experience. These professionals can bring cutting-edge knowledge and industry insights into the classroom, enhancing the academic rigor and practicality of courses. For example, recruiting a PhD holder with a background in deep learning research can contribute to the "Deep Learning" course by incorporating the latest theories and technological advances, providing students with access to higher-level knowledge systems.

5.2 Enhancing Teacher Training

For existing faculty, institutions should regularly organize participation in domestic and international AI training programs, academic exchanges, and technical seminars to help teachers stay updated with the latest technological trends and teaching methods. Additionally, institutions can arrange for teachers to gain practical experience by temporarily working in enterprises, deepening their understanding of industry demands and technological applications. For instance, a faculty member participating in the development of an "Intelligent Security System" during a temporary enterprise placement can transform this experience into teaching cases, thereby enhancing the relevance and appeal of the curriculum.

5.3 Promoting Integration of Research and Teaching

Integrating research and teaching is an effective way to enhance the academic rigor of courses. Institutions should encourage faculty to participate in AI-related research projects and incorporate their findings into teaching content, thereby improving the academic depth and practical value of the curriculum. Additionally, institutions should support faculty in developing high-quality textbooks, teaching cases, and online course resources to improve the overall quality of educational materials. For example, a faculty member engaged in a natural language processing research project could develop a case study on "Semantic Analysis-Based Intelligent Question-Answering Systems" and use it as teaching material in the "Natural Language Processing" course, helping students better understand real-world applications of the technology.

6. Introducing Innovative Teaching Methods

AI education should fully utilize modern educational technologies and adopt diverse teaching methods to enhance students' learning outcomes and classroom engagement. By incorporating online course resources, flipped classrooms, project-based teaching, and virtual simulation experiments, institutions can better meet students' learning needs and improve the flexibility and effectiveness of teaching.

6.1 Massive Open Online Courses (MOOCs)

MOOCs provide students with an essential channel to access high-quality educational resources. Institutions should make full use of platforms such as Coursera, edX, and domestic platforms like XuetangX to expand students' learning opportunities and enable them to independently explore cutting-edge knowledge in the field of AI. For instance, students can study topics such as "Reinforcement Learning" through online courses and further deepen their understanding by integrating these materials into classroom discussions. This blended learning model, which combines online and offline resources, can significantly enhance learning outcomes[9].

6.2 Flipped Classroom Teaching Model

The flipped classroom model integrates "pre-class learning + in-class interaction + post-class practice," enhancing students' initiative and engagement during class. For example, in a "Machine Learning" course, students can watch instructional videos before class to understand fundamental concepts, participate in group discussions and algorithm implementation during class, and complete related project assignments after class. This approach effectively improves students' learning autonomy and practical abilities.

6.3 Project-Based Teaching

Project-based teaching combines course content with industry demands, enabling students to acquire knowledge and skills through solving real-world problems. For instance, in a "Computer Vision" course, a project such as "Deep Learning-Based Waste Classification System" can be designed. Students are required to complete tasks such as data collection, model training, and optimization, thereby cultivating their problem-solving abilities and project management skills.

6.4 Virtual Simulation Experiments

Virtual simulation experiments leverage Virtual Reality (VR) and Augmented Reality (AR) technologies to provide students with flexible practical teaching environments. For example, in an "Autonomous Driving Technology" course, students can use virtual simulation experiments to simulate tasks such as path planning and obstacle detection for autonomous vehicles. This approach not only reduces experimental costs but also enhances the flexibility and innovation of practical teaching.

7. Implementation Support and Recommendations

To ensure the effective implementation of the AI curriculum, undergraduate vocational institutions need comprehensive support in terms of policies, resources, and evaluation mechanisms.

Governments and education authorities should introduce special funding programs to support the development of AI programs in vocational institutions, including laboratory construction, faculty training, and course development. Policies should also incentivize enterprises to actively participate in university-industry collaborations.

Establish long-term, stable collaboration mechanisms with enterprises to jointly develop courses, design practical training projects, and host technical exchange activities, promoting resource sharing and mutual benefits.

Regularly evaluate the curriculum through surveys, feedback sessions, and other methods to collect input from students, faculty, and enterprises. Use the evaluation results to dynamically adjust course content, ensuring the curriculum remains aligned with industry developments and student needs.

By implementing these measures, undergraduate vocational institutions can construct a scientifically sound and comprehensive AI curriculum, effectively cultivating high-quality application-oriented technical talents. This will contribute to the rapid development of the AI industry and drive technological innovation.

8. Implementation Support and Recommendations

To ensure the effective implementation of AI curricula, undergraduate vocational institutions need to establish a systematic support framework encompassing policy support, resource assurance, and evaluation optimization. Based on specific measures and logical frameworks, this section provides targeted recommendations.

8.1 Policy Support

Governments and education authorities should introduce targeted policies to provide comprehensive support for the construction of AI curricula in undergraduate vocational institutions. Specific measures include:

(1)Specialized Funding Programs: Establish funding programs to support laboratory construction, faculty training, and curriculum development, ensuring the infrastructure and teaching capabilities meet the demands of AI education.

(2) Incentives for Industry Collaboration: Implement tax incentives, subsidies, and other policies to encourage enterprises to actively participate in university-industry collaborations, contributing to course development, technical training, and practical projects.

(3) Industry Advisory Mechanisms: Form industry advisory committees involving experts to guide curriculum design and ensure alignment with industry trends.

