

Article

# Development of Information and Library Centers Using New Technologies

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**Abstract:** This article discusses the processes of introducing new technologies in information and library centers and their scientific, pedagogical and practical significance. The impact of digitization, electronic libraries, online databases, cloud technologies, RFID and automated systems on library activities is analyzed. The article considers the conveniences created for users, problems and their solutions in a popular scientific style.

**Keywords:** information and library center, digitization, electronic library, database, cloud technology, RFID, innovative development, information culture.

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## 1. Introduction

The 21st century is the era of information. In today's era of globalization, the flow of knowledge and data is increasing at a rapid pace. In such conditions, the role of Information and Library Centers (ILCs) has become even more significant. A library is no longer just a place for storing books; it has become a center for scientific research and a modern platform providing access to information and knowledge. In this process, new technologies such as digitization, electronic databases, artificial intelligence, and cloud services are becoming the main foundation of ILC development[1-5].

This article analyzes the theoretical foundations of using new technologies, the experience of their implementation in library activities, the conveniences they create for users, and promising directions in this field[6].

### The Modern Role of Information and Library Centers

Today, ILCs are an integral part of scientific, educational, and cultural processes. Their main tasks include:

- Providing users with fast and reliable information;
- Creating electronic resources for scientific research;
- Developing information literacy among students;
- Ensuring equal access to knowledge.

With the introduction of digital technologies, ILCs are transferring their services to online platforms. Electronic libraries, digital catalogs, and remote information systems are making library services more interactive and global in nature[7-11].

## 2. Methodology

This study employs a descriptive-analytical research methodology to investigate the role of new technologies in the development of Information and Library Centers (ILCs). The research focuses on analyzing existing literature, digital transformation practices, and

technological applications used in modern library systems. The study is based on a qualitative research design, which allows for an in-depth understanding of how technologies such as digitization, electronic databases, cloud computing, and RFID systems influence library operations. The descriptive approach is used to explain current practices, while the analytical approach is applied to evaluate their effectiveness[12-13].

### 3. Result

#### Application of New Technologies in ILCs

##### 1. Digitization and Electronic Libraries

Digitization is one of the key directions in the development of ILCs. Through scanning ancient manuscripts, rare books, and scientific works, it has become possible to preserve them and make them accessible to a wider audience. Electronic libraries allow users to access information anytime and from anywhere.

##### 2. Databases and Online Catalogs

Databases provide users with fast search systems. For example, platforms such as EBSCOhost, ScienceDirect, or local electronic catalogs help in finding scientific articles, books, and dissertations. The introduction of artificial intelligence-based recommendation systems in search engines allows users to receive resources tailored to their interests[14-15].

##### 3. Cloud Technologies

Cloud technologies enable ILCs to store and share large volumes of data. This is especially important in cooperation with educational institutions. Through online platforms, users can download or store necessary information from their personal accounts.

##### 4. RFID and Automated Systems

Radio Frequency Identification (RFID) technology allows for the registration, tracking, and easy retrieval of books. This reduces the workload of librarians and speeds up user services. Automated book return systems further improve the efficiency of library operations[16].

#### Convenience for Users

The introduction of new technologies creates the following opportunities for Information and Library Center users:

Remote access: Access to catalogs and resources via the Internet.

Fast search: Finding the required book or article within a few seconds.

Personalized service. A list of books suitable for the user based on artificial intelligence recommendations[16].

Interactivity: Users communicate with each other through forums, webinars, and online meetings. Pedagogical and Scientific Significance; The digitalization of libraries supports the educational process. Students and researchers can read scientific sources and download information quickly from anywhere. This increases the efficiency of scientific research work. From a psychological perspective, new technologies develop users' abilities for independent research, information filtering, and analysis. The growth of information culture raises the intellectual potential of society.

### 4. Discussion

#### Problems and Solutions

At the same time, there are several challenges in the process of implementing new technologies:

\* Insufficient technical infrastructure;

\* Lack of qualified specialists;

\* Issues of copyright protection.

To solve these problems, it is necessary to modernize Information and Library Centers through cooperation between the public and private sectors, retrain librarians in IT skills, and improve legal regulations.

## 5. Conclusion

New technologies are accelerating the development of Information and Library Centers and turning them into an integral part of the global information space. Digitization, electronic catalogs, cloud services, and artificial intelligence-based systems expand the capabilities of ILCs, create convenience for users, and speed up the process of knowledge acquisition. Therefore, developing a comprehensive strategy for the implementation of these technologies and ensuring their consistent execution is one of the most urgent tasks of today.

