Original Article

Comparison of Iranian National Medical Library with digital libraries of selected countries

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ABSTRACT

Introduction: The important role of information and communication technologies and their influence on methods of storing, retrieving information in digital libraries, has not only changed the meanings behind classic library activates but has also created great changes in their services. However, it seems that not all digital libraries provide their users with similar services and only some of them are successful in fulfilling their role in digital environment. The Iranian National Medical library is among those that appear to come short compared to other digital libraries around the world. By knowing the different services provided by digital libraries worldwide, one can evaluate the services provided by Iranian National Medical library. The goal of this study is a comparison between Iranian National Medical library and digital libraries of selected countries. **Materials and Methods:** This is an applied study and uses descriptive – survey method. The statistical population is the digital libraries around the world which were actively providing library services between October and December 2011 and were selected by using the key word "Digital Library" in Google search engine. The data-gathering tool was direct access to the websites of these digital libraries. The statistical study is descriptive and Excel software was used for data analysis and plotting of the charts. **Results:** The findings showed that among the 33 digital libraries investigated worldwide, most of them provided Browse (87.87%), Search (84.84%), and Electronic information retrieval (57.57%) services. The "Help" in public services (48/48%) and "Interlibrary Loan" in traditional services (27/27%) had the highest frequency. The Iranian National Medical library provides more digital services compared to other libraries but has less classic and public services and has less than half of possible public services. Other than Iranian National Medical library, among the 33 libraries investigated, the leaders in providing different services are Library of University of California in classic services, Count Way Library of Medicine in digital services, and Library of Finland in public services. **Results and Discussion:** The results of this study show that among the digital libraries investigated, most provided similar public, digital, and classic services and The Iranian National Medical library has been somewhat successful in providing these services compared to other digital libraries. One can also conclude that the difference in services is at least in part due to difference in environments, information needs, and users. **Conclusion:** Iranian National Medical Library has been somewhat successful in providing library services in digital environment and needs to identify the services which are valuable to its users by identifying the users' needs and special characteristics of its environment

Key words: Digital library, Iranian National Medical Library, services

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INTRODUCTION

Today, with the emergence of information technology, the classic meaning of library services and the services provided by them have changed a great deal. The recent changes and trends regarding information including library acquisition, storage, and processing and sharing resulted in creation of digital libraries.[1] Oppenheim and Smith described a digital library as a library which uses digital technologies for providing all search, storage, retrieval, and access services. (Oppenheim and Smith, [2001], quoted in, Alijani, [2002]).[2] In today's digital environment, most reference books such as encyclopedias, dictionaries, and handbooks are in digital format. Today also, more than 50% of second-hand-references such as chemical abstract, Index Medicus, Engineering Index, etc., are accessible in digital format. Most digital libraries provide their users with access to many digital sources and providing services such as information services and personalized references is among the most important characteristics of information experts. Reference services include finding the information required by the user or helping the user in finding the necessary information, training in the use of resources and services, and guiding the users in finding the most suitable and most relevant references and information services. Information services are provided based on the users' needs or according to the projected necessary services. These services are provided in order to familiarize the users with the recent advances in their area of interest, through search in digital library environment and even as Dialogue by non-library organizations.[1]

Iranian National Medical Library (INLM) was created under the supervision of Shahid Beheshti University of Medical Science at 2008 with the goals, activities, and ideals similar to those of classic libraries and aims to provide Medical Universities of Iran with suitable scientific sources, mostly in English. This library provides the professors, researchers, and medical students in all national medical universities and research institutions with equal access to the latest medical resources worldwide in several formats including credible journals, reference books, dissertations, pictures, relearning courses, protocols, Atlases, etc., The services of this library is free for all professors, researchers, and students in the medical field in Iran and the users can use advanced digital library technologies to easily gain access to the necessary information.[3] In order to increase the satisfaction of the users, it is necessary to evaluate the services provided by INLM. One of the ways for this evaluation is identifying different services provided by digital libraries worldwide and comparing them to the services provided by INLM.

