Research on the Innovation Path of the New Form Curriculum in the Environment of Digital Intelligence Integration

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Abstract: This paper explores the path of university curriculum innovation under the environment of digital intelligence integration, and analyzes the transformation of educational technology and its promotion on curriculum innovation. The importance of flexibility, interactivity and personalization in digital curriculum design is emphasized, and teaching model innovations, such as personalized learning path and interactive improvement, are discussed. The design and implementation of the new form of curriculum are studied, including the construction of curriculum system, the innovation of teaching method and the integration of teaching resources and technology. It points out the importance of improving teachers digital literacy and data analysis skills, and provides a direction for the future development of university education.

1. Introduction

1.1. Analysis of the Development Status of Educational Technology in Colleges and Universities

Today, with the rapid development of science and technology, university education technology is undergoing a profound transformation. The integration of data and intelligence, which is the deep combination of digitalization and intelligence, provides new tools and platform for educational technology and promotes curriculum innovation. Traditional classrooms are no longer the only place to impart knowledge, and digital technologies such as virtual reality and online learning platforms make it more diversified ways to acquire knowledge. The introduction of artificial intelligence makes the teaching content be personalized and intelligent, and the role of teachers is transformed into the guide and promoter of learning[1]. The educational technology in the environment of digital intelligence integration not only updates the technical tools, but also innovates the educational concept, and promotes the construction of the student-centered teaching mode[2]. Through data-driven and intelligent analysis, the course design spans the subject boundaries, accurately grasps the needs of students, and cultivates innovative talents to meet the needs of the future society. The combination of educational technology and the integration of digital intelligence in colleges and universities will open a new era of education.

1.2. Background and Significance Analysis of Digital Intelligence Fusion

In the era of intellectual integration, college education is facing great opportunities and challenges. The integration of data and intelligence, which integrates big data, artificial intelligence, the Internet of Things and other technologies, is changing the social operation mode and putting forward new requirements for the university education system. College curriculum innovation needs to adapt to and embrace the development of technology to better serve the goal of education[3].

Curriculum innovation is not only a change in form, but also a renewal of concept. In the environment of digital-intellectual integration, curriculum design should consider diversified learning methods and dynamic knowledge update, so that students can become explorers and creators of knowledge. Digital intelligence technology provides students with the possibility of

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personalized learning, real-time feedback and interdisciplinary collaboration, making the educational process more flexible and efficient. Through big data analysis, educators can accurately grasp the needs of students and realize the optimal allocation of educational resources.

The integration of data and intelligence promotes universities to redefine the roles of teachers and students, teachers become the guides and promoters of learning, and the course content should be integrated into the latest technological development. The change of educational connotation and extension makes the curriculum innovation become the internal power of the development and reform of colleges and universities. Effectively integrating digital intelligence technology, the new form of curriculum is expected to improve the quality and mode of education, and cultivate talents to meet the needs of the future society[4].

2. Curriculum Design and Teaching Strategies Supported by Digital Technology

2.1. Digital Curriculum Design Principles

The rapid development of digital technology has injected new vitality into the curriculum design. In the environment of the integration of data and intelligence, the curriculum design needs to go beyond the traditional mode and integrate the principles of flexibility, interactivity and individuation. Flexibility not only refers to the change of course content, but more importantly, the dynamic adjustment of teaching strategies. Teachers need to use digital tools to timely adjust the course progress and teaching methods according to the individual needs of students, to ensure that each student has the best support in their learning path[5]. Teaching in the digital environment is no longer a one-way information transmission, but a multi-dimensional knowledge exchange. Interactivity is particularly important in this environment, which requires that the design of teaching activities must be able to stimulate students enthusiasm for participation, and create an ecosystem that encourages students to learn actively through virtual experiments, real-time feedback and online discussion. Personalization is the soul of digital curriculum design. In the ocean of information, each student is a unique existence, and personalized principles require that curriculum design be able to identify and respond to students learning style, interest and ability level. Through big data analysis and artificial intelligence technology, teachers can customize learning paths and content recommendations for students, making the learning experience more suitable for individual needs. This personalized learning not only improves students learning efficiency, but also creates a more pleasant learning experience for them. With the support of digital technology, the three principles of flexibility, interactivity and individuation are interwoven and complementary, jointly promoting the innovation of curriculum design, and creating a richer, more diversified and more profound learning experience in the educational environment of digital and intellectual integration[6]. This transformation not only improves the quality of teaching, but also provides broad possibilities for the future development of education.

