Empowering with Digital Intelligence: Construction and Practice of New Business Intelligence Classroom

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ABSTRACT

In the era of digital economy, the cultivation of digital new business talents must be combined with the actual needs of society, keep pace with the times in teaching content, innovate flexibly in teaching modes, and adopt diverse teaching methods. The construction of a new business intelligent classroom that combines various digital technologies with emerging business concepts is imperative, in order to transform traditional knowledge dissemination classrooms into intelligent talent cultivation classrooms. This study starts from a systematic review of the theoretical basis for the combination of digital intelligence technology and business education. It explores how digital intelligence technology drives the transformation of new business smart classrooms from three aspects: teaching mode innovation, curriculum content reconstruction, and teaching evaluation innovation. It analyzes the challenges encountered in the construction process of new business smart classrooms and proposes feasible and targeted practical strategies, which have good reference significance for promoting the reform of new business education.

Keywords: *Smart classroom, New Business Administration, individualized education.*

1. INTRODUCTION

With the continuous innovation and widespread application of digital technologies such as 5G, big data, artificial intelligence, and cloud computing, business models are undergoing profound changes, shifting from traditional offline transactions to digital and intelligent models that integrate online and offline, giving rise to emerging formats such as new retail, cross-border e-commerce, and intelligent manufacturing. The transformation of business models has put forward higher requirements for the abilities and qualities of business talents. Traditional business talents only focus on mastering basic knowledge of economics and management, but now in order to become competitive talents, they must not only firmly grasp professional business knowledge, but also master the relevant skills of digital information technology, possess data thinking, innovation ability, and overall ability to solve complex problems.

In this context, as an incubator for future business talents, business education is facing a huge impact and opportunity that combines history and reality. The traditional business education teaching model only focuses on the learning and imparting of basic knowledge, with few courses involving mathematical and intellectual technology, which results in students having insufficient understanding of new technologies and unable to apply them effectively; The excessive reliance on teacher lectures in the classroom results in passive absorption of knowledge by students, and there are certain obstacles in communication, lacking interaction and innovation in the classroom; The setting of teaching objectives does not meet the actual needs of social development and does not meet the requirements of today's society for business professionals. To cultivate business talents that meet the needs of the new era, it is necessary to build a new business smart classroom. In this regard, the powerful data processing ability, intelligent analysis ability, and simple interaction advantages of digital intelligence technology can be used to assist in the construction of a new business smart classroom, thereby promoting the teaching reform of the new business smart classroom and injecting more vitality into the development of business education.

2. THEORETICAL FOUNDATIONS AND RELATED CONCEPTS

2.1 Characteristics and Development Needs of New Business

New business education, as an emerging educational concept and model that adapts to the development of the digital economy era, has distinct characteristics.

- Interdisciplinary nature: It breaks down the boundaries between traditional business majors and the barriers between business and other disciplines, forming a cross disciplinary integration of various disciplines. Effectively combining the basic business courses in economics and management with science and engineering courses such as computer science, mathematics, and statistics in the process of cultivating new business talents, and integrating the internal logical connections between different courses, students have a broader knowledge base and stronger comprehensive qualities, making them more adept at adapting to the complex and ever-changing business environment of the digital economy era.
- Integrating new technologies: In the era of digital intelligence, new technologies such as big data, artificial intelligence, cloud computing, the Internet of Things, and blockchain have profoundly changed our business operation mode and management methods. New business must keep pace with the times and apply these new technologies to business education and talent cultivation. For example, in the current new business education, courses on big data analysis have been introduced. Students can learn knowledge and skills in data collection, data organization, data analysis, and data visualization. They can also use big data analysis methods to conduct research and analysis on data from some enterprises and industries, and provide valuable research results for enterprise decision-makers; At the same time, the learning of artificial intelligence related knowledge has become an important part of the current process of new business education. Practical applications such as using artificial intelligence for intelligent customer service, intelligent supply chain, and intelligent investment consulting can cultivate business talents with a certain foundation in artificial intelligence.

