Exploration of information technology on the management and innovation development of higher education

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Abstract: With the development and maturity of various information technologies today, there have been significant implications for higher education management, encompassing both positive and negative aspects. It is imperative, therefore, to employ information technology in a rational manner to enhance the management of college student education, thereby further elevating the quality of education and demonstrating the immense value of information technology. When exploring innovative and developmental modes for higher education management, based on information technology, it is crucial to adhere to the principles of student-centered management, information data management, and online integrated management. Specifically, it is necessary to innovate educational management concepts in a timely manner, refine the educational management system, establish an educational management network platform, and leverage information technology to enhance management efficiency.

1. Introduction

As the nation vigorously advances the implementation of talent strategies and accords significant attention to the development of colleges and universities, the teaching level of higher education in China has been enhanced to a considerable degree in recent years. The scope of teaching management has broadened, and numerous valuable talents have been nurtured for the advancement of various societal fields. Nevertheless, it is imperative to recognize that the current management of higher education remains suboptimal, and there persist certain challenges that hinder the further enhancement of educational standards in institutions of higher learning. Therefore, it is essential to actively pursue corresponding improvements and innovations. The sustainable development and application of information technology have revolutionized educational innovation, thus, relevant educators must recognize the profound impact of information technology and actively explore innovative advancements in higher education management modalities, in order to effectively address pertinent practical issues and bolster the sustainable development of higher education in our country.

2. Analysis of the influence of information technology on higher education management

2.1 Positive impact of the application of information technology

In terms of organizational structure, it is observed that numerous colleges and universities currently adhere to a pyramidal framework. However, this structure is prone to inefficiencies stemming from excessively detailed division of labor, leading to overlapping management functions, recurrent issues within a relatively narrow management scope, and suboptimal work execution and actual efficiency. Leveraging information technology presents an opportunity to enhance the optimization of organizational structure, fully realizing the worth of information resources and outcomes. Colleges and universities may opt for a flatter organizational design, scientifically eliminating certain middle-tier positions, thereby enhancing the efficacy of directive transmission, facilitating information flow, and significantly bolstering management outcomes.

Furthermore, information technology enables a more scientific decision-making process. The education management information system leverages advanced network platforms for efficient data transmission and automated office functions. This automation allows management personnel to promptly capture events occurring within the institution, while school leaders can swiftly respond and address issues based on the received information. Moreover, the effective integration of information technology and management work has strengthened information communication and significantly improved the efficiency of statistical and data processing, thereby enhancing the scientific rigor of relevant decision-making. For the advancement of higher education management, only by making well-informed and rational decisions, and executing them accordingly, can we attain the desired management outcomes.

2.2 The negative impact of information technology development

As information technology continues to evolve, humanity has ushered in the information age, wherein network information resources are abundant and diverse. However, it is also pertinent to note that the quality of these resources is inconsistent. Given the accessibility of the internet, virtually anyone can voice their opinions, leading to a significant amount of negative information. College students, as primary participants in online activities, engage frequently in online learning, chatting, and entertainment. While they are exposed to a vast array of information, their inexperience in social life and the lack of firmly established life values render them susceptible to negative influences. This vulnerability can result in deviations in their thinking and, in extreme cases, lead them astray[1].

These challenges pose obstacles to the administration of higher education. For instance, numerous college students are now indulged in online gaming, some of which propagate unhealthy ideologies such as violence and pornography, thereby impeding their personal growth and development. Furthermore, as the internet is inherently virtual, college students may often seek gratification and vanity in cyberspace, thus detracting from their involvement in real-world experiences and interactions. Prolonged immersion in this virtual realm can predispose them to autism, depression, and other mental health issues, ultimately having a detrimental impact on educational management efforts.

3. Principles of higher education management innovation under the perspective of information technology

3.1 Principle of student subjectivity management

In the traditional paradigm of higher education management, teachers have traditionally held a central role. However, in the context of advancing information technology, it is imperative to adhere to the principle of student-centered management. This approach necessitates viewing students as the primary focus in order to facilitate their overall development, thus enabling a genuine evolution in the innovative development of educational management practices. Given the real-world context of college students' studies and daily lives, there must be an enhanced emphasis on linguistic communication, which may include in-depth interviews. Beyond imparting knowledge and skills, we must also prioritize ideological and political education. Furthermore, for those college students experiencing psychological difficulties, such as inner solitude or Internet addiction, it is essential to implement mental health education and management strategies. These measures can assist in rectifying errors, fostering positive and optimistic mindsets, and ultimately, through our educational management efforts, we can contribute to the growth and success of college students[2].

3.2 Principles of information data management

In the information age, traditional education management lags behind. Innovation around information digital management is crucial. IT must be utilized to capture student data, like interests, learning status, and files. Integrated data analysis reveals students' development status and future direction. Teachers can then provide timely mental health guidance, fostering self-control and self-development. This data-driven approach enhances higher education management, making it more scientific, effective, and achieving higher work quality in reform.