2.2. Teaching Mode Innovation in the Environment of Digital and Intelligent Integration

In the educational environment of digital and intellectual integration, the innovation of teaching mode is particularly important, especially in the design of personalized learning path and improving the interactivity and participation[7]. The intervention of digital technology provides unprecedented opportunities for educators to re-examine the traditional teaching model from a new perspective. The design of personalized learning paths has shifted from the traditional "one-size fits all" model to a more flexible and adaptable model. This change is due to the support of data analysis and artificial intelligence, which can tailor the learning content to each students learning interest, ability level and personality characteristics to maximize the learning effect. Through the learning analysis tools, teachers can monitor students learning progress and performance in real time, dynamically adjust teaching strategies, and ensure that every student can learn at the right pace and difficulty.

Increasing interactivity and engagement is another core issue[8]. In the environment of digital intelligence integration, the addition of augmented reality, virtual reality and intelligent classroom technologies has greatly enriched the form and content of teaching activities. These technologies

can not only build an immersive learning experience, but also promote the interaction between students and teachers and students. Intelligent equipment enables every participant in the classroom to actively participate in it. Students are no longer passive knowledge recipients, but active knowledge builders. Online platforms, social media, and learning communities further expand the dimension of interaction, break the limitations of time and space, and enable learning activities to be carried out in a wider context.

In this context, the role of teachers has also changed. They are not only the transmitters of knowledge, but also the guides and supporters of learning. Teachers need to have higher digital literacy and be able to skillfully use a variety of technical tools to design engaging learning experiences. By creating a dynamic and interactive learning environment, the teaching model of digital and intellectual integration can not only enhance students learning motivation and participation, but also cultivate their critical thinking and innovation ability to prepare for the challenges of the future.

3. Design and Implementation of New Form Curriculum

3.1. Construction Principles of the Curriculum System

In the environment of digital-intellectual integration, the design and implementation of the new form curriculum must take the student center and ability cultivation as the core, interdisciplinary and practice orientation as the path, so as to build a flexible and forward-looking curriculum system. Students are no longer just passive receivers of knowledge, but should become active participants, explorers and innovators of learning. In this context, the construction of the curriculum system requires a deep understanding of students personalized needs, respect for their learning pace and methods, and stimulate students internal learning motivation through diversified teaching methods and evaluation methods, so that they can acquire knowledge and improve their complex problem solving ability.

The interdisciplinary design concept requires the curriculum to break the traditional subject boundary and integrate the knowledge system of multiple fields to deal with the complex problems in modern society[9]. Through interdisciplinary learning, students can form a multi-dimensional connection in the way of thinking, and then cultivate their innovative thinking, comprehensive analysis ability and teamwork spirit. This design not only provides both breadth and depth at the level of knowledge, but also encourages students to apply theoretical knowledge to the real world challenge in practice.

The principle of practice orientation emphasizes that the course must be closely combined with practical application scenarios, and emphasizes the cultivation of practical ability. Through experiments, projects, internship and other forms, students can temper their practical ability and innovative consciousness in real situations[10]. Such a curriculum system is not only the transmission of knowledge, but also provides a platform for students to create and experience, so that they can understand the real meaning and value of knowledge in the specific operation, and then enhance their professional competitiveness and social responsibility.

In this process, the role of teachers should also be changed into a guide and supporter of learning, providing continuous feedback and guidance for students, help them find and solve problems in the learning process, and form the ability of critical thinking and continuous learning. The curriculum system not only realizes innovation in content and form, but also achieves a breakthrough in the educational concept, which truly embodies the student-centered educational thought.

3.2. Innovation and Practice of Teaching Methods

Driven by the environment of digital-intellectual integration, the design and implementation of the new form of curriculum in colleges and universities have ushered in unprecedented opportunities and challenges. As a model of teaching method innovation, flipped classroom and mixed learning redefine the mode of interaction between teachers and students. In the flipped classroom, the traditional way of imparting knowledge in the classroom is overturned, and teachers

become the guides to stimulate students to study independently before class. In this process, students study by themselves through videos and online resources, and the class time is used to deepen understanding, solve problems and carry out discussions. This method not only improves the depth and breadth of learning, but also cultivates students initiative and critical thinking.

Hybrid learning organically combines online and offline teaching to extend the time and spatial dimensions of learning. Online courses provide flexible and personalized learning paths, while offline face-to-face communication strengthens the emotional connection and academic guidance. Through this combination, students can achieve a balance between independent learning and cooperative inquiry, and maximize the teaching effect.

