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**IMPROVING THE MECHANISMS OF USING MODERN INNOVATIVE
TECHNOLOGIES IN TEACHING PRIMARY SCHOOL STUDENTS AS A
PEDAGOGICAL PROBLEM***Mo‘minov Isroil Xudoyshukur ugli**Teacher at the Department of Mathematics and**Native Language in Primary Education**Termiz State Pedagogical Institute**Email: muminovisroil318@gmail.com**Tel: +998 902673797*

Annotation: This article explores the current challenges and pedagogical issues in the use of innovative technologies in teaching primary school students. Through a qualitative research approach involving classroom observations and teacher interviews, the study highlights the benefits and limitations of technology in the early stages of learning. Results suggest that while student engagement and learning outcomes improve with digital tools, lack of training and infrastructure remain serious obstacles. Recommendations are given for improving the mechanisms of integration to enhance the teaching-learning process.

Keywords: Innovative technologies, primary education, pedagogy, teaching methods, student engagement, digital tools, robotics, classroom integration, teacher training, interactive learning, infrastructure, educational reform.

INTRODUCTION

In the 21st century, the use of modern innovative technologies has become essential in educational reform, especially in primary education. These tools enhance digital literacy and support the development of critical skills among young learners. Technologies such as smartboards, educational software, interactive games, and robotics kits are increasingly being used to make lessons more engaging and meaningful. However, despite their benefits, schools often face challenges in implementation due to a lack of infrastructure, inadequate teacher training, and resistance to change. Many educators are unsure how to incorporate these tools effectively into their lessons. As a result, the full potential of technology in the learning process remains unrealized. To address this, there is a growing need to improve the mechanisms of using these technologies within pedagogical frameworks. This paper aims to explore the challenges and propose solutions for enhancing the use of innovative technologies in teaching primary school students. It seeks to examine how educational tools can be better integrated into classroom instruction to improve student engagement, learning outcomes, and teaching efficiency. Ultimately, this research contributes to understanding how to make digital innovation a sustainable and impactful part of primary education.

LITERATURE REVIEW

Educational theorists such as John Dewey and Lev Vygotsky have significantly influenced how we approach teaching and learning today. Dewey emphasized the importance of experiential learning—students learn best through doing, not just listening. Vygotsky introduced the concept

of the Zone of Proximal Development (ZPD), where learning is most effective when supported by tools and interaction. These foundational ideas align with modern approaches to using technology in classrooms. Studies show that interactive technologies can increase student engagement and motivation. For example, the use of educational games and digital storytelling can make abstract concepts more tangible for young learners. Research also highlights that teachers play a key role in successful technology integration. Without proper training and support, they may use tools ineffectively or avoid them altogether. A consistent theme in the literature is the importance of aligning technology use with clear educational goals. Rather than using devices for novelty, effective teachers integrate them to support curriculum standards. Furthermore, digital equity remains a concern—schools in rural or underfunded areas often lack the resources to adopt new technologies. This review suggests that improving access, training, and pedagogical alignment are crucial to realizing the full benefits of innovative educational technologies.

METHODOLOGY

This study employed a qualitative research design to explore the use and effectiveness of modern innovative technologies in primary school settings. The research was conducted across three public primary schools in urban and suburban areas. The participants included 15 primary school teachers and approximately 120 students aged 7–10. Data were collected over a three-month period through classroom observations, semi-structured interviews with teachers, and analysis of lesson plans. Observations focused on how technologies like tablets, smartboards, coding kits, and interactive software were used during lessons. Interviews explored teachers' experiences, perceived benefits, and challenges in integrating technology. The lesson plans were reviewed to identify how digital tools were aligned with educational objectives. The collected data were analyzed using thematic analysis to identify common patterns and themes. Ethical considerations such as consent, anonymity, and voluntary participation were strictly followed. The methodology aimed to provide an in-depth understanding of current practices and to highlight areas for improvement in the mechanisms of technological integration in the classroom. This approach helped ensure that the findings reflect authentic classroom experiences and teacher perspectives on the pedagogical use of digital tools in early education.