With the arrival of the digital age, there is an urgent need for the development of new business models. In terms of industry development, the rapid advancement of the digital economy has given rise to many new formats and models such as e-commerce, sharing economy, intelligent manufacturing, and digital finance. This has led to an increasingly diverse and complex demand for talent in emerging models, which not only require solid business knowledge but also flexible use of digital technology and innovative thinking to solve problems arising from business activities. Therefore, in the context of the industry, it is necessary to have both the operational and management capabilities of e-commerce and the ability to apply digital technology to meet the demands of the industry.

2.2 Characteristics and Elements of Smart Classroom

Smart classroom is a new type of intelligent, interactive, and personalized classroom teaching environment and teaching mode constructed by fully utilizing digital technology under the guidance of modern educational concepts. It aims to cultivate students' innovative thinking, practical ability, and comprehensive literacy. By analyzing and mining the big data generated in the teaching process, it achieves scientific teaching decision-making, precise teaching process, and diversified teaching evaluation.

2.2.1 Characteristics of Smart Classroom

Smart classrooms have the characteristics of intelligence, and the application of artificial intelligence, machine learning, and other means can achieve functions such as intelligent teaching assistance, intelligent evaluation feedback, and intelligent personalized learning recommendations. The use of intelligent teaching assistance systems can automatically generate relevant teaching materials, teaching plans, and other teaching resources according to the teaching needs of teachers, reducing the pressure of teacher preparation; The intelligent evaluation feedback system can dynamically evaluate various learning behaviors of students and provide targeted feedback to teachers at any time, so that teachers can better modify their teaching based on students' situations; The intelligent personalized learning recommendation system accurately recommends personalized learning resources and paths for students based on their learning situation and interests, meeting their personalized learning needs.

Strong interactivity is also one of the characteristics of smart classrooms. With the help of online interactive platforms, intelligent teaching tools, etc., it breaks the limitations of traditional classroom teaching in terms of time and space, and allows for comprehensive and multi-level interaction and communication between teachers, students, and students. During the classroom teaching process, students are encouraged to actively participate in the teaching process through online interactive platforms such as posting questions, organizing discussions, and conducting group cooperative learning, which stimulates their curiosity and proactive learning awareness; Students can ask questions and express their opinions to teachers and classmates anytime and anywhere, which can stimulate their subjective initiative and experience the joy of the learning process.

2.2.2 Components of Smart Classroom

Smart classroom is composed of many elements. For technology, big data, artificial intelligence, cloud computing, Internet of Things and other digital technologies are important supports for smart classroom. Big data technology is responsible for collecting, storing and analyzing various massive data generated by students' learning process for teaching decision-making. Artificial intelligence technology can make the entire teaching process intelligent, such as intelligent tutoring, intelligent evaluation, etc. Cloud computing technology provides powerful computing and storage capabilities, as well as powerful teaching resource scheduling and transmission sharing capabilities for smart classroom. Internet of Things technology realizes the interconnection and intercommunication of various teaching devices, creating a smart teaching environment.

Teaching resources are also one of the key elements of a smart classroom. Rich, diverse, and high-quality teaching resources are the foundation for the smooth implementation of smart classroom teaching activities. The teaching resources of smart classrooms not only include traditional teaching materials such as textbooks, courseware, and videos, but also include digital and intelligent teaching resources developed based on digital intelligence technology, including virtual simulation experiments, online interactive courses, intelligent learning software, etc. Compared with traditional teaching resources, these resources are more interactive, situational, and personalized, which is more conducive to cultivating students' learning interests, improving their enthusiasm, and achieving corresponding teaching goals better.

3. THE TRANSFORMATION OF SMART CLASSROOMS DRIVEN BY DIGITAL TECHNOLOGY IN NEW BUSINESS EDUCATION

3.1 Innovation of Teaching Mode

In the process of deeply integrating digital technology with education and teaching, smart classrooms bring new concepts, methods, and models to new business education, including online and offline integration and personalized learning, thus promoting the innovative development of new business teaching models.

