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INFORMATION SECURITY IN THE DIGITAL EDUCATIONAL ENVIRONMENT

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Abstract: This article examines the issues of ensuring information security in the digital educational environment. It analyzes the main threats and risks associated with the use of online platforms, cloud services, and electronic educational resources. Special attention is paid to the protection of students' and teachers' personal data, as well as to fostering a culture of safe online behavior. The study emphasizes the importance of digital literacy and ethical standards in the interaction among participants in the educational process. Finally, recommendations are proposed to enhance the level of information security and promote responsible digital behavior within the educational environment.

Keywords: information security, digital education, online platforms, data protection, digital literacy, cyber threats, ethics, educational environment.

The rapid development of digital technologies and the globalization of the information space have made information security an increasingly important issue. The modern education system of the Republic of Uzbekistan is actively implementing digital technologies, electronic platforms, and online services, creating new opportunities to improve the quality of education. At the same time, this digital transformation introduces new challenges, including data breaches, cyber threats, and violations of ethical standards in the online environment.

In the 21st century, education has become an integral part of the global digital ecosystem. The use of cloud technologies, video conferencing, online platforms, and distance learning systems requires participants in the educational process to possess not only technical knowledge but also a strong culture of digital security. The relevance of this topic is driven by the need to develop



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sustainable safe online behavior among teachers and students, enhance their ability to protect personal data, and foster an awareness of their responsibility when using digital resources.

Thus, ensuring information security in the digital educational environment is one of the key prerequisites for the successful functioning of the modern education system and a major priority of the digital development policy of the Republic of Uzbekistan.

Children's information security in the digital environment refers to ensuring their protection from negative influences and threats that may arise on the Internet and in other digital environments. It includes safeguarding personal data, preventing access to inappropriate content, teaching safe online behavior, and promoting responsible use of digital technologies. This is an essential component of modern education and child development in the information society.

The information and communication competence of students and teachers regarding Internet safety is the ability to effectively use information technologies and digital communication tools while possessing the knowledge, skills, and competencies necessary for safe, responsible, and ethical behavior in the online environment.

This competence includes the following key aspects:

1. **Knowledge of the fundamental principles of Internet security**, including the use of strong passwords, protection of personal information, and awareness of online risks and cyber threats.
2. **The ability to evaluate and select reliable and secure websites, applications, and software** for educational and professional purposes.
3. **Critical thinking and information analysis skills**, enabling users to assess the credibility of online information and identify potential viruses, malware, or other security threats.
4. **The ability to use email, social networking platforms, instant messaging applications, and other online communication tools effectively and securely**, while maintaining privacy and protecting personal data.

5. **Knowledge and understanding of digital ethics and appropriate online behavior**, including respect for others' privacy, prevention of cyberbullying, and avoidance of unsafe or unwanted communication with strangers.

The development of information and communication competence in the field of Internet safety is an essential objective of modern education. It aims to prepare both students and teachers for the safe, responsible, and effective use of Internet resources by equipping them with the knowledge and skills required to protect themselves and others in the digital environment.

Figure 1 presents a graphical analysis of the key measures for ensuring information security in the digital educational environment.

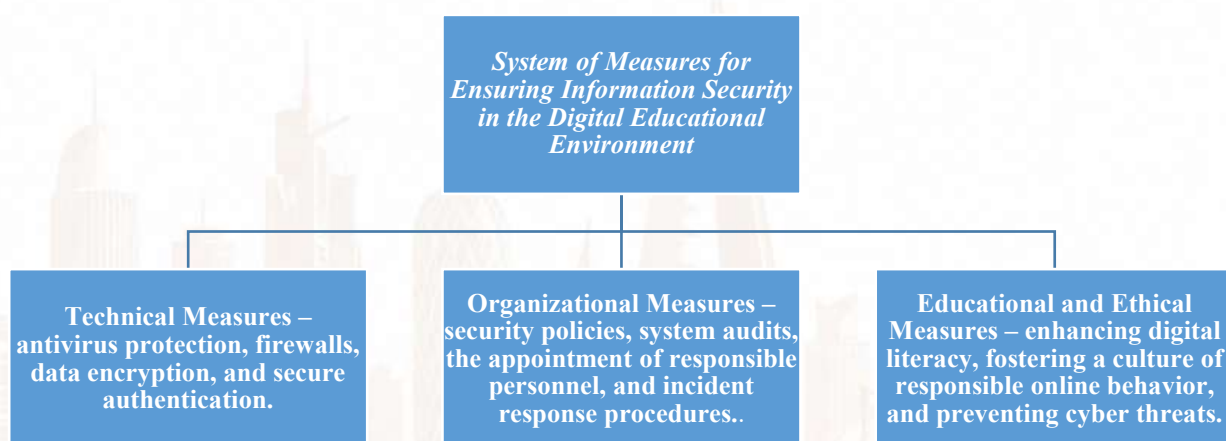


Figure 1. System of Measures for Ensuring Information Security in the Digital Educational Environment

The technical, organizational, and educational-ethical measures discussed above constitute an integrated system aimed at ensuring information security, protecting personal data, and promoting digital culture among all participants in the educational process. The effectiveness of this system depends not only on the implementation of modern information security technologies but also on fostering users' awareness and responsibility regarding digital security.

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In the Republic of Uzbekistan, this area has been developing steadily through the implementation of national digital transformation initiatives, including the "Digital Uzbekistan – 2030" strategy, as well as through the continuous improvement of the regulatory and legal framework in the field of information security. These efforts contribute to the creation of a secure digital educational environment, enhance the digital literacy of the population, and strengthen public trust in electronic educational platforms and services.

REFERENCES

1. Nuraliyeva P.E. The Role of Digital Technologies in the Formation of Student Competency // Spanish journal of Innovation and Integrity. – Spain, 2022. Volume 05. Impact Factor 6.6. ISSN 2792-8268. – P. 257-263.

2. Nuraliyeva P.E. The Relevance of the Implementation of Programs for the Formation of Digital Competencies Among Students // Miasto Przyszłości Kielce. Online research journal from Poland. – Poland, 2023. Vol. 35. Impact Factor 6.5. ISSN 2544-980X. – P. 51-55.

3. U. Jumankuziev. "Using new approaches to teaching programming languages in secondary schools". Galaxy International Interdisciplinary Research Journal, vol. 11, no. 5, May 2023.

4. Parvina Nuraliyeva, Elvira Tursunnazorova, Durdona Otakulova "Methods of developing professional competence in students through the use of digital technologies" AIP Conf. Proc. 3244, 030040 (2024) <https://doi.org/10.1063/5.0241982>

5. Степанова Н.А. Обеспечение информационной безопасности детей в цифровом пространстве // Гуманитарные исследования Центральной России. – 2024. – №1 (30). – С. 59-77.