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ENHANCING MODERN PEDAGOGICAL TECHNOLOGIES IN TEACHER EDUCATION IMPROVES THE QUALITY OF EDUCATION AND RESEARCH

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Abstract
The objective of this article is to present an analysis of contemporary pedagogical technologies and their implications for the field of teacher education. It also examines the significance of pedagogical technologies in the contemporary digital era, which facilitate access to education and training for both students and instructors. The article emphasizes the role of online platforms in facilitating the academic progress and knowledge acquisition of both students and instructors. Aspects of contemporary pedagogical technologies that may have an effect on the teaching and learning process are investigated in this study. It proposes the incorporation of contemporary pedagogical technologies into Uzbek universities and schools.

Keywords: teacher education, modern pedagogical technologies, augmented and virtual reality, inquiry-based learning, online platforms, digitalization.

Introduction

It is widely acknowledged that substantial changes are transpiring in all facets of human existence in the present era. However, it is the education system that experienced the most substantial changes due to the impact of Covid-19 and other contemporary factors. The aforementioned advancements in both teacher education and education as a whole have presented prospects for enhancing the quality of research and instruction. The primary cause is without a doubt the integration of state-of-the-art pedagogical technologies into the classroom environment. This is due to the fact that pedagogical technologies involve the integration of various technological tools and resources into the field of education in order to enhance the instructional and learning processes. The primary objective of these technologies is to support and augment the pedagogical methodologies employed by educators.

Constantly undergoing teacher education—a form of instruction that enhances instructors' expertise and achievements in their respective fields—in order to gain knowledge and experience these changes, educators are constantly advancing. This process generally encompasses a blend of scholarly coursework, hands-on teaching internships, and ongoing professional development. The primary objective of teacher education is to equip students with the knowledge, abilities, and proficiencies required for achievement in the teaching profession. Ensuring that the younger generation is equipped with the requisite knowledge and skills to thrive in the progressively competitive global landscape of the twenty-first century is of the utmost importance. Presently, educational reform is the primary focus of efforts to raise the standard of education in Uzbekistan. The rapid incorporation of modern pedagogical

technologies into academic institutions in Uzbekistan refers a significant and fundamental change in perspective.

Literature Review

Nowadays information and communications technologies are indispensable in all facets of our society. To furnish students with the essential proficiencies of the twenty-first century, academic establishments including schools and universities must possess the capacity to fulfill their demands and aid students in surmounting challenges; thus, they must be prepared to confront the continuous progression of technologies. The incorporation of nascent technologies into the field of education offers educators new opportunities to revolutionize their teaching methods while simultaneously creating a setting that supports students in overcoming obstacles to learning and improving their competence in the twenty-first century. Concurrently, educators are required to implement a diverse range of pedagogical methodologies, certain of which might be augmented by immersive technologies.

A variety of definitions of pedagogical technologies and teacher education are examined in the literature review. The most crucial resource for the modernization of an educational component and the preparation of a contemporary specialist is the implementation of pedagogical technologies in the field of education [1, 68].

Under the conditions of education reform, the application of pedagogical technologies substantially modernizes and potentially transforms an individual's way of life and professional endeavors. According to this perspective, the fundamental obligations of education and human existence are the development of a proficient and imaginative individual, accompanied by the obligatory acquisition of skills and knowledge necessary for successful professional endeavors and personal standing [2, 377]. Hence, the development and implementation of technologies in the educational sector to ensure high-quality training for future specialists in line with the demands of the labor market and contemporary society is becoming increasingly important [3, 10].

Advanced pedagogical technologies are unique and intricate, demanding specific expertise, capabilities, and skills. The use of cutting-edge pedagogical technologies in the education system indicates a significantly advanced level of interaction and the advancement of scientific-pedagogical and pedagogical creativity, along with the implementation of its outcomes [1, 69]. Consequently, although the implementation of pedagogical technologies is crucial, the manner in which they are executed is an additional crucial factor. As the world evolves continuously, any pedagogical technologies that we learn become obsolete while new ones are developed daily. In this case, what matters most is how they are taught in teacher preparation programs and how they are subsequently implemented in the classroom.

Therefore, it is imperative that teacher education be efficiently organized. Furthermore, an abundance of scholars has put forth definitions of teacher education that have yet to undergo scrutiny. Teacher education is essential, according to Darling-Hammond, because it prepares educators for the profession. “Educators who have undergone substantial pre-service training exhibit greater self-assurance and achievement when interacting with pupils” [4, 166]. Darling-Hammond observed that student achievement can be significantly influenced by effective teacher education. Furthermore, student achievements were said to be improved by qualified

instructors who had completed high-quality pre-service teacher education programs, whereas they were negatively impacted by inexperienced and unqualified instructors. This underscores the importance of teacher education programs that are of high quality [5, 40].

