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Research Article

REVOLUTIONIZING PEDAGOGY: A COMPREHENSIVE METHODOLOGY FOR TEACHING INFORMATICS AND DIGITAL TECHNOLOGIES IN HIGHER EDUCATION INSTITUTIONS

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ABSTRACT

This article reflects modern forms and methods of developing students' spirituality in the process of training outside the auditorium, their interaction with its content, the purpose and laws of professional pedagogical activity.

KEYWORDS

Mobile technologies, Higher education, Pedagogy, Informatics, Digital technologies, Mobile-centric curriculum, Collaborative learning.

INTRODUCTION

In the dynamic landscape of higher education, the integration of informatics and digital technologies into pedagogy has become not just a necessity but a transformative endeavor. As we navigate the complexities of the 21st century, the traditional paradigms of teaching are being redefined to meet the evolving needs of students preparing for a digital future. At the forefront of this educational revolution is the utilization of mobile technologies, offering a gateway to interactive, flexible, and engaging learning experiences.

The introduction of this comprehensive methodology aims to delve into the intricacies of teaching informatics and digital technologies in higher education institutions specializing in pedagogy. By exploring the potential of mobile technologies as catalysts for innovation in teaching, we seek to bridge the gap between theoretical knowledge and practical application, preparing students for the challenges of an interconnected and rapidly advancing digital world.

This article will unravel the theoretical foundations, highlight key components, and provide practical

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insights into the implementation of a mobile-centric approach to teaching informatics. As we embark on this exploration, the overarching goal is to equip educators with a transformative methodology that not only embraces the technological advancements of our era but also empowers students to become active, adaptive, and critically thinking participants in the digital revolution.

LITERATURE REVIEW

The integration of mobile technologies in higher education, particularly within the realm of pedagogy, is grounded in a rich tapestry of literature that highlights its transformative potential. The following literature review provides a glimpse into the existing body of knowledge surrounding the use of mobile technologies in teaching informatics and digital technologies.

Mobile Learning and Active Engagement: Numerous studies emphasize the role of mobile technologies in fostering active engagement among students. The portability and accessibility of mobile devices enable learners to actively participate in the learning process, promoting self-directed exploration of content and collaborative problem-solving (Sharples et al., 2019). This shift from passive reception to active engagement aligns with constructivist learning theories, where knowledge is constructed through hands-on experiences and meaningful interactions.

Collaborative Learning in Digital Spaces: The literature underscores the significance of collaborative learning facilitated by mobile technologies. Platforms and applications that support collaborative endeavors create virtual spaces where students can engage in discussions, share ideas, and collectively tackle complex problems (Wong & Looi, 2011). Such collaborative learning experiences not only enhance understanding but also cultivate essential skills for the digital age, including teamwork and effective communication.

Mobile Simulations and Real-World Applications: Mobile learning apps and simulations have emerged as powerful tools to bridge the gap between theoretical concepts and real-world applications. By providing interactive and immersive experiences, these technologies enable students to apply informatics knowledge in practical scenarios, fostering a deeper understanding of the subject matter (Hwang & Wu, 2014). Simulations also serve as valuable assessment tools, allowing educators to evaluate students' abilities to apply theoretical knowledge to authentic situations.

Adaptive Learning and Personalization: The adaptability of mobile technologies enables personalized learning experiences tailored to individual student needs. Adaptive learning platforms, informed by data analytics and artificial intelligence, can adjust the pace and content of instruction based on individual performance and learning preferences (Puentedura, 2006). This personalization not only enhances student engagement but also addresses the diverse learning styles present in higher education institutions.

Challenges and Considerations: While the literature predominantly celebrates the benefits of integrating mobile technologies, it also highlights challenges that need careful consideration. Issues of digital equity, privacy concerns, and the need for faculty development programs are recurrent themes (Keengwe & Georgina, 2013). Addressing these challenges is crucial to ensuring the inclusivity and

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effectiveness of mobile-centric pedagogical approaches.

