

Smart libraries: the application of emerging and innovative technologies

Introduction

The digital revolution has created significant changes in everyday life. The Internet and mobile technologies have revolutionized the way that people find, consume, and interact with content. New emerging and innovative technologies are playing a pivotal role in shaping every aspect of our lives and libraries are no exception. The role of the twenty-first century library in the digital era has now changed. Smart people, smart places, smart collections, and smart services have become an integral part of smart libraries of the future. The root and base of future smart libraries is closely interrelated with the cohesive relationship between people, place, knowledge and technology to create a platform for learning, participation, creativity, and innovation. Future smart libraries will focus more on data management, innovative organization of data and information and the increasing accessibility of research content, maintaining the scholarly record, innovation in collections and services, and better use of human resources.

There are many challenges associated with future smart libraries. Technologies, such as electronic publishing, mobile apps, citation technologies, open content, the Internet of Things, semantic web, linked data, machine learning, deep learning, artificial intelligence, and so on are playing a major and bigger role in reshaping libraries. Libraries all over the world are in a transition phase while adopting these changes.

Fewer research questions, diverse fields

The first field describes the “The Innovative Techniques in Smart Library”. In this special issue, [Gul and Bano \(2019\)](#) discussed the emerging and innovative technologies which applied into the smart libraries. They searched the recent literature by various keywords, such as smart library, smart technology, Internet of Things (IoT), electronic resource management (ERM), data mining, artificial intelligence (AI), ambient intelligence (AmI), blockchain and augmented reality (AR). In addition, [Yu et al. \(2019\)](#) proposed a technology classification approach for omni-channel library. The contributions of this study can be used as a reference to design the library channel integration strategy. Finally, [Jo et al. \(2019\)](#) presented a trusted security zone architecture that adopted a blockchain technology to offer the secure sharing of data. The empirical results would be very useful for the public library and the future smart library.

The second field focuses on “The Learning Applications in Smart Library”. In this special issue, [Deng \(2019\)](#) proposed a MOOC-based knowledge map of higher education domains and implemented it into the university libraries. The empirical results can provide the personalized library services for every visitors. [Li \(2019\)](#) investigated the effects of the combination of synchronous Web-based teaching with visually creative teaching on art students’ creativity. This study can extend to another perspective of enlightenment for the future self-learning activities in the library. In the same way, [Jian \(2019\)](#) investigated the effects of digital flipped classroom teaching method integrated cooperative learning model on learning motivation and outcome. The empirical results illustrated the proposed model can enrich the scientificity and diversity of the self-learning activities in the library and classroom. Finally, [Liu et al. \(2019\)](#) discovered the corresponding ways and methods to strengthen the environmental moral education



based on scientific research methods and also discussed the learning environment in the smart library.

Researches in the third and last field investigate the “The Environment in Smart Library”. [Chen \(2019\)](#) explored the affect factors of museum audience satisfaction with different music playing experience. The results illustrated that perceived value and perceived quality have the greatest influence on audience’s satisfaction. In addition, [Hsiao et al. \(2019\)](#) investigated how the factors influence the continuance usage intention of lifestyle mobile App by structural equation model analysis. The results found the information quality, system quality and service quality significantly impacted the satisfaction and utilitarian value. Finally, [Miao \(2019\)](#) claimed the important of smart library integrated the human rights protection. Then, they survey the AI technologies to serve human beings and ensure the human rights ethics.

Conclusion

This special issue focuses on the emerging and innovative technologies to perform innovative information organization and services in smart libraries. We discuss the three future trends in the smart library and hope it will be a reference for the library and information science scholars to do the novel research studies.

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