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Research on Teaching System Based on Digital Intelligence Technology

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Abstract: Modern digital and intelligent information technology have brought the intelligent upgrading and transformation of existing education models, promoting the transformation of teaching methods, management models, and education service supply methods. At the same time, in order to meet the teaching requirements of digital and intelligent technology, we create comprehensive, full process, and systematic undergraduate education resources from a professional perspective, and deeply integrate professional construction with the teaching, evaluation, supervision, and information technology of the "Three Comprehensives" education, forming an intelligent, integrated, and perceptual new curriculum ecosystem.

Keywords: Three Comprehensive Education; Spirit of Craftsmanship; Information Fusion ; Digital Intelligence Technology; Teaching System

1. Research Background

In 2022, the country fully implemented the digital education strategy and proposed the "3C (Connection, Content, Cooperation)" concept, aiming to promote digital education nationwide and provide support for higher education [1].

Today's society is in a digital age based on internet technology, represented by big data and artificial intelligence, with a focus on achieving digital transformation. With the arrival of the digital age, higher education is facing higher requirements. Universities must pay attention to the quality of talent cultivation and actively reform the talent cultivation mode when conducting professional education [2].

Integrating the concept of smart education into Three comprehensive education in the curriculum, achieving a deep integration of new generation information technology and Three comprehensive education in the curriculum, adapting to the increasingly growing networked survival status of educational objects, and further playing the role of smart education in precise education, is undoubtedly an important proposition that must be deeply considered in the innovative development of Three comprehensive education in the new era.

2. Research Status

Since the implementation of Three comprehensive education in the curriculum, there have been many research papers. On China National Knowledge Infrastructure (CNKI), the topic of "Three comprehensive education in the curriculum" has been searched for core journals from July 2017 to December 2022. Through word frequency analysis, it can be seen that teachers from different disciplines and majors are striving to use various methods to explore Three Comprehensive Education elements and reform teaching models. However, most of them focus on teaching the curriculum themselves, without forming a collective force of Three comprehensive education, resulting in the dilemma of "isolation" of Three comprehensive education in the curriculum. The main issues are as follows.

2.1 The Three Comprehensive Education Elements in College Classroom Teaching are Relatively Single

The curriculum of Three comprehensive education aims to combine the truth of "knowledge" with the goodness of "Three Comprehensive Education" and combine "technique" with "way". This requires teachers to integrate Three comprehensive education with professional education. However, in the practical process, the

integration of Three Comprehensive Education resources in the curriculum by teachers is not ideal [3]. The Three Comprehensive Education elements are single, and more often than not, patriotism is rigidly applied to professional classrooms in actual teaching. Some teachers often adopt a rote teaching method to impart knowledge, and less use experiential, heuristic, and situational teaching methods, resulting in a lack of communication, interaction, and feedback between teachers and students. College students generally have strong comprehension abilities, and some teachers believe that there is no need to carefully design teaching methods and tools to present teaching content. As long as they can explain and understand the course content clearly, students can understand it. This is true for professional course teaching, and the same is true for Three comprehensive education in courses. More often than not, it is simply based on teaching requirements, without any mention of design or planning, integration or vividness, let alone stimulating students' interest in learning and promoting their autonomy and personalization in learning.

2.2 The Design of Three Comprehensive Education Courses Lacks Systematicity and Comprehensiveness

Course Three comprehensive education is a complex system engineering, and its quality not only depends on internal constituent elements, but also closely related to external factors. Currently, traditional teaching in universities emphasizes "teaching" within the classroom, emphasizes the exploration of teaching methods, lacks flexibility in teaching design, and lacks systematicity and comprehensiveness. In the long run, the high-quality courses that have been built are only partial achievements of teaching development. As a prerequisite for curriculum Three comprehensive education, the design of curriculum Three comprehensive education should consider teachers, courses, majors, schools, and society as a whole with a developmental perspective. It should not only focus on the coupling and coordination of internal elements of curriculum Three comprehensive education, but also fully understand the application and development of digital technology. It is committed to breaking the limitations of industry, region, time, and population, and preparing for the deep integration of digital technology and teaching. Only the teaching outcomes generated by such teaching designs are sustainable [4].

2.3 Insufficient Digitalization of Evaluation Mechanisms

A comprehensive evaluation mechanism is needed in the promotion and operation of Three comprehensive education in the curriculum. At present, there is still a lack of evaluation mechanism for curriculum Three comprehensive education. Course Three comprehensive education is a part of curriculum teaching. Traditional teaching evaluation is conducted from three levels: managers, teachers, and students. It mainly focuses on quantitative evaluation of static teaching information, and the collected information is relatively single and extensive, with a strong dependence on the evaluator themselves. In recent years, with the continuous integration of digital technology and university teaching, teaching modes have changed, and smart classrooms, data platforms, and virtual reality technologies have begun to be applied in teaching. Traditional teaching evaluation can no longer adapt to the new development situation. Therefore, teaching evaluation needs to make innovations in educational data mining analysis and teaching management digitization [5].