3.3 Principles of online and offline integration management

Utilizing the backbone of network information technology, the realm of higher education management has been broadened. As such, educational personnel in colleges are now capable of providing not only traditional face-to-face guidance, but also online assistance and counseling through the utilization of network platforms. Consequently, the integration of online elements has emerged as a key trend in the evolution of educational management models. Therefore, in the administration of college education, it is imperative to shift away from the traditional, singular classroom-based teaching model, and instead incorporate distance education, online tutoring, and other information-driven methodologies. This approach aims to provide students with a novel and comprehensive learning experience, ultimately leading to improved outcomes in education management[3].

4. Innovative development mode of higher education management in the information age

4.1 Timely innovation of education and management concepts

Universities ought to augment their capital investment initiatives. It is only under the prerequisite of securing adequate funding that they can consistently update and introduce novel information technology products and equipment, thereby genuinely affording effective conditional support for the realization of management mode innovation.

In the era of information, given the immense influence of information technology on the

administration of higher education, the concerned educators in universities and colleges should prioritize the timely innovation of educational management concepts, establish fresh perspectives, and strive to foster more efficient progress in related endeavors through the utilization of information technology. Specifically, this involves: first, fostering the grid education management concept, incorporating network technology and data technology into the administration of college student education, ensuring comprehensive coverage; second, fostering an integrated ideological and political education, coupled with a humanistic and flexible management model, to promote more effective practical endeavors; and lastly, fostering the collaborative education management concept and fostering collaboration among faculty members[4]. In the information age, the development of higher education management should also prioritize the integration of subject education, thereby assisting college students in achieving better development through the collaborative management of education management and subject education. For instance, it could be integrated with innovation and entrepreneurship education, optimizing the guidance for such education, utilizing information technology to cater to current market demands for talent, and providing support for college students in their post-graduation employment and entrepreneurship endeavors.

4.2 Improve the education management system

In the realm of higher education innovation pertaining to the administration mode leveraging information technology, the imperative necessity of relevant system guarantees is paramount. Therefore, institutions of higher learning prioritize the establishment and continual refinement of the education management system, thereby facilitating the smooth and effective execution of practical endeavors under the auspices of information technology. Illustratively, during the administration of both online and offline educational modalities, universities and colleges ought to orchestrate faculty members in devising scientifically sound implementation plans, detailing the specific operations encompassing both the content and process of education management. Additionally, they must accord due diligence to the evaluation subsequent to implementation, engaging in experience consolidation, reflection, and ultimately, under the unequivocal stipulation of system regulations, securing that education management endeavors attain the anticipated favorable outcomes.

4.3 Build an education management network platform

To effectively implement information processing in education management, relevant managers must consciously execute specific operations utilizing available information resources. This is essential to achieving genuine modernization in the field. In fact, the incorporation of information technology and its concrete application in transforming traditional management modes poses a significant challenge for both managers and universities. Only by clearly understanding the impact of information technology on education management, and deliberately addressing various aspects, can we intuitively promote the high-quality development of higher education management.

To fully leverage the benefits of information technology, emphasis must be placed on the construction of a higher education management network platform, fostering innovation and development in work modes. The following key areas require particular attention:

First, utilizing network technology, the education management platform can be integrated with the campus network, ensuring smooth circulation of information resources. This allows college educators to readily access information and data about students. Second, through the application of big data and cloud computing technologies, student information and data can be efficiently obtained and analyzed, clarifying their actual development status. This, in turn, enables the development of

personalized education management programs, ensuring that education management efforts are more targeted and effective. Finally, artificial intelligence, virtual technology, and other advancements can be utilized to establish multiple platforms on the education management network, encompassing ideological and political education management, mental health management, and more. These endeavors aim to provide a solid foundation for the academic and personal growth of college students[5].

4.4 Improve management efficiency with the help of information technology

With the backing of advancements in information technology, the educational landscape has witnessed significant transformations. In the realm of intelligent technology, this evolution has markedly enhanced the efficacy of administrative tasks. Leveraging the network technology platform, students are now empowered to engage in personalized learning, tailored to their individual capabilities, and select research topics that best suit them, thereby attaining superior academic outcomes. Simultaneously, through the implementation of information technology, university administrators have achieved a paperless office environment, relying solely on network information technology for data dissemination, ushering in a novel era of digitization and intelligence. As we advance into the information age, various universities have placed considerable emphasis on the development of network information infrastructure. The introduction of 5G technology has expedited information transmission, laying the foundation for the integration of information technology in administrative processes. By utilizing computer networking equipment, pertinent information can be processed and analyzed with exceptional efficiency, enabling seamless information sharing, thereby eliminating inaccuracies and inefficiencies stemming from manual operations. This transformation has streamlined and refined management operations, leading to an improvement in the overall quality of administration within colleges and universities.

5. Conclusion

In essence, amidst the profound reform and evolving landscape of higher education, the external milieu has witnessed profound transformations. To attain superior development standards and guarantee the perpetual robustness of educational administration, universities must prioritize the incessant pursuit of innovative management modalities centered around information technology. Given the rapid strides of information technology, it has exerted a significant impact on the governance of higher education, encompassing both auspicious and problematic aspects. Therefore, it behooves the educational administrators of colleges and universities to actively confront the challenges posed by information technology, embrace the opportunities of the digital era, drive the progress and evolution of educational governance methods, and aid the holistic enhancement of undergraduate students' quality. This approach underscores the paramount significance of information technology in revolutionizing the administration of higher education.

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