

Construction and Implementation of a "Learner-Centered" Business Education Model Based on Artificial Intelligence Technology

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Abstract: With the rapid development of artificial intelligence (AI) technology, its application in education has attracted increasing attention. This paper aims to explore how to construct a "learner-centered" business education model based on AI technology and analyze its practicality from a theoretical perspective. The study first elaborates on the concept of "learner-centered" education through literature review and analyzes the existing problems in business education. Then, drawing on theories from education and information technology fields, this paper proposes a framework for a business education model that integrates AI technology. The study adopts logical reasoning and model construction methods to analyze the application of AI in personalized learning path design, learning process management, and learning effectiveness evaluation systematically. The paper emphasizes the role of AI in assisting teachers in understanding student needs, optimizing teaching content and methods, and improving the interactivity of teaching activities and the accuracy of learning effectiveness measurement. The conclusion suggests that an AI-based business education model can enhance personalization and adaptability in education, improve student engagement and satisfaction, while highlighting the need to address ethical and privacy concerns in AI applications. This research has important theoretical significance and practical value for guiding future innovations in business education models.

Keywords: Artificial Intelligence; Business Education; Learner-centered; Teaching Model; Personalized Learning

1. Introduction

In the context of globalization, business education faces challenges brought by technological changes. Artificial intelligence, as an important component of modern information technology, is gradually infiltrating the field of education, posing new requirements for traditional teaching models and concepts [1]. A learner-centered teaching model is more in line with the needs of contemporary education, as it can better stimulate students' learning enthusiasm and improve learning outcomes. This study aims to construct a "learner-centered" business education model supported by artificial intelligence technology and explore its effective application. [1-8]

2. Theoretical Foundations and Literature Review

2.1 Learner-Centered Education Concept

The learner-centered education concept emphasizes student autonomy, relevance of curriculum content, and adaptability of teaching methods [3]. Student autonomy encourages active participation in the learning process, fostering independent thinking and problem-solving skills. Relevance of curriculum content requires linking learning to real-life and career needs, making learning more meaningful and practical. Adaptability of teaching methods calls for flexible selection and utilization of various teaching strategies and forms to meet students' learning needs and improve learning outcomes.

2.2 Integration of Artificial Intelligence Technology and Education

Currently, artificial intelligence technology has been widely applied in the field of education. Intelligent teaching systems use AI technology to provide personalized teaching content and

learning paths based on students' learning conditions and characteristics, helping students learn and master knowledge more efficiently. Furthermore, AI technology can provide intelligent assistive teaching tools, such as intelligent homework correction and automated assessment systems, as well as virtual laboratories and simulated practical environments, through natural language processing and machine learning, offering richer learning resources and experiences [4]. the application of artificial intelligence technology can optimize the teaching process and enhance teaching effectiveness.

2.3 Theoretical Framework of Related Research

To support the learner-centered business education model, this study will construct a comprehensive theoretical framework combining educational psychology and information technology perspectives. the theoretical foundations of educational psychology help understand students' learning processes, cognitive characteristics, and strategies to promote their active engagement in learning. the information technology perspective offers methods and approaches to support learner-centered teaching using AI technology and educational technology tools. By integrating theories from these two domains, the study provides theoretical support and guidance for the design and implementation of business education models, better meeting students' learning needs and improving teaching effectiveness. [9-12]

3. Construction of a Business Education Model Supported by Artificial Intelligence

3.1 Principles of Model Construction

When constructing a business education model, certain principles need to be established. Firstly, the model should meet learners' personalized needs, considering each student's unique characteristics and learning styles, and providing personalized learning support. Secondly, the model should balance knowledge transmission and skill cultivation, emphasizing the development of practical skills and problem-solving abilities. Finally, the model should achieve the best match between teaching content and learners' needs, effectively integrating teaching content with

students' interests, career goals, and other factors.

3.2 Intelligent Design of Teaching Content and Methods

Artificial intelligence technology can play a significant role in designing teaching content and methods. Through AI, intelligent adaptation of teaching content can provide personalized learning materials and tasks based on students' learning situations and needs. Similarly, personalized teaching methods can be designed by employing various teaching strategies and activity formats according to students' learning characteristics and requirements, stimulating their learning interests and engagement. Intelligent teaching systems can offer optimization suggestions for teaching strategies based on learning data and feedback, assisting teachers in better guiding students.

3.3 Intelligent Management of the Learning Process

Artificial intelligence technology can realize intelligent management of the learning process. AI can intelligently plan learning paths, providing appropriate learning content and sequences based on students' learning objectives and progress. Furthermore, it can monitor the learning process, record and analyze data at various stages to grasp students' learning situations and difficulties. Personalized feedback and support can be provided based on data analysis to help students better understand and master knowledge. Such intelligent management enhances students' learning effectiveness and motivation, facilitating their academic growth and personal development.