3.1.1 Integration of Online and Offline Operations

The combination of online and offline teaching mode breaks through the constraints of time and space in traditional teaching, allowing students' diverse knowledge needs to be released, and also making offline teaching no longer just theoretical explanations and indoctrination, but fully utilizing the advantages of diversified online teaching resources. Online resource sharing breaks the limitations of time and space, allowing students to learn a wider range of content in the same amount of time. For online teaching, students can watch relevant teaching videos or electronic textbooks, or participate in online quizzes and other activities through online teaching platforms at any place and any time. They can also watch and learn repeatedly, arrange their learning progress according to their own situation, and study freely.

The offline teaching process enables real-time face-to-face communication and interaction between teachers and students, as well as among classmates. Through group discussions, case analysis, role-playing, and other forms, students' enthusiasm and initiative are mobilized to achieve ideological collision and knowledge sharing among students. For example, in the course of Management Economics, students can be assigned tasks to understand the business process of enterprises, visit the market, collect data, and understand consumer needs and competitors' situations. Then, they can return to the classroom for reporting and communication. Finally, the

teacher can summarize and provide improvement suggestions, deepen students' understanding of knowledge through discussion and clarification, and help them learn to integrate theoretical knowledge with production and life practice, enhancing their practical and problem-solving abilities.

3.1.2 Personalized Education

Big data, artificial intelligence and other technologies can integrate students' learning processes, learning data, and learning outcomes together, using interdisciplinary fusion methods for multi-dimensional deep mining and fine sorting, analyzing and mastering each student's different characteristics, hobbies, knowledge mastery level, learning progress and other situations, providing precise personalized teaching for each student, accurately pushing suitable learning content for each student's current needs, and guiding each student's specific learning path and methods. For example, by using smart classrooms and smart learning spaces to collect learning information data generated by students during the learning process, such as learning time, learning frequency, homework completion status, exam scores, online discussions, etc., personalized student portraits can be drawn based on student characteristics to judge students' learning habits and styles, identify weak points and learning difficulties in students' knowledge, and carry out personalized teaching based on data analysis results. For example, feedback reports and knowledge error books can be automatically generated from students' homework and exams, and relevant video explanations, supporting exercises, coaching materials, etc. with high error rates can be pushed for students to accurately identify and fill in gaps.

3.2 Course Content Refactoring

3.2.1 Incorporating Knowledge of Digital Intelligence Technology

The integration of traditional business courses and digital technology to form a new cross disciplinary curriculum is a key part of the transformation of the new business curriculum system, preparing students for conducting business activities in the digital economy era in the future. Taking marketing as an example, traditional marketing courses mainly focus on market research, product positioning, brand strategy, promotional strategies, and other related topics. In the era of digital intelligence, traditional marketing courses have gradually transitioned to courses such as "Digital Marketing," "Online Marketing," and "Social Media Marketing." These courses combine digital technologies such as big data analysis, artificial intelligence, and social media marketing with marketing theories. Through big data and artificial intelligence algorithms, they extract the characteristics and needs of target consumer groups, achieve market segmentation and target customer positioning, and select appropriate marketing methods for different consumer types to formulate marketing strategies; How to use social media for marketing communication, analyze the differences and purchasing preferences of users on different social media platforms, and conduct targeted marketing.

3.2.2 Case Teaching and Practice Project Update

In order to enable students to better apply digital technology to business practice, the new business course actively introduces practical cases and projects from enterprises, enabling students to enhance their ability to apply digital technology and comprehensive literacy in solving practical business problems. Taking the course of "E-commerce" as an example, in class, business personnel from well-known e-commerce companies can be invited to introduce the actual operation situation and problems encountered by the company to students. Students learn how to collect data such as user volume, conversion rate, and unit price. Through big data analysis and data mining algorithms, they find the crux of the problem and use artificial intelligence algorithms to optimize the product recommendation system, recommending products that are closer to the needs of customer groups to different customers; Optimize the shopping process, reduce operational steps, and improve user experience. By analyzing and solving the problems in this case, students not only understood the relevant theoretical knowledge of e-commerce operation and management, but also learned how to apply digital technology to solve problems, improving their hands-on ability.