Project-based learning and collaborative inquiry are the core elements of the new form of curriculum, and students acquire knowledge and skills by undertaking practical projects. This learning method emphasizes task-driven and problem-solving. Through exploration and reflection in practice, students not only master knowledge, but also cultivate the ability of teamwork and innovation. Collaborative inquiry creates an ecosystem of cooperative learning, in which students share views, integrate resources and solve complex problems in groups, so as to construct a multidimensional network of knowledge. Such deep participation and interaction not only inspires students learning motivation, but also promotes the development of their critical thinking and creativity[11].

These innovative teaching methods not only respond to the call of The Times, but also provide a broad space for the comprehensive development of students, and also draw a brilliant picture for the future development of the new form of curriculum in colleges and universities. Through continuous practice and reflection, the potential of teaching innovation will be continuously excavated, injecting a steady stream of new impetus into the reform of education.

3.3. The Integration of Teaching Resources and Technologies

In the context of digital intelligence integration, the deep integration of teaching resources and technology provides infinite possibilities for the design and implementation of new forms of curriculum. The digital transformation of teaching content has become an irreversible trend, which is not only the transformation of traditional teaching materials into digital forms, but also the reconstruction and regeneration of teaching content. Through highly interactive multimedia resources and virtual reality technology, the course content can be presented in a multi-dimensional dynamic form, transforming abstract concepts and simplifying complex theories, and thus greatly improving students learning experience and participation. In such an environment, knowledge is no longer static text and images, but vivid and operable entities, and learners can realize the internalization and innovative application of knowledge in an immersive experience.

At the same time, the innovation of teaching evaluation and feedback mechanism has become the key factor for the successful implementation of the new form of curriculum. In the diversified digital learning environment, the traditional evaluation method cannot fully reflect the actual learning results of students. Relying on data analysis and artificial intelligence technology, the dynamic evaluation system can collect and analyze various data in the learning process in real time, and generate personalized learning analysis reports. Such an evaluation mechanism not only focuses on the final learning results, but also pays more attention to the progress and challenges in the learning process. It provides timely feedback and guidance, helps teachers to carry out targeted teaching adjustments, and also provides the direction and motivation for students independent learning. With the continuous evolution of technology, the evaluation and feedback mechanism will be more intelligent and personalized, and promote the integration of teaching resources and technology to a higher level of innovation. The new form of curriculum can take root and sprout in such a complex and dynamic ecosystem, constantly growing infinite possibilities and innovation.

4. Cultivation of Teachers Professional Ability and Accomplishment

4.1. Improvement Path of Teachers Digital Literacy

In the educational environment of the integration of data and intelligence, improving teachers digital literacy is not only the deepening of individual ability, but also an important pillar of educational innovation. The path to improving digital literacy lies first in a deep understanding of the nature of digital technology and beyond the surface of tools and applications. Teachers need to develop a keen perception of digital technology ideas, understand its innovation and transformability, and feel its potential influence in education.

The key way to improve digital literacy is to actively use information technology tools and modern teaching resources to enrich the teaching content and methods by means of digital intelligence. Teachers should master the digital intelligence technologies such as big data analysis and artificial intelligence-assisted teaching, and enhance their ability to analyze and solve complex educational problems. In the era of information explosion, being good at screening and applying effective digital resources can greatly improve the teaching efficiency and quality[12].

Cultivate the critical thinking and research learning ability, so that teachers can flexibly use the existing knowledge to solve them innovatively in the face of new educational technology problems. Teachers are encouraged to conduct digital education research, explore various possibilities of students digital skills development, and reflect on the problems in teaching practice through research, so as to constantly improve their own digital literacy and teaching level. Regular self-evaluation and reflection, through summarizing the gains and losses in teaching, clarify their own shortcomings in digital literacy and actively improve.

To build a support system for digital literacy improvement, schools and education administrators should provide sufficient professional development opportunities and establish incentive mechanisms to encourage teachers to continue to study and further study. Through international cooperation and exchange projects, cutting-edge digital education concepts and technologies are introduced to provide teachers with the collision of multiple cultures and perspectives, and help them to comprehensively improve their digital literacy. The cultivation of teachers digital literacy is a dynamic and continuous process that runs through their career.

