ORGANIZING EXPERIMENTAL AND PILOT STUDIES ON DEVELOPING DIGITAL LITERACY IN PRIMARY SCHOOL STUDENTS

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Annotation: This article highlights the relevance and methodological foundations of improving digital literacy among primary school students in the context of the modern educational paradigm.

Keywords: Digital literacy, primary education, experimental testing, information competence, digital environment, pedagogical experiment, information security.

Аннотация: В данной статье рассматриваются актуальность и методические основы повышения цифровой грамотности учащихся начальных классов в условиях современной образовательной парадигмы.

Ключевые слова: Цифровая грамотность, начальное образование, опытно-экспериментальная работа, информационная компетентность, цифровая среда, педагогический эксперимент, информационная безопасность.

Annotatsiya: Ushbu maqolada zamonaviy ta’lim paradigmasi sharoitida boshlang‘ich sinf o‘quvchilarining raqamli savodxonligini oshirishning dolzarbligi va metodik asoslari yoritilgan.

Kalit so'zlar: Raqamli savodxonlik, boshlang'ich ta'lim, tajriba-sinov, axborot kompetensiyasi, raqamli muhit, pedagogik eksperiment, axborot xavfsizligi.

Current processes of globalization and digitalization require the implementation of modern approaches in the education system as well. In particular, the formation of digital literacy among primary school students is considered one of the most important pedagogical tasks. Therefore, organizing experimental and pilot studies in this area to develop students' skills in working with digital technologies is of great relevance.

During the experimental process, the age-related and psychological characteristics of primary school students were taken into account, and special methodological approaches aimed at developing digital literacy were designed. In particular, interactive educational tools, educational mobile applications, multimedia lesson plans, and digital didactic materials were used effectively. This not only increased students' interest in the learning process but also contributed to the development of their competencies in searching for information, processing it, and using it appropriately.

The experimental study was organized in three stages: the diagnostic stage, the formative stage, and the final assessment stage. At the diagnostic stage, the level of students' digital literacy was assessed through diagnostic tools. During the formative stage, the educational process aimed at developing digital skills was implemented through specially designed tasks and learning activities. At the final stage, the results achieved by the students were analyzed, and the effectiveness of the experiment was evaluated.

The results of the experimental study demonstrated that an educational process organized on the basis of digital technologies makes it possible to significantly improve the digital literacy of primary school students. In addition, students developed skills of independent thinking, making appropriate decisions in problem situations, and acquiring initial competencies related to information culture. The systematic and purposeful organization of experimental studies on the development of digital literacy

among primary school students serves as an important factor in improving the quality of education.

The formation of the information society places new demands on the education system, requiring the upbringing of individuals who are not only knowledgeable but also able to operate freely in the digital environment, critically analyze information, and use it effectively. In this regard, the development of digital literacy among primary school students has become one of the priority areas of modern pedagogy.

In the modern era, it is impossible to imagine students' lives without digital devices. However, the ability to use technical tools does not necessarily indicate full digital literacy. The need to systematically develop students' skills in information security, ethical norms, and the proper use of educational resources determines the relevance of this issue.

Issues related to digital literacy and its integration into the educational process have been widely studied by both international and national scholars. In particular, foreign educational practices have achieved effective results in developing digital competence models and integrating them into primary education standards. However, within the national education system, the methodological support and experimentally validated mechanisms for developing these skills within the framework of primary school textbooks and curricula have not yet been sufficiently improved.

On April 29, 2019, the Decree of the President of the Republic of Uzbekistan entitled "On the Approval of the Concept for the Development of the Public Education System of the Republic of Uzbekistan until 2030" was announced. According to the Decree, during 2019–2021 it was planned to gradually establish **Presidential Schools** specialized in STEAM fields (Science, Technology, Engineering, Arts, and Mathematics) in every region of the country.

Within the framework of the Concept, the implementation of the outlined objectives for the development of the public education system of the Republic of Uzbekistan until

2030 places special emphasis on the development of STEAM subjects, as well as competencies and skills related to critical thinking, independent information search, and analysis. Taking these priorities into account, general education curricula and new state educational standards that meet the requirements of a modern innovative economy are being introduced. In this context, the present article discusses the implementation of the STEAM approach in mother tongue education. STEAM is an approach developed in the United States and is based on the integration of science, technology, engineering, arts, and mathematics, as well as other related interdisciplinary subjects.

Today, shaping students' knowledge and skills, educating them in the spirit of loyalty to national and universal values, enhancing the prestige of the teaching profession and improving the quality of the teaching workforce, modernizing textbooks and educational-methodological complexes in accordance with contemporary requirements, and establishing modern models of public education institutions that meet international standards are among the most pressing priorities. To this end, the Decree of the President of the Republic of Uzbekistan "On the Approval of the National Program for the Development of Public Education for 2022–2026" was adopted as part of the implementation of the New Uzbekistan Development Strategy for 2022–2026.

Modern digital technologies provide new tools for the development of educational institutions worldwide. Digitalization creates opportunities for sharing acquired knowledge and experience, enabling individuals to access more information and make better decisions in their daily lives. In the near future, significant changes related to digitalization are expected to occur in the educational environment. In the process of training specialists, the electronic education system is creating new opportunities as well as new challenges. Key opportunities include solving educational

problems, expanding the choice of learning formats, and increasing the means of knowledge transfer.

The need to understand the place and role of digital technologies in modern education should be reflected in contemporary research in the fields of preschool and primary education methodology and didactics. Currently, issues related to the application of digital technologies in the integration of preschool and primary education are giving rise to studies aimed at selecting future development strategies and priority directions. It is evident that, in order to transition to a competitive education and research model in the future, a digital transformation program must already be developed.

It can be stated that the proper establishment of the foundations of digital literacy in primary education is a key prerequisite for educating a competitive generation capable of finding its place in the era of the digital economy and advanced technologies, possessing a high level of intellectual potential. This, in turn, requires continuous development of teachers' digital competencies and the integration of the most modern pedagogical technologies into the educational process.

The development of digital literacy among primary school students is not merely a contemporary requirement but a strategic task aimed at strengthening the intellectual foundation of society. This process fosters not only students' skills in using computers or tablets, but also the formation of algorithmic thinking, analytical processing of information, and media culture.

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