As our main focus is to study the way how these pedagogical technologies are improving the quality of education and research in different institution. The following methodologies are identified by scientists as applications of pedagogical technologies in the educational process: Self-directed learning, inquiry-based approach, project-based learning, integrated learning, reversed learning, mobile learning, game-based learning, and collaborative learning [6, 7].

At this time, educational establishments worldwide, encompassing both academic and secondary institutions, are adopting state-of-the-art information and communication technologies with the aim of enhancing the pedagogical and instructional processes. In addition to the aforementioned methods, they are implementing game-based learning, collaborative learning, self-directed learning, inquiry-based approaches, project-based learning, integrated learning, and reversed learning via mobile devices [7, 896].

Research Methodology

In this study, we primarily employed comparative, analytical, and observational methods to gain a deeper understanding of emerging pedagogical technologies and their implementation strategies in the classroom. In the present discourse, we shall scrutinize several widely used platforms on a global scale, such as Class Dojo, IXL, GoNoodle.com, code.org and Funbrain.com.

The application Class Dojo, which allows instructors to digitally monitor student behavior, will be evaluated initially. Instructors may also employ this application to motivate pupils to cultivate a positive perspective by means of inquiries and activities. ClassDojo serves as a communication platform that connects teachers, students, and parents in a virtual classroom environment. Teachers can share updates, announcements, and class-related information with parents in real-time. By utilizing Class Dojo, a cost-free application designed for classroom behavior management, instructors are able to provide students with constructive criticism regarding both group and individual assignments [8, 13]. The integration of badges, avatars, and activity-specific attributes enables educators to customize their curricula. By providing timely feedback, this application fosters continuous student engagement and assists instructors in cultivating a positive classroom atmosphere [9,1].

Our next learning platform is IXL, a cutting-edge tool created to assist students in their academic progress with a variety of educational resources. The curriculum includes mathematics, language arts, science, social studies, and Spanish. IXL's adaptive learning system is a remarkable aspect. The platform customizes content according to each student's skill level, considering their achievements and advancements. Adaptive learning ensures that students receive customized practice and instruction based on their unique requirements. IXL provides interactive questions and activities that span across a wide range of subjects and skill levels in all academic areas. Students can benefit from receiving timely feedback while working on assignments, enabling them to grasp concepts more effectively and pinpoint areas needing further focus. Educators and caregivers have access to up-to-date statistics and reports on a student's progress, allowing them to pinpoint strengths and areas for improvement. This feature

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enables a customized and analytical approach to teaching. IXL's content consistently adheres to educational standards, offering a structured and curriculum-aligned approach to learning. IXL generally functions on a subscription basis, with users such as schools, instructors, or parents purchasing access to the platform's services and content [10,1].

Our upcoming learning platform is GoNoodle.com, an online platform offering interactive and engaging content designed to promote physical activity, mindfulness, and other activities for children. It is commonly utilized in educational environments, like schools and classrooms, to promote physical activity and foster healthy routines among students. It provides a range of engaging exercise videos tailored for kids. These videos feature dance routines, yoga sessions, and other activities that encourage movement and physical fitness. Several activities on GoNoodle.com are designed to enhance the educational experience by integrating movement and exercise for students. This can improve students' involvement and cognitive abilities. It is commonly utilized in educational settings to incorporate brief bursts of physical activity and reduce sedentary periods. It is highly favored by educators for its capacity to captivate students and foster a positive and dynamic learning atmosphere. Although GoNoodle.com has a free version with basic features, there is also a premium subscription available that offers access to extra content and features [11,1].

Code.org is committed to providing computer science education to students worldwide. Code.org offers a comprehensive curriculum and coding activities suitable for students of all ages, ranging from kindergarten to high school. The curriculum is created to be easily understood by individuals without any coding background. Code.org partners with schools, educators, governments, and other organizations to advance and incorporate computer science education into mainstream curricula. The organization collaborates with technology companies and industry leaders to further its mission. Code.org provides an online learning platform with coding tutorials, challenges, and projects for students to access. The platform utilizes block-based programming languages to enhance the accessibility of coding, particularly for those new to programming [12,1].

Our next learning platform, Funbrain.com, provides a variety of educational games that encompass math, reading, science, and problem-solving. These games are crafted to be both engaging and informative, enhancing the learning experience for children. Funbrain.com categorizes its content by grade level, enabling parents and educators to choose activities suitable for a child's developmental stage. Funbrain.com offers a variety of digital books and comics for children to enjoy on the web. This collection features a variety of fiction and non-fiction material to promote reading skills. The platform may contain interactive videos and other multimedia content that adhere to educational standards. These resources are designed to enhance classroom learning and assist with independent learning at home. Funbrain.com provides resources for parents and teachers, offering tips on maximizing the platform's effectiveness and enhancing the learning experience beyond the digital activities. Funbrain.com frequently showcases vibrant characters to assist children with different activities. These characters enhance the learning experience with an entertaining touch. It is usually available for free, giving users the opportunity to try out different games and activities without needing a subscription [13,1].

