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Innovation of University Management Model under the Background of Intelligent Campus Platform Services

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Abstract: The rapid development of information technology has made intelligent campus platforms an emerging tool in university management. As an important component of higher education, innovation in the management mode of universities has a profound impact on improving education quality, optimizing resource allocation, and promoting the comprehensive development of students. This article aims to explore the innovation of university management models based on intelligent campus platform services, and provide theoretical guidance and suggestions for managers through research and analysis of relevant theories and practices.

Keywords: smart campus; university management; management efficiency; management innovation

1. Introduction

With the rapid development and application of intelligent technologies such as artificial intelligence and big data, education is accelerating into the era of intelligence (Yang et al., 2018). Against the backdrop of rapid development of intelligent technology, intelligent campus platforms have emerged as a new type of information management tool. The intelligent campus platform achieves full business system interconnection, real-time collection of process data, real-time diagnosis and correction of classroom teaching, transparent and efficient management and operation, and convenient and comprehensive services for teachers and students (Luo et al., 2019). It is based on intelligent technologies such as artificial intelligence and big data analysis, and integrates various educational resources and information within the school to achieve digitalization and automation of educational management, improving work efficiency and quality.

2. Characteristics and Advantages of Intelligent Campus Platforms

2.1 Information integration and sharing

The intelligent campus platform integrates various management resources of the school to achieve information integration and sharing. Departments and systems can communicate and share data through intelligent campus platforms, improving work efficiency and reducing information transmission costs (Wei, 2019). The information construction of smart campus requires scientific and reasonable top-level planning. By analyzing the current situation of school management, combined with practical experience and technology development trends, a system architecture is

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formulated to guide information construction. Informatization helps to promote the realization of school strategic goals.

2.2 Data analysis and decision support

The intelligent campus platform has data analysis functions and provides targeted decision support. Through in-depth analysis of data, managers can make scientifically effective decisions.

2.3 Personalized services and dynamic adjustments

The intelligent campus platform has the ability to provide personalized services and customized support according to different needs. The platform can also be flexibly upgraded and expanded with the development and needs of the school.

2.4 Improving management efficiency and quality

The intelligent campus platform improves management efficiency and quality, reduces redundant operations and human errors through automated processes and efficient information transmission.

2.5 Promoting student development and services

Artificial intelligence can provide technical support for personalized learning for learners, promoting their acquisition of "21st century abilities" (Woolf, 2013). The intelligent campus platform provides personalized development support and services for students, including course arrangements, course selection, and personalized services.

2.6 Close integration with social environment

The comprehensive construction of an intelligent perception environment and a comprehensive information service platform can provide a certain space for communication between schools and the external environment (Di, 2018). The intelligent campus platform is closely integrated with the city, industry, and social environment to achieve the sharing and service of educational resources.

3. The Current Situation and Challenges of University Management Models

3.1 Overview of the current situation

Currently, university management is facing diversified, complex, and international challenges, and the traditional management model has been unable to adapt. There are problems such as information islands, low efficiency, resource waste and insufficient innovation. It is necessary to improve the information sharing mechanism, improve work efficiency, optimize resource allocation, and strengthen innovation training to adapt to new development needs.

3.2 Challenges and needs

At present, scientific and technological development and social changes have put forward new challenges and requirements for the university management model: the pressure of global competition has increased, and the level of international education needs to be improved; the management of large-scale student groups has become more difficult, and traditional manual management methods must be changed; high-quality teaching Resources need to be reconfigured to adapt to digital trends; data-driven decision support and management requirements are enhanced, and data analysis is used to improve the scientificity and accuracy of management decisions.

3.3 Innovation and improvement directions

In order to address the challenges brought by the current situation, the management mode of universities needs to be innovated and improved. In the era of intelligence, it is imperative to carry out comprehensive intelligent education (Zhang & Ji, 2018).

Establish an intelligent campus platform or school management information system to achieve information integration and sharing between departments and systems. The use of intelligent technology can streamline, optimize, and reconstruct unified management processes, eliminate "information silos" in management, achieve informatization and intelligence in management, and improve management efficiency and effectiveness (Qiao, 2018). At the same time, through the student information management system, centralized management and personalized support of student information can be achieved, promoting the comprehensive development and service of students. Establish a data analysis platform and decision support system, utilize various data resources, and provide scientific and accurate decision support for managers. Cultivate the innovative awareness and ability of managers and teachers, promote the application of new technologies and the improvement

of management models, encourage interdisciplinary cooperation and innovation, and enhance the competitiveness of university management.

4. Innovation of Educational Management Mode Based on Intelligent Campus Platform

With the development and application of intelligent technology, school academic management is also facing new opportunities and challenges.