The services provided by digital libraries are categorized into several categories. For example, Mohammadi Fard categorizes the services provided by digital libraries in four categories of classic, digital, public, and other services provided based on the needs of the users and environment.[1] Parida divides the different aspects of digital libraries and different reference services provided by them into 5 categories including personalized services, information, and web-based services, search engine services, digital reference services for public and academic users, and collaborations between digital libraries. Also, Pomerantz divides the services provided to two categories of technical (categorizing, organization, protection, and storage) and public (other library service).[4]

Parida conducted a study titled "Emergence of Digital Library Services in India". He emphasized the importance of digital libraries in the digital age and divided the different aspects of development of digital libraries and different types of reference services provided in digital environment into five general categories of personalized services, information, and web-based services, search engine services, digital reference services for public and academic users, and collaborations between digital libraries. He concentrated his study on the digital library services in India and explained the innovations by UGC, India, the INFLIBNET Centre, DELNET, IITs, RECs, National Research Organizations/Institutions of India in digitization of libraries and information centers in order to provide digital library services. He also suggested that in countries such an India in which the resources are limited and the budgets insufficient, library and information science experts must use their skills and expertise in order to overcome the challenges in the way of advancement of technologies and the emergence of digital library services.[1]

Dee and Allen conducted a study in order to investigate the usefulness of digital resources in websites of universities of medical science. This survey study had the statistical population of 119 academic medical libraries and its goal was identifying the digital services provided by these libraries and the effect of these services on easy access to searchable and quality information. The finding s showed that other than a few institutional which were successful in their services and had high efficiency, most academic libraries decided that dialogue-based digital services were inadequate. The growth in the use of dialogue in digital reference section of small and medium size libraries is slow. This study showed that among 132 websites of medical science libraries in United States, 36 of them (27%) used chat rooms and emails in reference services. This study also showed that the limited use of these features and their unsuitable placement on the homepages together decrease the efficiency of these features which in turn causes a decrease in the use of these features.[5]

Yaminfiroz and Mohammadi Firozjaei in a study titled "National Digital Library of Iran (INMDL): Dos and Don'ts" defined national digital library after defining national and digital libraries. They concluded that the services and resources provided by National Digital Library of Iran (INMDL) aren't close to the definitions of digital and national libraries. They noted that the studies show that the appearance of digital libraries seem important and therefore important library functions are sacrificed behind these appealing fronts and millions of Dollars, human resources, and the time spent for the implementation of these digital

library projects go to waste due to unscientific activities. As a result, one must always keep in mind that whenever an adjective (like digital) gains more importance compared to the main goal (library), then the way things are going is wrong and in need of revision.[3]

NaghiMehrtabai investigated the feasibility of providing digital library services in Tehran in a survey study. The findings of this study showed that the use of information technology by investigated institutions for gathering, processing, storage, retrieval, and sharing of oral and visual information is mediocre. This study also showed that many of these institutions make very limited use of the Internet for their reference services (44%) and only 24% of them make great use of the internet. Also, it was showed that more than 65 institutions (88%) used a combination of classic and electronic services for providing reference services. Also, these institutions make little use of Email for information gathering, financial transactions, receiving requests from users, providing selective information sharing services, delivery of documents and routine announcements, and the use of video conference and digital chat rooms as a means of communication is also limited. These institutions had mediocre standing regarding expert human resources in providing reference services and 61% of them lack dedicated financial means for providing electronic reference services.[6]

Mohammadi Mianrodan conducted a study titled "Information and Reference Services in the Digital Library". He pointed out that information and reference services are among the most important services provided by the libraries and described the paradigm of information and reference services in digital libraries. He suggested a three-level system of providing services in order to support the needs of the users. In this system, the first level included the needs and expectations of almost all of the users. The second level included the needs of some of the users and groups with similar interests such as bachelor students, research employees, or engineering post graduate students and the third level included personal needs (specific questions). He also investigated the role of librarians in each of these three levels.[7]