In summary, the literature review establishes a foundation for understanding the transformative potential of mobile technologies in higher education pedagogy. The existing body of knowledge provides insights into the positive impact on student engagement, collaborative learning, real-world applications, and personalized learning experiences, laying the groundwork for the development and implementation of the proposed methodology.

THEORETICAL FRAMEWORK

The theoretical framework of the proposed methodology for teaching informatics and digital technologies in higher education institutions of pedagogy is grounded in constructivist and connectivist learning theories. These theoretical perspectives provide a foundation for understanding how learning occurs and how technology can be effectively integrated into pedagogical practices.

1. Constructivist Learning Theory: The constructivist learning theory, rooted in the works of theorists such as Piaget and Vygotsky, posits that learners actively construct knowledge by interacting with their environment and building upon their existing mental structures. In the context of the proposed methodology, the emphasis is on creating learning experiences that allow students to actively engage with informatics and digital technologies. The use of mobile technologies facilitates hands-on exploration, problem-solving, and the construction of meaning through practical application.

2. Connectivist Learning Theory: Connectivism, as proposed by Siemens and Downes, extends the idea of learning beyond individual cognitive processes to include the connections formed through networks and technology. In the digital age, learning is not confined to the individual but is distributed across networks where learners connect with information, resources, and peers. The mobile-centric approach aligns with connectivist principles by leveraging collaborative learning platforms, online networks, and interactive applications. Students are encouraged to connect with diverse sources of information, collaborate with peers, and navigate the complexities of the digital landscape.

3. Integration of Constructivism and Connectivism: The proposed methodology integrates elements of both constructivist and connectivist learning theories to provide a holistic approach to teaching informatics and digital technologies. Constructivism emphasizes the active role of the learner in constructing knowledge, while connectivism highlights the importance of networked learning and the ability to navigate and adapt in an information-rich environment.

Through the integration of these theories, the methodology seeks to create a learning environment that goes beyond the transmission of information. It aims to cultivate critical thinking, problem-solving skills, and the ability to adapt to an ever-changing digital landscape. By incorporating collaborative learning, real-world applications, and personalized learning experiences facilitated by mobile technologies, the methodology aligns with the principles of constructivism and connectivism, offering a comprehensive framework for educators in the field of pedagogy.

CONCLUSION

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In conclusion, the synthesis of existing literature on the integration of mobile technologies in higher education, particularly within the domain of pedagogy, reveals a landscape ripe with opportunities for transformative change. The reviewed studies collectively highlight the potential of mobile-centric approaches to enhance student engagement, foster collaboration, bridge the gap between theory and practice, and provide personalized learning experiences.

The positive outcomes observed in various studies underscore the relevance and efficacy of mobile technologies in addressing the evolving needs of students preparing for a digital future. The adaptability, accessibility, and interactive nature of mobile devices position them as powerful tools for educators seeking to create dynamic and engaging learning environments.

However, as we embrace the potential benefits, it is essential to acknowledge and address the challenges identified in the literature. Issues of digital equity, privacy concerns, and the need for faculty development programs underscore the importance of a thoughtful and inclusive implementation strategy. Overcoming these challenges requires a concerted effort from educational institutions, policymakers, and educators to ensure that the benefits of mobile-centric pedagogy are accessible to all students.

The proposed comprehensive methodology for teaching informatics and digital technologies in higher education institutions of pedagogy builds upon the insights gleaned from the literature. By leveraging the strengths of mobile technologies, educators can not only enrich the learning experience but also prepare students to navigate the complexities of the digital age with confidence and competence.

In essence, this scientific article contributes to the ongoing dialogue surrounding pedagogical practices in higher education by offering a roadmap for educators to embrace innovation and harness the full potential of mobile technologies. As we move forward, it is imperative to continue exploring, adapting, and refining methodologies to ensure that the integration of mobile technologies remains at the forefront of educational advancements, fostering a generation of learners equipped to thrive in the ever-evolving landscape of informatics and digital technologies.

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