3.3 Innovation in Teaching Evaluation

3.3.1 Diversified Evaluation Indicators

It is necessary to establish a diversified evaluation index system in the New Business Intelligence Classroom to systematically and

objectively evaluate students' mastery of knowledge and their own development status. Traditional business course teaching evaluation often focuses more on examining students' mastery of theoretical knowledge, using final grades to test students' learning outcomes. The evaluation method is too narrow and cannot reflect whether students have the comprehensive strength and quality they should have to adapt to the digital intelligence era, let alone make a comprehensive and scientific evaluation of students. Instead, using a business smart classroom evaluation system to assess students' knowledge mastery, practical ability, and innovative thinking can better judge their learning situation.

Knowledge mastery remains an important foundation for teaching evaluation. In the newly opened courses of business, students studying this subject need to master a certain amount of business knowledge. For example, it is necessary to be familiar with the relevant basic concepts, principles, and methods of economics, management, marketing, financial management, and other subjects. Schools can test students' mastery of this ability through classroom quizzes, homework assignments, exams, and other methods.

Practical ability evaluation is one of the key evaluation methods for the new business intelligent classroom. Students' practical abilities can be evaluated through three parts: practical projects, laboratory courses, and internships. A practical project can be undertaken by students as a team to undertake the tasks of a business project and carry out various workflows of the project, such as market research and analysis, enterprise digital transformation plans, e-commerce platform operations, etc. When evaluating a project, it is not only important to look at the final results obtained, but also to understand whether students have good teamwork skills during the project completion process, whether they can communicate effectively with other team members in a timely manner at each stage, whether they can propose scientific solutions and use the latest digital information technology, etc.

Innovative thinking is a necessary quality for new business talents, and evaluating students' innovative thinking is also an important component of a diversified evaluation index system. Utilizing innovative projects, business creativity competitions, writing academic papers, and other methods can promote the development of students' innovative thinking and make reasonable evaluations of it.

In addition to the three main evaluation indicators mentioned above, team collaboration ability, communication ability, learning attitude, etc. can also be auxiliary indicators of the evaluation system.

3.3.2 Real Time Feedback and Data Analysis

The use of digital technology has brought new breakthroughs in teaching evaluation in the smart classroom of new business education. By utilizing digital technology, real-time feedback and in-depth analysis of data evaluation can be achieved, providing the most scientific and accurate basis for teaching improvement. Traditional teaching evaluation is a teaching evaluation work completed by correcting students' homework, grading students' test papers, and other tasks after the completion of teaching activities. This has a significant lag in evaluating learning effectiveness, which is not conducive to students discovering and correcting their problems in a timely manner. However, in the new business intelligent classroom, it is completely different. After using learning management systems, online teaching platforms, and other tools, relevant data on students' learning can be obtained at any time, including students' learning time, learning progress, problem-solving situation, speaking frequency, and speaking quality, etc. The use of big data functions can analyze and summarize learning process data, automatically generate students' personal learning reports, help teachers understand students' specific learning status at any time, discover problems and difficulties encountered by students, and provide timely feedback and guidance.

4. CHALLENGES FACED BY THE CONSTRUCTION OF NEW BUSINESS SMART CLASSROOM

4.1 Technical Application Barriers

The application of digital intelligence technology in the new business intelligent classroom has brought many conveniences, but it also faces a series of technical application obstacles. The stability of technology is the primary issue, and smart classrooms rely on the collaborative operation of multiple digital technologies. Online teaching platforms, intelligent teaching devices, and learning management systems may encounter the

following problems in collaborative assignments, such as server failures, network lag, and software crashes, which can cause certain obstacles to classroom teaching. In live teaching, due to network reasons, there are issues with video lag and intermittent sound in the live room; Intelligent teaching devices may also malfunction due to hardware issues, such as unresponsive large screens for intelligent interaction, and recording failures of intelligent recording devices.