4.1 Challenges in academic management

The challenges faced by traditional academic management include cumbersome academic affairs, low level of informatization, and opaque resource management. Understanding these challenges helps clarify the direction of improvement and innovation points.

4.2 Application of intelligent campus platform in academic management

The intelligent campus platform provides various functions and tools, such as student course selection management, schedule management, and score inquiry. Explore the design and implementation of these functions, and evaluate their effectiveness and impact in academic management.

4.3 Effect evaluation and problem solving

Evaluate the effectiveness of innovative educational management models based on intelligent campus platforms, identify existing problems and propose solutions. Evaluation can be conducted from multiple perspectives such as academic management efficiency, student satisfaction, and educational quality. At the same time, pay attention to potential technical issues, training challenges, and management challenges, and propose corresponding solutions.

5. Innovation of Student Management Mode Based on Intelligent Campus Platform

5.1 Innovation in student status management

In the innovation of student management models based on smart campus platforms, student status management is crucial. Through this platform, schools can centrally manage and electronically operate student enrollment information. Specifically include:

(1) Establishment of student status files: Schools can establish student status files on the platform to achieve electronic storage and management, record basic student information, registration information, etc., to facilitate school review and update.

(2) Simplified admission and transfer management processes: Schools can simplify admission and transfer processes, complete registration, submit materials, etc. online, improving efficiency and convenience.

(3) Student information change management: The platform provides an information change function. Students can update their contact information, address and other information on their own. The school can obtain the latest information in a timely manner to facilitate communication.

5.2 Innovation in student attendance management

Through the smart campus platform, the school realizes intelligent management of student attendance, including:

(1) Establish an electronic attendance system: students can sign in and out on the platform, and record their attendance, and the school will obtain the data in real time and conduct statistical analysis.

(2) Abnormal attendance reminder: The platform detects students' abnormal attendance such as absence and tardiness, and notifies students' parents to promote good attendance habits.

(3) Data analysis and decision support: The platform collects and analyzes attendance data to provide decision support for managers, adjust course arrangements and classroom management, and improve teaching and student management.

5.3 Student evaluation and tutoring innovation

The smart campus platform provides innovative functions for student evaluation and tutoring management to promote all-round development, including:

(1) Personalized student evaluation: Counselors can conduct personalized evaluation and guidance for students on the platform, provide targeted suggestions, and students can obtain learning resources and tutoring materials.

(2) Online tutoring and consultation: Provide online services. Students can interact with counselors to obtain study guidance and psychological support, and obtain online courses and learning resources.

(3) Student development tracking: Record

student information and track management results, practices, projects, etc. The school understands student development and provides personalized coaching and guidance to promote comprehensive development and career planning.

6. Resource Sharing and Collaborative Innovation Based on Intelligent Campus Platforms

6.1 Sharing and development of teaching resources

Based on the intelligent campus platform, schools can achieve the sharing and development of teaching resources, further enriching and optimizing teaching content. The following are several aspects of teaching resource sharing and development:

(1) Sharing of courseware and textbooks: Schools can upload high-quality courseware and textbooks to the intelligent campus platform for teachers and students to access and use for free. Teachers can refer to other teachers' courseware and textbooks for teaching design, and students can supplement learning materials and engage in self-directed learning.

(2) Online learning resources: Through the intelligent campus platform, schools can actively introduce online learning resources, such as MOOCs, online teaching platforms, etc. Teachers and students can participate in online courses through the platform, acquire various knowledge and skills, and broaden their learning areas.

(3) Teaching videos and experimental resources: Schools can share teaching videos and experimental resources on the intelligent campus platform, providing opportunities for remote teaching and experimentation. Students can watch teaching videos and conduct virtual experiments on the platform to enhance their practical abilities and deepen their understanding of the subject.

6.2 Academic research and innovation cooperation

(1) Sharing and cooperation of scientific research projects: Schools can promote the sharing and cooperation of scientific research projects on the intelligent campus platform. Teachers and students can share their research achievements and project experience, seek partners, and jointly research and explore cutting-edge and innovative issues in the discipline.

(2) Academic forums and communication platforms: Schools can establish academic forums and communication platforms on the intelligent campus platform, where teachers and students can publish papers and research results for academic exchange and ideological collision. This will promote academic cooperation and innovation, and drive the development of academic research.

(3) Interdisciplinary cooperation: The intelligent campus platform can connect teachers and students from different disciplinary fields, promoting interdisciplinary cooperation and innovation. Through interactive and collaborative platforms, students can acquire knowledge and ways of thinking from different disciplinary fields, stimulate interdisciplinary creativity and problem-solving abilities.