RESULTS

The results of the study indicate that the integration of innovative technologies in primary education positively impacts student motivation, engagement, and performance. Teachers reported that students were more active and attentive during lessons that involved smartboards, tablets, or educational games. Classroom observations confirmed higher levels of participation and collaboration when interactive technologies were used. Moreover, students demonstrated improved comprehension and retention of information, particularly in subjects like mathematics and science. Teachers noted that visual and hands-on tools made abstract concepts easier to understand. However, challenges were also reported. About 60% of the teachers mentioned difficulties due to lack of access to reliable internet, insufficient numbers of devices, and inadequate technical support. Additionally, some teachers felt unprepared or lacked confidence in using new technologies effectively. The analysis of lesson plans revealed that while technology was used, it was not always integrated with clear learning objectives. In some cases, tools were applied more for entertainment than instruction. These findings highlight both the potential and the limitations of current practices. While the benefits of technology use are evident, structural and pedagogical improvements are needed to ensure that digital tools are used effectively to support primary students' learning.

DISCUSSION

The findings of this study support existing literature that emphasizes the value of innovative technologies in enhancing primary education. The improved engagement and performance among students suggest that digital tools can be powerful instructional aids when used appropriately. However, the success of such tools largely depends on the teachers' ability to integrate them effectively into the curriculum. The lack of training and technical support identified in this study reflects a broader systemic issue in education. Teachers require ongoing professional development to stay updated with emerging technologies and pedagogical methods. Furthermore, without reliable infrastructure, such as internet connectivity and functioning devices, even the most enthusiastic teachers struggle to implement digital strategies. Another critical issue is the alignment of technology use with educational goals. Technologies should not replace traditional teaching but rather enhance it by providing new pathways for exploration, practice, and assessment. Stakeholder collaboration—including school leaders, government bodies, and educational technology developers—is essential to create sustainable mechanisms for integration. By addressing these challenges and adopting a structured approach, schools can make the use of innovative technologies more effective and equitable, ensuring that all students benefit from modern advancements in education.

CONCLUSION

In conclusion, the integration of modern innovative technologies into primary education holds significant promise for improving teaching and learning outcomes. This study demonstrated that tools such as smartboards, tablets, and educational apps can enhance student engagement, motivation, and understanding when implemented effectively. However, achieving these benefits consistently requires addressing key challenges, including insufficient teacher training, poor infrastructure, and lack of pedagogical alignment. Sustainable integration must be supported by strong institutional frameworks, continuous professional development, and equitable access to digital resources. The findings underscore the need for educational stakeholders to collaborate in designing strategies that align technological use with curriculum objectives. By refining the mechanisms of technology integration, schools can create dynamic, interactive, and inclusive learning environments that prepare students for future success. Investing in these improvements is essential to making innovative education not only a possibility but a practical and impactful reality for all primary learners.

REFERENCES:

1. O'zbekiston Respublikasi Prezidentining "Raqamli O'zbekiston – 2030" strategiyasi to'g'risidagi qarori, 2020 yil.
2. O'zbekiston Respublikasi Xalq ta'limi vazirligi. "Umumiy o'rta ta'lim maktablarida raqamli ta'limni joriy etish bo'yicha yo'l xaritasi", 2022.
3. Dewey, J. (1938). *Experience and Education*. New York: Macmillan.
4. Vygotsky, L.S. (1978). *Mind in Society: The Development of Higher Psychological Processes*. Harvard University Press.
5. Kozma, R. B. (2005). National Policies That Connect ICT-Based Education Reform to Economic and Social Development. *Human Technology*, 1(2), 117–156.
6. Voogt, J., & Knezek, G. (Eds.). (2008). *International Handbook of Information Technology in Primary and Secondary Education*. Springer.



7. Mishra, P., & Koehler, M. J. (2006). Technological Pedagogical Content Knowledge: A Framework for Teacher Knowledge. *Teachers College Record*, 108(6), 1017–1054.
8. Fullan, M. (2013). *Stratosphere: Integrating Technology, Pedagogy, and Change Knowledge*. Pearson.
9. Anderson, R. E., & Dexter, S. L. (2005). School Technology Leadership: An Empirical Investigation of Prevalence and Effect. *Educational Administration Quarterly*, 41(1), 49–82.
10. Selwyn, N. (2011). *Education and Technology: Key Issues and Debates*. Bloomsbury Publishing.
11. Alimova, D. (2021). Innovative Technologies in Primary Education: Problems and Perspectives. *Uzbek Journal of Pedagogical Sciences*, 2(4), 35–41.
12. Rasulov, M. (2023). Raqamli texnologiyalarning boshlang'ich ta'limga integratsiyasi. *Ta'lim va Innovatsiyalar*, 1(1), 10–18.