4.2 Insufficient Teaching Staff Capacity

The insufficient teaching ability is an important factor restricting the construction of new business intelligent classrooms. Some teachers lack the necessary technical foundation in the application of digital intelligence technology. Under the special training on digital intelligence technology carried out in schools, there are still some teachers who have little understanding of new technologies. Some teachers do not know how to use big data analysis tools or artificial intelligence teaching assistance software. When using data analysis tools, only the simplest data statistics can be done (such as calculating average scores and passing rates), and difficult data analysis methods will not be used to dig deep into the information behind the data, because reasonable judgments cannot be made from the results of data analysis to guide the next step of teaching design work, and it is also impossible to achieve personalized teaching. Some teachers do not know how to use intelligent homework correction software for homework correction. When using artificial intelligence teaching assistance software, unfamiliarity and improper use can lead to inaccurate results and affect teaching effectiveness.

4.3 Difficulties in Integrating Teaching Resources

The widespread and scattered teaching resources, as well as the difficulty in integration, are a prominent problem faced in the construction of the new business intelligent classroom. In the current educational environment, teaching resources are scattered across different platforms and systems, lacking effective integration and management. The teaching resources within the school may be stored on different servers or storage devices, and teachers need to switch between multiple platforms and systems when searching and using resources, which consumes a lot of time and energy. Although there are abundant open source teaching resources on the internet, their quality varies greatly and lacks unified classification and labeling, making it difficult for teachers to quickly find high-quality resources that meet their teaching needs.

There are also difficulties in integrating and sharing teaching resources. Firstly, different teaching resources adopt different technical standards and coding methods due to their forms such as documents, videos, audios, or animations, resulting in a large workload and high difficulty in integration; To integrate teaching resources of different formats into a unified teaching resource platform, format conversion and compatibility processing are required, which is a complex process and prone to errors. Secondly, due to issues such as copyright of teaching resources, schools and teachers want to achieve the co construction and sharing of resources, but the process is extremely complicated and even requires payment of corresponding fees, which is also an obstacle to the co construction and sharing of teaching resources. Thirdly, there is a lack of effective resource sharing mechanisms. There is a lack of communication and cooperation between schools and teachers, making it difficult to establish a comprehensive platform for sharing teaching resources and a collaborative mechanism. Many high-quality resources are not fully utilized.

5. STRATEGIES FOR BUILDING NEW BUSINESS SMART CLASSROOMS

5.1 Building a Smart Teaching Environment

Improving hardware is a prerequisite for building a smart teaching environment, so schools should increase their efforts to invest funds in the improvement of teaching hardware. From the perspective of smart classroom construction, equipping high-definition intelligent interactive screens can present various teaching resources and enable multi touch, which can be used for annotation and circle drawing, facilitating communication and exchange between teachers and students; The use of intelligent recording devices will automatically record the content of class, and after class, teachers can use the videos recorded by this device to provide students with extracurricular Q&A and evaluation work; Intelligent teaching terminals enable students to learn anytime and anywhere.

A stable network environment is crucial, therefore it is necessary to create a high-performance campus network platform that can achieve full coverage of the entire campus and provide excellent network services for online teaching and data downloading activities in schools; We also need to equip the classroom with hardware equipment and provide necessary teaching devices such as high-performance computers, projectors, and speakers.

Creating a digital teaching platform that can replace offline homework assignments with features such as online homework assignments, online grading, and online evaluation, saving a lot of preparation and grading time; The intelligent management of online exams includes functions such as automatic paper generation, online answering, and automatic grading. Big data can also be used to assess students and promote their progress. Implement online teaching communication functions, such as online discussion forums or the use of instant messaging software by teachers and students to conduct online teaching activities; Finally, big data analysis technology is used to collect and organize students' learning situations, forming detailed learning reports to provide to teachers, helping them to timely grasp students' learning status, understand students' learning situations, and then teach students according to their aptitude.

5.2 Enhancing Teachers' Digital Literacy

Conducting systematic training is an important way to enhance teachers' digital literacy. Schools should develop comprehensive training plans and regularly organize teachers to participate in digital technology application training. The training covers the basic knowledge and application skills of digital intelligence technologies such as big data analysis, artificial intelligence, cloud computing, and the Internet of Things. Through artificial intelligence training, teachers can master the use of intelligent teaching aids, such as intelligent homework correction systems, intelligent Q&A systems, etc., to improve teaching efficiency. Innovative training on teaching methods should also be carried out to enable teachers to learn advanced teaching methods such as Problem Based Learning, Project Based Learning, and Cooperative Learning, and to learn how to combine these methods with digital technology and apply them to the teaching of new business smart classrooms. The training method can adopt a combination of online and offline modes, providing rich training courses and learning resources online to facilitate teachers' self-learning; Organize offline centralized training, expert lectures, practical operations and other activities to enhance the effectiveness of training.