6.3 Teacher interaction and professional development

Zhang Jinbao et al. believe that intelligent education is a combination of "education based on intelligent technology" and "education that promotes intelligent development" (Zhang & Ji, 2018). Based on the intelligent campus platform, schools can achieve interaction and professional development among teachers, improve their educational level and teaching quality. The following are several aspects of teacher interaction and professional development:

(1) Teacher Community and Sharing: Schools can establish teacher communities on smart campus platforms, where teachers can share teaching experience, teaching methods, teaching resources, etc. with each other. Such interaction and sharing can promote communication and cooperation among teachers, improve teaching level and quality.

(2) Professional training and growth: The intelligent campus platform can provide online training and learning courses for teachers, facilitating their updating of professional knowledge and self-improvement. Schools can use the platform to real-time understand the training needs of teachers and provide corresponding training resources and support as needed.

(3) Teaching evaluation and feedback: Based on intelligent technology, diagnose and comprehensively evaluate the performance of

students and the teaching process of teachers, provide timely intelligent feedback, provide targeted suggestions for improving teaching objectives, content, and methods, assist teachers in adjusting teaching modes and methods (Xu & Gao, 2018), and promote the improvement and development of teachers' teaching.

7. Empirical Study on Innovation of University Management Model Based on Intelligent Campus Platform

7.1 Research content

When studying the innovation of university management models based on intelligent campus platforms, the main research contents involved include: the application of intelligent campus platforms, specific measures for innovation of university management models, and evaluation of the effectiveness of innovation of university management models.

7.2 Research methods

When conducting empirical research on the innovation of university management models based on intelligent campus platforms, possible research methods include survey questionnaires, interviews and focus group discussions, data analysis, case studies, etc. Through the comprehensive application of the above research methods, empirical research can be conducted on the innovation of university management models based on intelligent campus platforms. The research results can provide scientific basis and decision support for university administrators, promoting innovation and development of university management models.

8. Challenges and Response Strategies of Intelligent Campus Platforms

With the continuous development and application of intelligent technology, intelligent campus platforms have been widely used in the field of education. However, the development of intelligent campus platforms also faces some challenges. This chapter will explore the challenges faced by intelligent campus platforms and propose corresponding response strategies.

8.1 Privacy and security challenges

The smart campus platform involves a large amount of personal information, and protecting privacy security is a key challenge. Strengthen data protection and establish strict systems and security mechanisms such as data encryption, rights management, firewalls, etc. to ensure information security. Improve the user authorization mechanism to allow users to control information permissions and participation choices. Conduct privacy education and training to enhance privacy awareness among students and faculty and use the platform correctly to protect privacy.

8.2 Technical integration and compatibility challenges

The smooth operation of the intelligent campus platform requires integration and compatibility with multiple different technologies, systems, and applications. The following are strategies to address the challenges of technology integration and compatibility:

(1) Develop unified standards: Develop unified data exchange standards and interface specifications to ensure interconnectivity between different systems and applications.

(2) Provide Open APIs: Provide open application programming interfaces (APIs) that allow third-party developers to develop and extend applications based on the platform, increasing the flexibility and scalability of the platform.

(3) Cross system training and communication: Strengthen training and communication between different systems to ensure that faculty and staff can use different technologies and systems correctly and effectively.

8.3 Management change and role redefinition challenges

The introduction of smart campus platforms will profoundly change management models and roles, requiring corresponding management changes and redefinition of roles. Strategies for the challenge include:

(1) Developing a clear change strategy, involving training, organizational structure adjustment and process optimization, to ensure support from all parties;

(2) Strengthening faculty and staff participation and feedback to promote management change;

(3) Providing training and guidance to managers,

to help the smart campus platform run smoothly.

9. Conclusion and Outlook

9.1 Conclusion

This study explores resource sharing and collaborative innovation based on intelligent campus platforms, including teaching resources, academic research, and teacher development. Research has shown that this platform promotes the sharing and innovation of educational resources, improves the efficiency and quality of teaching resource utilization, realizes the sharing of courseware and textbooks, introduces online learning resources and provides teaching videos and experimental resources, promotes scientific research project cooperation and sharing, establishes academic forums and exchange platforms to promote interdisciplinary cooperation and innovation, establishes teacher communities to share and provide professional training for growth, and conducts teaching evaluation and feedback.

9.2 Outlook

Despite the achievements of intelligent campus platforms in the field of education, there are still potential and challenges. We should actively adapt to new situations and challenges, integrate intelligent technology into education, use artificial intelligence for innovative research, and promote the transformation of intelligent education models and ecological reconstruction.

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Conflict of Interest

The authors declare that they have no conflicts of interest to this work.

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