

Research on the application of digital intelligence empowerment in university computer teaching

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Abstract: This paper conducts an in-depth exploration and research on the application of digital intelligence empowerment in university computer teaching. It analyzes the current situation and challenges of university computer teaching, examines the potential and advantages of digital intelligence empowerment, and proposes specific strategies and methods for its application. Through case studies and practical experiments, the effectiveness and impact of digital intelligence empowerment in university computer teaching are evaluated. The aim is to provide valuable references and suggestions for improving the quality and efficiency of university computer teaching and cultivating innovative talents with digital intelligence capabilities.

Keywords: digital intelligence empowerment; university computer teaching; application research; innovation and talent cultivation

I. Introduction

In the era of rapid development of digital technology, digital intelligence empowerment has become an important trend in education. University computer teaching, as an important field of cultivating digital talents, needs to actively explore and apply digital intelligence empowerment to improve teaching quality and effectiveness. This paper focuses on the application of digital intelligence empowerment in university computer teaching, aiming to provide theoretical and practical guidance for the reform and innovation of university computer teaching.

II. Current Situation and Challenges of University Computer Teaching

A. Current Situation

Teaching content and methods.

University computer teaching mainly focuses on imparting basic computer knowledge and skills, such as programming, database management, and network technology. The teaching methods are mainly classroom lectures and laboratory practices.

Student characteristics and learning needs
University students have different backgrounds and levels of computer knowledge. Some

students have a certain foundation in computer technology, while others may be beginners. At the same time, students have diverse learning needs and expectations, hoping to acquire practical skills and knowledge that are useful for their future careers.

Teaching resources and facilities.

Most universities have equipped with computer laboratories and teaching software, providing basic teaching resources for computer teaching. However, with the continuous development of digital technology, the update and expansion of teaching resources and facilities need to be further strengthened.

B. Challenges

Rapidly changing technology.

The field of computer technology is evolving rapidly, and new technologies and applications emerge constantly. University computer teaching needs to keep up with the pace of technological development and update teaching content and methods in a timely manner.

Diverse learning needs.

As mentioned earlier, students have diverse learning needs and expectations. How to meet the individual needs of different students and provide personalized teaching services is a challenge for university computer teaching.

Limited teaching resources and facilities
Although universities have some teaching

resources and facilities, they may still be insufficient to meet the needs of teaching. In addition, the management and utilization of teaching resources and facilities also need to be improved.

III. Potential and Advantages of Digital Intelligence Empowerment in University Computer Teaching

A. Potential

Personalized learning.

Digital intelligence technology can analyze students' learning behaviors and characteristics, and provide personalized learning plans and recommendations. This can help students better understand their own learning needs and improve learning efficiency.

Intelligent teaching assistant.

Digital intelligence technology can be used to develop intelligent teaching assistants, such as chatbots and virtual tutors, which can answer students' questions in real time and provide guidance and support.

Interactive teaching.

Digital intelligence technology can create interactive teaching environments, such as virtual reality and augmented reality, which can enhance students' learning experience and interest.

Data-driven teaching evaluation.

Digital intelligence technology can collect and analyze students' learning data, providing a basis for teaching evaluation and improvement.

B. Advantages

Improving teaching efficiency.

Digital intelligence empowerment can automate some teaching tasks, such as grading and feedback, saving teachers' time and energy. At the same time, it can also provide students with more efficient learning resources and tools.

Enhancing teaching quality.

By providing personalized learning plans and intelligent teaching assistants, digital intelligence empowerment can help students better understand and master computer knowledge and skills, thereby improving teaching quality.

Cultivating innovative talents.

Digital intelligence empowerment can

stimulate students' creativity and innovation ability by providing interactive teaching environments and data-driven teaching evaluation. This is conducive to cultivating innovative talents with digital intelligence capabilities.

IV. Strategies and Methods for Applying Digital Intelligence Empowerment in University Computer Teaching

A. Curriculum design

Incorporate digital intelligence technology into teaching content. In the design of computer courses, digital intelligence technology should be incorporated as much as possible, such as artificial intelligence, big data, and cloud computing. This can help students understand the latest developments in the field of computer technology and improve their digital intelligence literacy.

Design personalized learning paths
Based on students' learning behaviors and characteristics, personalized learning paths can be designed to meet the individual needs of different students. For example, for students with different levels of computer knowledge, different learning modules and tasks can be provided.

B. Teaching methods

Use intelligent teaching tools.

Intelligent teaching tools such as online learning platforms, educational apps, and virtual reality can be used to provide students with more diverse and interactive learning experiences. For example, students can use online learning platforms to complete homework and quizzes, and use virtual reality technology to simulate practical projects.

Implement flipped classroom teaching
Flipped classroom teaching can be implemented, in which students preview and learn basic knowledge before class through online resources, and then conduct in-depth discussions and practices in class. This can improve students' autonomous learning ability and classroom participation.

Carry out project-based learning
Project-based learning can be carried out, in

which students complete practical projects in groups to apply what they have learned and cultivate their teamwork and innovation abilities. For example, students can be asked to design and develop a software application or a website.

C. Teaching evaluation

Establish a data-driven evaluation system
A data-driven evaluation system can be established to collect and analyze students' learning data, such as test scores, homework completion, and classroom participation. This can provide a basis for evaluating students' learning progress and teaching effectiveness.

Incorporate multiple evaluation methods
Multiple evaluation methods such as formative evaluation and summative evaluation, teacher evaluation and peer evaluation, and self-evaluation can be incorporated to provide a more comprehensive and objective evaluation of students' learning.

D. Teacher training

Provide training on digital intelligence technology.
Teachers should be provided with training on digital intelligence technology to improve their understanding and application of digital intelligence in teaching. This can help teachers better design and implement digital intelligence empowerment in computer teaching.

Encourage teachers to explore and innovate
Teachers should be encouraged to explore and innovate in teaching, and share their experiences and achievements. This can promote the continuous improvement and innovation of digital intelligence empowerment in university computer teaching.

V. Case Studies and Practical Experiments

A. Case studies

University A.

University A has introduced an intelligent learning platform into computer teaching. The platform can analyze students' learning behaviors and provide personalized learning recommendations. At the same time, it also has functions such as online Q&A and discussion forums, which can enhance students' interaction and communication. Through the application of

this platform, students' learning enthusiasm and efficiency have been significantly improved.

University B.

University B has carried out project-based learning in computer teaching. Students are divided into groups to complete practical projects, such as developing mobile applications and designing database systems. During the project implementation process, teachers provide guidance and support. Through project-based learning, students' practical ability and innovation ability have been effectively cultivated.

B. Practical experiments

Experimental design.

An experimental group and a control group are set up. The experimental group uses digital intelligence empowerment in computer teaching, while the control group uses traditional teaching methods. The learning effects of the two groups are compared through tests and questionnaires.

Experimental results.

The experimental results show that students in the experimental group have better learning effects in terms of test scores, learning motivation, and satisfaction. This indicates that digital intelligence empowerment can effectively improve the quality and efficiency of university computer teaching.

VI. Conclusion

Digital intelligence empowerment has great potential and advantages in university computer teaching. By applying digital intelligence technology in curriculum design, teaching methods, teaching evaluation, and teacher training, university computer teaching can be more personalized, intelligent, and interactive, thereby improving teaching quality and efficiency and cultivating innovative talents with digital intelligence capabilities. However, the application of digital intelligence empowerment also faces some challenges, such as the need for continuous technological innovation and the improvement of teachers' digital literacy. Therefore, universities and educators need to continuously explore and innovate to promote the in-depth integration of digital intelligence and university computer

teaching.

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