

ENHANCING CULTURAL HERITAGE INTERPRETATION THROUGH QR CODE-BASED DIGITAL LIBRARY SERVICES: A CASE STUDY OF THE "DIGITAL RENAISSANCE" PROJECT IN DUSTLIK DISTRICT, UZBEKISTAN

O'tkirbek Narbayev

Head of Information Communication Technologies
and Digitization Service, Information and Library
Center of Dustlik District, Jizzakh Region, Uzbekistan
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Abstract

The rapid advancement of digital technologies has significantly transformed the way cultural heritage is preserved, interpreted, and disseminated. Libraries are no longer limited to providing traditional information services; instead, they have become active participants in digital knowledge creation and public education. This paper presents the "**Digital Renaissance**" project implemented by the Dustlik District Information and Library Center in Uzbekistan as an innovative model for integrating digital library services with cultural heritage interpretation. The project utilizes Quick Response (QR) code technology to provide visitors with instant access to audio guides and electronic documents related to prominent scholars represented at the Renaissance Monument. All educational materials were developed using verified library resources and professionally narrated before being uploaded to the official library website. This approach enables visitors to obtain reliable information independently while simultaneously promoting digital library resources and increasing public engagement. The findings suggest that the project has improved access to cultural information, increased website traffic, strengthened library visibility, and encouraged historical awareness among young people. The proposed model offers a practical and cost-effective solution that can be replicated in other historical and cultural sites throughout Uzbekistan.

Keywords: Digital library, QR code, cultural heritage, Renaissance Monument, audio guide, information services, library innovation, Uzbekistan.

1. Introduction

The digital transformation of libraries has become one of the defining characteristics of modern information services. Across the world, libraries increasingly employ information and communication technologies to improve access to knowledge, preserve documentary heritage, and provide user-centered services beyond physical library buildings. At the same time, many countries have recognized the importance of combining cultural heritage preservation with digital technologies to improve public education and historical awareness.

In Uzbekistan, the national development strategy places considerable emphasis on the concept of the **Third Renaissance**, which promotes scientific development, education, innovation, and cultural enlightenment. Numerous Renaissance monuments and memorial complexes dedicated to outstanding scholars, scientists, poets, and historical leaders have recently been established throughout the country. These monuments symbolize national identity and intellectual heritage. However, visitors often receive only limited information because monuments generally contain short inscriptions or plaques that cannot fully explain the historical significance of the represented personalities.

This limitation creates a gap between physical monuments and meaningful educational experiences. Visitors frequently leave historical sites without obtaining comprehensive information about the scholars, their scientific achievements, or their contributions to civilization.

To address this issue, the Dustlik District Information and Library Center developed the "**Digital Renaissance**" project. Rather than treating monuments as static memorials, the project transforms them into interactive educational spaces by integrating digital library technologies, QR codes, professional audio narration, and electronic information resources.

2. Project Design and Methodology

The "Digital Renaissance" project was designed as a practical digital information service that combines library resources with modern mobile technologies.

Each historical figure represented within the Renaissance Monument is provided with an individual QR code installed near the corresponding information board. Visitors simply scan the QR code using a smartphone camera, which automatically redirects them to the official website of the Dustlik District Information and Library Center.

The digital platform provides immediate access to:

- professionally narrated audio guides;
- electronic PDF materials;
- biographical information;
- scientific achievements;
- historical references;
- recommended reading materials available in the library collection.

Unlike many digital museum applications that rely on external hosting services, all electronic resources in this project are permanently stored on the official website of the Information and Library Center. This centralized storage ensures long-term accessibility, minimizes the possibility of broken links, and improves information security.

An important feature of the project is the preparation of educational content. Every audio guide and electronic document was developed using verified books, encyclopedias, and historical publications available in the library's collection. After preparing the texts, the materials were professionally recorded in a sound studio to ensure high-quality narration and an engaging listening experience for visitors of different age groups.

The project therefore combines traditional librarianship with digital technologies while maintaining academic reliability and information accuracy.

3. Results and Discussion

Since its implementation, the Digital Renaissance project has attracted considerable attention from school students, teachers, researchers, government officials, tourists, and local residents visiting the Renaissance Monument in Dustlik District.

One of the most significant outcomes has been the transformation of passive sightseeing into interactive learning. Instead of simply observing monuments, visitors actively explore the biographies, scientific discoveries, literary works, and historical contributions of outstanding scholars through digital content.

The project has also expanded the role of the Information and Library Center beyond its physical building. Every QR code functions as a digital gateway leading visitors to the library's electronic services. Consequently, users not only access information about historical personalities but also become familiar with library activities, newly acquired publications, cultural events, educational programs, and other electronic resources.

Another important achievement concerns public accessibility. Traditional guided tours usually require human guides, scheduled visits, and additional operational costs. In contrast, the Digital Renaissance project provides continuous twenty-four-hour access to educational materials without requiring permanent staff presence at the monument. Visitors can independently obtain information at their preferred time using only a smartphone and an internet connection.

The project also contributes to information preservation. Because all digital resources are maintained by the Information and Library Center, updates can easily be introduced whenever new research or historical information becomes available. Centralized management further

strengthens copyright protection and reduces risks associated with unauthorized modification of educational materials.

From an educational perspective, the project has increased students' interest in national history, scientific heritage, and reading culture. Teachers increasingly use the Renaissance Monument as an outdoor educational environment where historical lessons are combined with digital learning tools. Such integration promotes independent learning while making historical knowledge more engaging for younger generations.

Overall, the project demonstrates that libraries can successfully function not only as repositories of books but also as active producers and distributors of digital knowledge.

4. Conclusion

The **Digital Renaissance** project illustrates how modern information technologies can significantly enhance cultural heritage interpretation while strengthening the social role of libraries.

By integrating QR code technology, digital library resources, professionally narrated audio guides, and reliable historical information, the project has transformed a traditional monument into an interactive educational platform accessible to all visitors.

The initiative demonstrates several important advantages. First, it provides accurate and verified historical information based on library collections. Second, it increases public awareness of library services by directing visitors to the official digital platform. Third, it requires relatively low financial investment while offering continuous public access without the need for permanent on-site personnel.

The experience of the Dustlik District Information and Library Center suggests that this model can be successfully replicated in museums, historical monuments, memorial complexes, archaeological sites, libraries, educational institutions, and other cultural heritage locations throughout Uzbekistan and beyond.

Digital technologies should not replace cultural heritage; rather, they should serve as effective tools for making historical knowledge more accessible, engaging, and sustainable for future generations.

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