Research indicates that using contemporary educational technology is essential for improving teaching and learning abilities, as well as for promoting research skills and raising the standard of education [14, 113].

Analysis and Results

As previously stated, effective teacher education should involve both pre-service and in-service educators in enhancing their pedagogical abilities through increased knowledge of emerging technologies. This article has presented five state-of-the-art technologies that ought to be integrated into each classroom, including universities and institutions in Uzbekistan.

As has been observed, ClassDojo.com encompasses a multitude of functionalities. Among these are its compatibility with both mobile devices and computers, as well as its ability to enhance student motivation and concentration by means of point adjustments for diverse classroom activities. IXL provides learners with opportunities to examine their preferred subjects through the utilization of assessments and inquiries. Additionally, academic institutions and homeschoolers utilize it. Professionals frequently incorporate it into their instructional practices with the intention of enhancing conventional teaching approaches, whereas parents may employ it to support the academic development of their children outside of the classroom.

Additionally, GoNoodle.com is highly interactive and requires students to be constantly active. In addition to physical exercise, GoNoodle.com provides exercises for relaxation and mindfulness. These activities have been designed with the intention of aiding children in managing tension, improving concentration, and fostering emotional health. Funbrain.com and IXL may share similarities in that certain sections may comprise learning challenges or assessments designed to evaluate a child's comprehension of specific concepts. These challenges frequently incorporate feedback and are interactive in nature.

Lastly, code.org is of the utmost importance due to the ongoing process of digitalization and the fact that a great number of young students are extremely interested in computer science education, for which this site offers an early adaptation. Code.org provides instructors with opportunities for professional development that equip them with the knowledge and tools necessary to effectively instruct computer science. Workshops, online courses, and ongoing support are included. Its promotion of computer science education on a global scale is of the utmost importance, placing special emphasis on ensuring inclusivity and accessibility.

Conclusion

It is evident that pedagogical technologies play a crucial role in education, especially in the digital age. In teacher education, teachers are responsible for integrating these new technologies into their teaching methods. Effective teacher education highlights the benefits of modern technologies for the younger generation, aiding in both learning and broadening their perspectives beyond the classroom. This article examines the role of pedagogical technologies in the learning and teaching process, stressing the importance of incorporating contemporary technologies in Uzbekistan. It also outlines how platforms like Class Dojo, IXL, GoNoodle.com, code.org, and Funbrain.com can be utilized for learning and teaching, along

with recommendations for implementing these platforms in universities and schools in Uzbekistan.

References

1. Balalaieva, O., Mochan, T., Hryhorenko, T., Andreikova, I., Paltseva, V., & Podkovyroff, N. (2023). Innovative pedagogical technologies – the most important resource in modernizing the training of a modern specialist. Amazonia Investiga, 12(63), 67-76.
2. Vovk, B., & Matvienko, D. (2020). Innovative pedagogical technologies as a means of improving the professional activity of teachers. Young Scientist, 10 (86), 376-381.
3. Gurevich, R. S. (2014). Use of modern learning technologies in universities. Theory and practice of managing social systems: philosophy, psychology, pedagogy, sociology, 2, 3-10.
4. Darling-Hammond, L. (2000a). How teacher education matters. Journal of Teacher Education, 51(3), 166-173.
5. Darling-Hammond, L. (2010). Teacher education and the American future. Journal of Teacher Education, 61(1-2), 35-47.
6. Holden, C. L. & Sykes, J. M. "Leveraging mobile games for place-based language learning". International Journal of Game-Based Learning, 1(2), pp. 1-18, 2011.
7. Sampaio, D., Almeida, P. "Pedagogical Strategies for the Integration of Augmented Reality in ICT Teaching and Learning Processes". Procedia Computer Science, vol. 100, pp. 894–899, 2016.
8. Dadakhodjaeva, K. "The good behavior game: Effects on and maintenance of behavior in middle-school classrooms using class dojo," 2017.
9. Information about Class Dojo from its official website. Accessed: 03.03.2024 Available online: https://www.classdojo.com/
10. Information about IXL from its official website. Accessed: 03.03.2024 Available online: https://www.ixl.com/
11. Information about GoNoodle.com from its official website. Accessed: 03.03.2024 Available online: https://www.gonoodle.com/
12. Information about code.org from its official website. Accessed: 03.03.2024 Available online: https://code.org/
13. Information about Funbrain.com from its official website. Accessed: 03.03.2024 Available online: https://www.funbrain.com/
14. Musoeva, A. The importance of developing research competence of future foreign language teachers // Journal of Science Sources – Vol 1, No. 1. – Uzbekistan. – 102-105 pp.