4.2. Cultivation of Teachers Data Analysis Skills

In the environment of digital and intellectual integration, the professional development of university teachers is closely related to the cultivation of data analysis skills. As a key element in the process of education, teachers not only need to have profound subject knowledge and teaching ability, but also need to accurately analyze complex data, so as to use it freely in teaching practice. In the modern educational environment, the generation and accumulation of massive data makes the data analysis ability become an indispensable quality for teachers. In order to maintain the high quality of education in this dynamic context, teachers must master the whole process of data acquisition, analysis, interpretation, and application. Through the data analysis, the teachers can deeply understand the students learning situation, identify the problems existing in the teaching, and then optimize the teaching strategies. The improvement of data analysis skills depends not only on the efforts of individual teachers, but also on the systematic training and continuous support provided by schools. Higher education institutions should create opportunities for teachers to participate in various data analysis workshops, special lectures and practical courses, and improve their data literacy with the help of expert guidance and peer communication. In this process, teachers need to constantly update their technical means, adopt advanced data analysis tools, and enhance their sensitivity and adaptability to cutting-edge technologies such as big data and artificial intelligence. In addition, through interdisciplinary cooperation, teachers can broaden their horizons, learn from data analysis methods in other fields, and enrich their analytical skills. The cultivation of teachers data analysis skills is not only the demand of professional development, but also an important driving force of educational innovation. Only when teachers have a strong data analysis ability, can they truly realize the personalization and precision of the education process, so that every student can get the most suitable guidance and support in the learning journey. In the new era

of digital-intelligence integration, the improvement of teachers data analysis skills will become an important force to promote the educational reform.

5. Conclusion and Outlook

5.1. Conclusion Summary and Enlightenment

Under the background of the integration of data and intelligence, the innovation path of university curriculum presents a diversified development trend, whose core lies in redefining the teaching mode and its practical effect. In this teaching change, the introduction of digital intelligence technology is not only a revolution of tools, but also a change of ideas, which gives birth to the profound reconstruction of teaching methods and content. Under the inspiration of technology, the space-time boundary of the traditional classroom has been broken through, and the teaching interaction of all time and space and all scenes has been realized. The teachers have changed from knowledge instructors to learning guides, and the students have also changed from passive recipients to active participants. This role transformation makes the relationship between teaching and learning sublimate from unidirectional knowledge transfer to multi-dimensional knowledge co-creation.

The innovation of teaching mode is not only reflected in the form of classroom teaching, but also lies in the richness of teaching content and the flexibility of teaching methods. The application and integration of educational technology provides teachers with a wealth of tools, and the application of these technologies not only serves the transmission of knowledge, but more importantly, promotes the cultivation of students critical thinking ability and innovation ability. In teaching, the application of technology needs to be closely consistent with the teaching objectives, and teachers need to constantly explore the organic combination between technology and teaching content, so as to achieve the optimization of teaching effect.

The change of this teaching mode puts forward a new enlightenment for the existing education system. It calls for the continuous improvement of teaching content and methods, and requires educators to always keep an open mind, and constantly reflect and adjust in the teaching process. In the future, the further development of educational technology will provide a broader space for the innovation of college courses, and also put forward higher requirements for educators. Teachers and students, technology and education, content and method, interweave into an educational blueprint full of hope and challenges.

5.2. Outlook of the Future Development Direction

Under the background of the integration of data and intelligence, the future development direction of college education is gradually moving towards the dual track of strategic planning and educational innovation. The strategic planning of college education is not only the optimal allocation of the current educational resources, but also the profound foresight of the future education ecology. In this strategic vision, the deep integration of digital intelligence technology becomes the key. Colleges and universities need to break the traditional disciplinary boundaries and build a flexible curriculum system with the driving force of interdisciplinary and cross-field cooperation. This system should cover diversified learning paths and dynamically updated knowledge modules, aiming to cultivate students innovative thinking and practical ability. The continuous promotion of educational innovation requires an all-round reform from teaching methods, curriculum design and educational management. Digital intelligence technology provides infinite possibilities for educational innovation, and new forms of courses such as intelligent learning platform, virtual reality laboratory and data-driven personalized learning path are quietly changing the face of traditional education. In this change, the role of teachers also needs to be re-examined. Teachers are no longer just the transmitters of knowledge, but the guide of the learning process and the inspiration of innovative thinking. The future development also needs to pay attention to educational equity and resource sharing, and realize the barrier-free dissemination of high-quality educational resources through digital intelligence technology, so that educational

opportunities will benefit a wider range of people. The digital transformation of education is not only the innovation of technology, but also the profound change of educational concept. Colleges and universities should strengthen international cooperation and exchanges, draw lessons from global advanced educational concepts and technologies, and promote the globalization process of educational innovation. In this process, the strategic planning of college education and the continuous promotion of educational innovation will complement each other, jointly lead the future of education, and draw a broader blueprint.

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