This project adopts the teaching philosophy of "integrating creativity and collaborative education" and utilizes digital information technology to comprehensively improve the Three Comprehensive Education effects of professional courses. Through the joint formation of Three Comprehensive Education teachers and professional teachers, a teaching team is formed to integrate Three comprehensive education with innovation and entrepreneurship education, achieving multidimensional integration of professional teaching, innovation and entrepreneurship, and the Three Comprehensive Education teaching system. By building a comprehensive

information platform for digital intelligence, we can enrich teaching resources, build precise feedback-based learning, and achieve intelligent teaching management such as teaching management, evaluation, and supervision.

3. Main Research Content

3.1 Overall Layout, Building a Teaching System from the Perspective of Intelligent Three Comprehensive Education

Professional construction, while meeting national quality standards and serving the basic requirements of regional economy, aims to achieve a "silent" approach to curriculum Three comprehensive education. The application of modern digital information technology is both a boost and a challenge. Fully utilize the advantages of digitalization, upgrade and transform the existing education model with intelligence, promote the transformation of teaching methods, management models, and education service supply methods, organically connect various resources, build a smart Three Comprehensive Education system that integrates innovation and interactive sharing, integrate online and offline teaching, and build a multidimensional education model. From the aspects of strategic planning, institutional construction, implementation technology, and institutional construction, top-level design is carried out to create a broader learning space for students and open up personalized learning paths suitable for them. Promote the synergistic effect between course professional learning and Three comprehensive education, so that they can go hand in hand, enhance students' awareness and moral level, and enhance their ability to cope with challenges and problems [6]. By utilizing modern information technology and intelligent means such as network resources, we aim to create a high-quality environment for interactive communication, information perception, security warning, and online teaching, comprehensively enhance the digitalization, intelligence, and informatization level of Three comprehensive education management, and achieve an intelligent education ecosystem.

3.2 Reform the Main Body of Education and Build a "Dual Integration and Multi Circulation" Curriculum Three Comprehensive Education Mechanism

Professional teachers and Three Comprehensive Education course teachers with different educational focuses should learn from each other's strengths and weaknesses, coordinate their educational advantages, and build a dual integration and multi cycle mechanism. Three comprehensive education is more rigorous, and professional teachers explore Three Comprehensive Education elements. Three Comprehensive Education teachers provide theoretical guidance to professional teachers, promoting the sublimation and deepening of their Three Comprehensive Education connotations; Through the practical application of professional knowledge and skills, Three Comprehensive Education theory has been deepened, providing strong knowledge and intellectual support. The collaboration between the two forms a strong educational force, achieving an organic unity of knowledge transmission and value leadership [7-8].

3.3 Based on OBE, Digital Information Technology, and Constructivist Scaffolding, Reconstruct Teaching Design

Taking students as the center, starting from the teaching objectives of each course, carrying out teaching reforms around teaching content, teaching methods, and evaluation, exploring the values of knowledge connotation, constructing teaching scenarios based on constructivist scaffolding method, using information technologies such as AR, VR, 3D audio-visual, three-dimensional scenes, and simulation to reproduce historical events, red literature, great achievements, and various professional resources, and utilizing big data Artificial intelligence and other digital information technologies accurately analyze the learning situation, providing support for the effectiveness of classroom teaching. At the same time, they comprehensively analyze learning resources, processes, and effects, helping teachers quickly diagnose problems that arise in the teaching process. They can provide scientific decision-making basis for data resource processing and analysis, and improve the scientific, rational, and efficient allocation of teaching resources. From single point to multiple points, finally forming lines

and surfaces [9], integrating with professional theory and knowledge, and improving students' professional and moral qualities.

3.4 Based on the Requirements of the Digital Age, Reconstruct the Curriculum System

Based on the new demands of cross integration in the digital age, we have re planned our teaching objectives, striving to highlight the advanced, innovative, and challenging nature of the curriculum. On the basis of optimizing the core of traditional professional knowledge, exploring the internal connections between digital and intelligent technologies such as big data and blockchain, forming a curriculum reconstruction that integrates with information science, exploring the Three comprehensive education resources contained in professional courses, forming a cross-border integration of Three Comprehensive Education curriculum reconstruction, based on existing on campus laboratories and off campus internship and practice bases, to build and integrate professional laboratories, training and internship bases Innovation and entrepreneurship bases, innovation spaces, etc., will be restructured into a shared experimental training platform, with the mentor team project as the main line, to build an industry university research management platform[10], and cultivate high-quality and high-level scientific and technological innovation talents from multiple perspectives.

4. Research Conclusion

This project adapts to the new requirements of the innovation and development of Three comprehensive education in digital information technology courses. From the perspective of the overall profession, it adheres to the educational concept of "integrating creativity and collaborative education", creates a comprehensive, whole process, and systematic undergraduate professional Three comprehensive education resource, deeply integrates professional construction with the teaching, evaluation, supervision, and information technology of Three comprehensive education, thus forming an intelligent, integrated A new type of curriculum Three Comprehensive Education ecological system characterized by perception.

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