8.2 Resource Assurance

During curriculum implementation, undergraduate vocational institutions should focus on efficient resource allocation and achieve mutual benefits through university-industry collaboration and resource sharing,as shown in Figure 1.

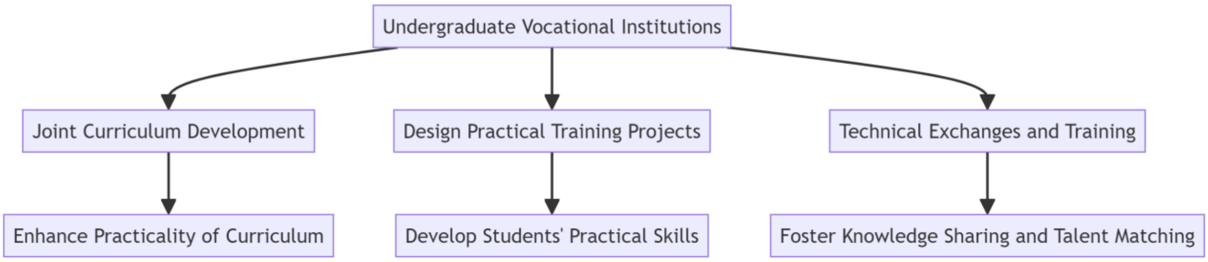

Figure 1. University-Industry Collaboration Model

8.3 Evaluation Optimization

To ensure continuous improvement in curriculum content and teaching methods, undergraduate vocational institutions should establish a dynamic evaluation mechanism based on feedback from students, faculty, and enterprises, as shown in Figure 2.

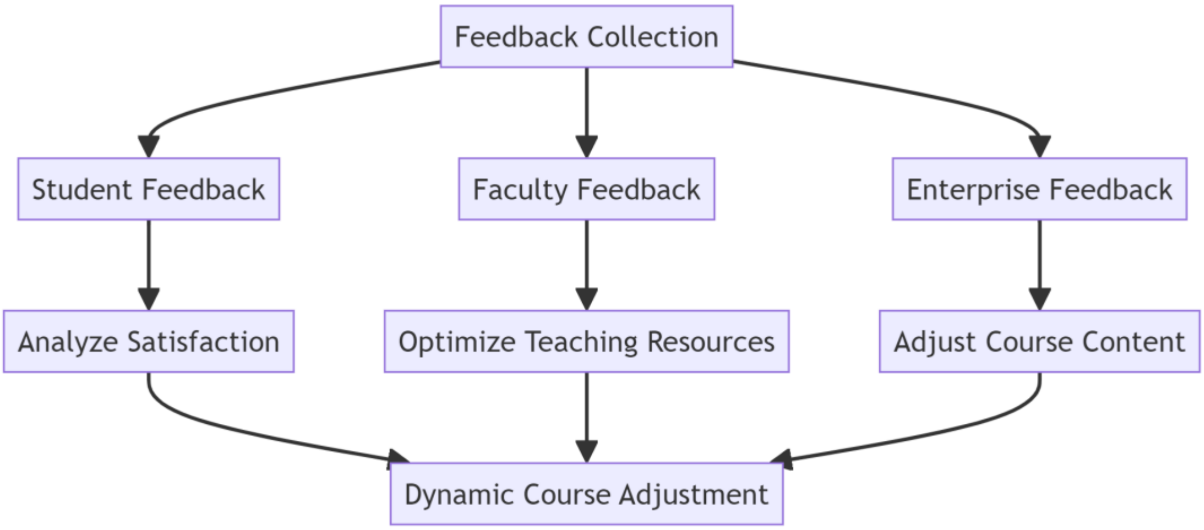

Figure 2. Curriculum Evaluation and Optimization Feedback Loop

9. Conclusion and Future Outlook

In the new era, constructing an AI curriculum system for higher vocational undergraduate education requires aligning closely with industry demands, emphasizing competency-based education, and integrating school-enterprise collaboration with practical teaching. As AI technologies rapidly evolve, higher vocational institutions must adopt flexible and diversified curriculum models, combining theoretical knowledge with hands-on practice to cultivate high-quality AI professionals. By continuously innovating and adapting to industry trends, these institutions can effectively meet the talent demands of the AI era and contribute to the sustainable development of the industry[1].

Reference

[1] Qian, L., Cao, W., & Chen, L. (2025). Influence of artificial intelligence on higher education reform and talent cultivation in the digital intelligence era. *Scientific Reports*, *15*(1), 6047. https://doi.org/10.1038/s41598-025-66299-y

[2] Abbasi, B. N., Wu, Y., & Luo, Z. (2025). Exploring the impact of artificial intelligence on curriculum development in global higher education institutions. *Education and Information Technologies*, *30*(1), 547-581. https://doi.org/10.1007/s10639-024-12628-8

[3] Zhu, W., & Ouyang, P. (2024). Research on the Development Path of Vocational Undergraduate Education in the Context of Intelligent Manufacturing. *Frontiers in Educational Research*, *7*(12).

[4] *China Artificial Intelligence Industry Development Report, 2023*. (2023).

[5] *China Vocational Education Development Report*. (n.d.).

[6] *Study on Practical Teaching Infrastructure in Vocational AI Education, 2024*. (2024).

[7] *Ethics and AI: Integrating Social Responsibility into Technical Education, 2023*. (2023).

[8] *Technological Advancements in AI Education Labs: A Global Perspective, 2025*. (2025).

[9] *Impact of MOOCs on AI Skill Development in Higher Education, 2024*. (2024).

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