There is a must to establish a teacher incentive mechanism to motivate teachers to enhance their digital literacy, and incorporate the ability of teachers to apply digital technology and innovative teaching achievements into the performance evaluation and professional title evaluation scope of school teachers; Teachers who excel in the application of digital technology and teaching innovation shall be commended and rewarded (with teaching innovation awards, scientific research achievement awards, etc.), and teachers who demonstrate outstanding performance in the application of digital technology and teaching innovation shall be given extra points in their performance evaluation, and priority shall be given to recommending them for professional title evaluation; In addition, the Teaching Innovation Team Award can also be implemented to encourage teachers to form teaching innovation teams, carry out teaching reforms and innovative practices, and thus more effectively carry out the construction of new business intelligent classrooms.

5.3 Optimizing the Integration Mechanism of Teaching Resources

The establishment of a resource sharing platform plays an important role in the integration of teaching resources. The school can integrate various resources inside and outside the school through the establishment of a unified teaching resource sharing platform, including resources created by teachers in the school, commercial resources purchased, Internet open source resources, etc. At the same time, the platform has the functions of classifying, searching, and recommending teaching resources, so that teachers can quickly find the teaching resources they need; By tagging teaching resources according to teaching content, knowledge points, resource types, etc., teachers can easily and accurately retrieve them; By using big data analysis technology, the platform can provide personalized recommendations to teachers based on their previous usage habits or problems encountered during teaching. In addition, support teachers to upload their excellent teaching resources to the platform and share them with other teachers; At the same time, in order to broaden the channels of

resource sources and increase the types of resources, schools can cooperate with external schools or other educational institutions to achieve the co construction and sharing of teaching resources.

Promoting the integration of disciplines is an important direction for the integration of new business teaching resources. In the process of integrating teaching resources, disciplinary barriers should be broken down, and the integration of teaching resources from different disciplines should be promoted. Interdisciplinary courses that meet the needs of social development should be actively offered, such as "Business Data Analysis", "Brand and Marketing Management in the Mobile Commerce Era", "Human Resource Management in Digital Enterprises", "Financial Management and Application in the Digital Economy Era", "Network Advertising and New Media Communication", etc. Business knowledge should be combined with digital teaching content, and teaching resources should be drawn from various disciplines such as economics, management, computer science, and statistics. Interdisciplinary teaching teams should be formed to complete the resource development of each course, develop and integrate teaching resources for various courses, write interdisciplinary textbooks and teaching cases, and provide students with more opportunities. Through the integration of disciplines, students can not only acquire basic business knowledge, but also cultivate their interdisciplinary thinking and comprehensive qualities.

6. CONCLUSION

This study focuses on the in-depth exploration of the construction of new business smart classrooms based on digital intelligence technology, clarifies the core driving role of digital intelligence technology in the construction of new business smart classrooms, deeply analyzes the internal mechanism of digital intelligence technology driving the transformation of new business smart classrooms, reveals its key role and influence path in teaching mode innovation, course content reconstruction, teaching evaluation innovation, etc., and provides a solid theoretical basis for the construction of new business smart classrooms.

In the construction process of the new business intelligent classroom, there are also many challenges, including technical application barriers, insufficient teacher capacity, and difficulties in integrating and sharing teaching resources. A series of practical and feasible response strategies have been proposed to address these challenges. In terms of building a smart teaching environment, improve hardware facilities and establish a digital teaching platform, and carry out systematic training and establish a teacher incentive mechanism to enhance teachers' digital literacy; In terms of optimizing the integration mechanism of teaching resources, it is necessary to establish a resource sharing platform to promote subject integration.

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