4. Analysis of Artificial Intelligence Applications in Business Education

4.1 Personalized Learning Path Design

Personalized learning path design is one of the significant applications of artificial intelligence in business education. Through AI technology, personalized learning paths can be intelligently designed for each student based on their learning situations, abilities, and interests. Smart teaching systems can offer appropriate learning resources and materials according to students' prior knowledge and learning goals,

ensuring the appropriate difficulty and challenge of learning content. Learning paths can be adjusted in real-time based on learning data and feedback, helping students overcome difficulties and fill knowledge gaps. Personalized learning path design also considers students' learning styles and preferences, selecting suitable learning methods and teaching strategies. Personalized learning path design enhances students' motivation and learning outcomes, fostering their personal growth and sense of achievement.

4.2 Intelligent Learning Process Management

Intelligent management of the learning process in business education can be achieved through artificial intelligence technology. Firstly, AI can intelligently monitor and record the learning process. Learning systems can provide comprehensive information on students' learning behaviors, time spent on learning, and learning outcomes. Secondly, analysis of learning data allows real-time feedback and personalized learning support. Automated assessment and evaluation systems facilitate timely understanding of students' learning situations and progress, enabling adjustments to learning strategies. Furthermore, intelligent learning process management can assist in planning and managing learning progress, helping students allocate study time and tasks properly, avoiding learning pressure and confusion. Intelligent learning process management improves students' learning efficiency, outcomes, and fosters their self-directed learning ability and self-discipline.

4.3 Intelligent Evaluation of Teaching Effectiveness

Artificial intelligence technology can achieve intelligent evaluation of teaching effectiveness in business education. Traditional teaching effectiveness assessment relies on subjective judgments of teachers and students' exam scores, which can be subjective and one-sided. Leveraging AI, comprehensive and objective evaluation of students' learning process is possible. AI can analyze students' learning data and behaviors from multiple perspectives, such as knowledge mastery, problem-solving abilities, and learning interests. Machine learning and data mining techniques can

establish prediction models for teaching effectiveness, foreseeing students' future learning performance and trends. Moreover, AI can provide teachers with visualization tools and reports for teaching effectiveness evaluation, helping them better understand students' learning situations and teaching effectiveness, and make necessary adjustments and improvements based on evaluation results.

5. Discussion

5.1 Prospects and Challenges of Artificial Intelligence in Education

The application of artificial intelligence in business education holds vast prospects. Personalized learning path design can meet the diverse needs of students, providing customized learning experiences. Intelligent learning process management helps students plan their learning effectively, improving learning efficiency and outcomes. Intelligent evaluation of teaching effectiveness enables comprehensive and objective assessment, providing better teaching references and guidance for teachers.

However, the application of artificial intelligence in education also faces challenges. Privacy protection and data security should be prioritized in personalized learning path design to safeguard students' personal information. Intelligent learning process management requires teachers to possess relevant technological and pedagogical competencies to effectively utilize AI in teaching management. Intelligent evaluation of teaching effectiveness demands the establishment of effective assessment models and accurate evaluation indicators to ensure assessment accuracy and reliability.

5.2 Sustainable Development of Learner-Centered Business Education Models

The learner-centered business education model is a current trend in business education development. The application of artificial intelligence supports this teaching model. Through personalized learning path design, intelligent learning process management, and intelligent evaluation of teaching effectiveness, the learner-centered business education model can better meet students' learning needs and improve teaching effectiveness.

To ensure the sustainable development of

learner-centered business education models, several efforts are necessary. In-depth research on students' learning needs and characteristics is needed to continuously optimize personalized learning path design and provide more precise and targeted learning support. Strengthening teacher professional development in information technology and instructional capabilities enables better application of AI technology for teaching process management. Additionally, strengthening education research and policy support is crucial to actively promote the application of artificial intelligence in business education, creating better teaching environments and learning conditions for teachers and students.

6. Conclusion

This study primarily focuses on the application of artificial intelligence in business education. Through personalized learning path design, intelligent learning process management, and intelligent evaluation of teaching effectiveness, AI technology can effectively support the implementation of learner-centered business education models. However, privacy protection, teacher professional development, and assessment accuracy need to be considered when applying AI technology. To promote the sustainable development of learner-centered business education models, we recommend strengthening research on students' needs, enhancing teachers' information technology competencies, and strengthening educational research and policy support. Through these efforts, we can provide better theoretical support and practical guidance for the development of business education.

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