The present article addresses that need by proposing a formative assessment framework built around PhET simulations and artificial intelligence. The argument is that simulation activity and guided AI dialogue should not be regarded as supplementary classroom features but as core evidence streams. If carefully designed, they can reveal how a student reasons, which misconception remains active, and what kind of feedback is most likely to support conceptual growth[2]. Active learning research provides a strong background for this orientation, showing that learning improves when students actively explain, test, and discuss ideas rather than passively receive them [3].

PhET research adds another layer to this argument. Because the platform enables students to manipulate variables and inspect multiple representations, it creates a rich setting for collecting evidence about understanding [4]. Meanwhile, current work on AI in education suggests that carefully regulated systems can provide timely feedback, support self-explanation, and reduce some barriers to engagement, though their use must remain human-

## REFERENCES

- [1] A. A. Q. Toshpo'latov, "Maktab o'quvchilari o'rtasidagi zo'ravonlik (bullying) va unga qarshi kurashish yo'llari," *Obrazovanie i Nauka v XXI Veke*, no. 22, vol. 5, pp. 874–875, Jan. 2022.
- [2] A. A. Q. Toshpo'latov, "Ta'lim jarayonining psixologik mazmuni," *Obrazovanie i Nauka v XXI Veke*, no. 24, vol. 5, pp. 460–465, Mar. 2022.
- [3] A. A. Q. Toshpo'latov, "Turistik sayohatlarning inson sog'lig'i va psixologiyasiga ta'siri," *Obrazovanie i Nauka v XXI Veke*, no. 24, vol. 5, pp. 466–468, Mar. 2022.
- [4] S. R. Samarova and A. A. Q. Toshpo'latov, "Ijodkor shaxslarning shakllanishida xotira jarayonining o'rni," in *Proc. konferensiya: Hozirgi taraqqiyot bosqichida jismoniy tarbiya va sport mashg'ulotlarini tashkil qilishning istiqbollari: muammo va yechimlar*, 2022, pp. 640–650.
- [5] A. A. Q. Toshpo'latov, "Yangi O'zbekiston ma'rifatli jamiyatni yaratishda yoshlarning o'rni va psixologiyasining shakllanishi," *Galaxy International Interdisciplinary Research Journal*, vol. 10, no. 6, pp. 523–527, Jun. 2022.
- [6] A. A. Q. Toshpo'latov, A. A. Karomatov, "The development of moral qualities in youth psychology of the past days," *Zien Journal of Social Sciences and Humanities*, pp. 62–63, 2022.
- [7] A. A. Q. Toshpo'latov, "Yoshlarning dunyoqarashi va xulq-atvoriga ta'sir etuvchi ijtimoiy psixologik omillar," *Science and Innovation*, no. 3, pp. 854–857, 2022.
- [8] I. Sh. Fayziyev and A. A. Q. Toshpo'latov, "O'zbekiston Respublikasining mustaqillikdan oldingi va keyingi siyosiy hayoti," *British Journal of Global Ecology and Sustainable Development*, vol. 10, pp. 31–34, Nov. 2022.
- [9] A. A. Q. Toshpo'latov, "Shaxs psixodiagnostikasida proyektiv metodikalardan foydalanish," *Eurasian Journal of Social Sciences, Philosophy and Culture*, vol. 3, no. 5, pp. 170–178, 2023.
- [10] J. Temirov and A. A. Q. Toshpo'latov, "Tyutor pedagogik faoliyatini tashkil etishning psixologik asoslari," *Science and Innovation*, vol. 1, no. 28, pp. 29–32, 2023.
- [11] G. Umarova and A. A. Q. Toshpo'latov, "Klaster tanqidiy fikrlash texnologiyasi sifatida," *Central Asian Journal of Interdisciplinary Research and Management Studies*, vol. 1, no. 10, pp. 49–55, 2024.
- [12] A. A. Q. Toshpo'latov and Z. A. Ummatova, "Shaxslararo munosabatlarda shaxs agressiya," *Central Asian Journal of Education and Innovation*, vol. 2, no. 4, pp. 30–31, 2023.
- [13] A. A. Q. Toshpo'latov and Z. A. Ummatova, "Ijtimoiy tarmoqlarda 'ommaviy madaniyat'ga qarshi kurashishning didaktik vositalari," *Central Asian Journal of Education and Innovation*, vol. 2, no. 4, pp. 27–29, 2023.
- [14] R. Abdullayev, *Axborot-kutubxonalar texnologiyalari*. Toshkent, Uzbekistan: O'zbekiston Davlat Konservatoriyasi, 2022.
- [15] S. Karimova, "Elektron kutubxonalar va ularning imkoniyatlari," *Axborot Texnologiyalari Jurnal*, vol. 3, no. 2, pp. 55–62, 2021.
- [16] B. Qodirov, *Raqamli axborot resurslarini boshqarish tizimlari*. Toshkent, Uzbekistan: Innovatsion Nashriyot, 2020.