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Research on the Issues and Strategies of Constructing Intelligent Classrooms in Higher Education

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Abstract

Driven by the robust wave of informatization, emerging industries based on information technology continue to deepen their development, reshaping human society and leading a historic leap from traditional industrial society to information society, and further towards an intelligent society. In this transformative process, information technology serves as a key driving force, profoundly impacting the education sector, particularly accelerating the pace of educational reform and promoting continuous innovation and upgrading of educational models. This paper focuses on higher education, deeply analyzing the construction pathways and practical values of intelligent classroom teaching models. Specifically, we explore strategies for deeply integrating Internet technology with traditional classroom teaching, aiming to create a highly intelligent, personalized, and interactive teaching environment in higher education—intelligent classrooms.

Keywords: Intelligent classrooms; Strategy research

I. Issues in Higher Education Intelligent Classrooms

Lagging Localized Curriculum Development in Higher Education, Lack of Clear Constructive Awareness In higher education, the core task is to continuously cultivate and enhance students' key abilities and core competencies, a goal that permeates the development of localized curricula in universities. For years, many universities have actively responded by investing significant resources

into localized curriculum development to promote comprehensive student development. Meanwhile, under the guidance of central policies, government education departments and university management have been exploring and innovating in new curriculum and textbook development. Existing localized textbooks often fail to be directly applied in intelligent classroom environments, neither adapting to traditional teaching models nor fully leveraging the teaching advantages of intelligent classrooms. One root cause of this dilemma is that some localized curriculum developers, after completing textbook writing, neglect the evaluation and assessment of their practical application, especially regarding their adaptability in intelligent classroom teaching models.

Limited Development of Intelligent Classroom Teaching Platforms With the rapid advancement of networks and information technology, informatization and intelligent teaching methods have gradually taken a place in higher education; however, their comprehensive popularization and application remain insufficient. Most universities still primarily rely on traditional multimedia teaching materials, a singular mode that has persisted for a long time, potentially leading to student learning fatigue and affecting their enthusiasm for inquiry and innovation. Exploration and practice in cutting-edge teaching fields like online and mobile classrooms remain relatively limited in domestic universities. Specifically, on one hand, while multimedia teaching materials are widely used, their excessive use may lead to "aesthetic fatigue," limiting student engagement and creativity. On the other hand, progress in establishing self-built online classrooms is slow; even for the few universities attempting this, the frequency of online classroom usage is generally lower than that of multimedia materials.

Monotonous Teaching Content in Higher Education Driven by intelligent classrooms, the trend of diversification in higher education teaching content has become increasingly evident. In the past, elective courses and physical education courses were often on the fringes of the university curriculum system; now, with the popularity of intelligent classrooms, these courses have gained more attention and have become complementary to core teaching components, showcasing the extensive expansion of educational content. This change not only enriches the curriculum structure but also reflects teachers' effective use of modern teaching methods such as multimedia, enhancing the foundational support for teaching. However, despite the overall positive trend, some teachers still exhibit monotony in their teaching practices. These teachers have not completely freed themselves from traditional teaching mindsets, relying excessively on preset course designs and presentations, lacking in stimulating student interest, exploring depth of thought, and promoting interactive communication. Students generally report that this teaching method fails to align with the interactive and innovative teaching environment advocated by intelligent classrooms, impacting their learning experience and outcomes.

II. Strategies for Optimizing the Construction of Intelligent Classrooms in Higher Education

Maximize the Leading Role of Model Intelligent Classrooms in Universities Currently, the teaching effectiveness of classrooms in Chinese universities is unsatisfactory, attributed to two main aspects. On one hand, long-term influences of traditional classroom teaching models have resulted in insufficient student motivation for autonomous learning, while teachers face challenges in efficiently achieving teaching tasks, particularly in environments dominated by traditional teaching methods, where weaker students are more likely to lose interest in learning. On the other hand, some teachers overly focus on knowledge transmission and discipline maintenance, inadvertently diminishing teaching efficiency. To improve this situation, universities adopt repeated pilot programs and professional testing strategies when advancing the construction of intelligent classrooms. By selecting specific majors for the practical implementation of intelligent classroom teaching models, the aim is to expose and rectify issues that arise during the construction process. Subsequently, model intelligent classrooms that emerge from these pilots, characterized by accurately addressing the needs of teachers and students and continuously optimizing the teaching experience, become benchmarks for intelligent classroom construction in universities. The public display of model intelligent classrooms not only provides valuable successful experiences for other intelligent classrooms but also encourages universities to reflect deeply on their shortcomings and actively seek improvements. This process of learning and reflection greatly promotes overall progress and enhancement in local universities regarding the construction of intelligent classrooms.

Foster Collaboration Among Platforms to Promote Course Sharing In the journey of constructing intelligent classrooms, universities focus on creating intelligent communication and teaching sharing platforms, aiming to fundamentally overturn traditional teaching models by building dedicated, efficient teaching spaces. Given that each teacher's teaching style and thought processes are unique, providing students with diverse teaching experiences is especially important. Effective collaboration among intelligent classroom platforms not only promotes extensive sharing of course resources but also accelerates free collisions of teaching ideas and in-depth exchanges. This cross-boundary teaching interaction resembles a feast of ideas that ultimately benefits students, stimulating their diverse problem-solving abilities in complex situations, broadening their horizons, and deepening their thinking.

Construct a Resource Integration System for Practical Training Courses Based on Exploratory Needs While emphasizing the importance of theoretical learning, the demand for practical exploration cannot be overlooked. Some universities have successfully established teaching platforms that integrate intelligent systems; however, they have not significantly improved students'

learning efficiency. The reason lies in the platforms' tendency to focus on the convenient integration of theoretical knowledge while neglecting the inclusion of practical elements. In other words, while students can easily access theoretical knowledge, they face a shortage of practical exploratory resources when attempting to apply what they have learned. This lack severely restricts students' deep understanding and mastery of knowledge, as without practical opportunities, theoretical knowledge fails to leave a lasting impression in students' minds, making it difficult to transform into practical abilities. Just as theory cannot take root and blossom in students' minds without practical verification, practical exploration is crucial for consolidating and deepening theoretical learning. Therefore, when constructing teaching resource systems, universities must fully consider the need for practical exploration and enhance the development of practical training course resources.

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