Pomerantz in his study identified two possible types of digital libraries including digital services provided by physical libraries and services provided by digital libraries. He stated that regardless of the environments in which the services are provided, they can be categorized into two categories of technical (categorizing, organization, protection, and storage) and public (other library service). He finished his article with a wholesome theory regarding library services and stated that for all of the library services, the concept of worth is central regardless of the environments the services are provided in or the people that make use of them.[4]

The current study is based on the categorization by Mohammadifard and aims to answer questions such as: what services were provided by the examined libraries in these four categories (digital, classic, public, and others)? What is the

situation of Iranian National Medical Library in providing services in these four categories? And, which library provided the most services in these four categories? In order to answer these questions, the services provided by Iranian National Medical Library in these categories were compared to the services provided by 33 selected digital libraries worldwide and the results are used to identify the services provided by Iranian National Medical Library and its strengths and weaknesses and also to evaluate Iranian National Medical Library's success in providing library services in a digital environment.

MATERIALS AND METHODS

This is an applied study conducted using descriptive – survey method. The statistical population included 33 digital libraries worldwide selected by using the key word "Digital Library" in Google search engine between October and December 2008, which provided active library services at the time of this study. This libraries were Strathclyde Glasgow, Perseus, California Digital Library, Classic History of Psychology, International Society for the History of Islamic Medicine, National Library of Medicine, Annette and Irwin Eskind Biomedical Library, Welch Medical Library, Philadelphia Historical Medical Library, Christian Medical College Vellore, Dodd Memorial Library, Count way Library of Medicine, BIODIDAC, Digital Library for Information Science Technology (DLIST), Berkeley Digital Library, INFOMINE, WEB BOOK LIBRARY, Models, library of Texas University, ITT Tech Virtual Library, New York Online Virtual Electronic Library, Electronic Library for Minnesota, Digital Library Center, Florida Electronic Library, California Digital Library, National Digital Library of Finland, Penn Libraries, Stanford Digital Libraries Technologies, Medicine Manuscript Collections at NLM, National Digital Library, California University and Tele-medical, Medical Library. The sampling was done using census method. Data-gathering tool was direct access to the websites of these libraries and Excel software was used for data analysis.

Findings
The findings of this study are provided based on the questions answered. First, the type of the services provided by the digital libraries were identified and compared to that of Iranian National Medical Library.

Table 1 shows that more than half of the libraries provided three services of browse, search, and electronic information retrieval in their digital section. However, information protection management services such as Credibility evaluation and Increasing Credibility were available in a small number of libraries. Services marked by * are those available in Iranian National Medical Library. It is evident that this library only lacks services for Increasing Credibility in its digital section which is unavailable in other libraries as well. In general, a comparison to 33 digital libraries investigated shows that Iranian National Medical Library provides more services.

Table 1: Frequency distribution and frequency percent of the services provided in four categories in selected digital libraries and the overall rank of each category				
Service category	Services provided	Frequency	Percent	Overall rank (%)
Digital	Browse*	29	87.87	1 (39.39)
	Search*	28	84.84	
	Electronic information retrieval*	19	57.57	
	Ordering documents*	9	27.27	
	Stored search results*	7	21.21	
	System login*	7	21.21	
	Credibility evaluation*	3	9.09	
	Increasing credibility	-	-	
Classic	Interlibrary loan*	9	27.27	4 (11.78)
	Browse service*	6	18.18	
	Searching in classic resources	5	15.15	
	Reservation	4	12.12	
	Loan	4	12.12	
	System login*	4	12.12	
	Credibility evaluation*	3	9.09	
	Increasing Credibility	-	-	
	Extension	-	-	
Public	Help*	16	48.48	2 (21.76)
	Website search	12	36.36	
	Library news*	11	33.33	
	Contacting the system*	11	33.33	
	FAQ*	7	21.21	
	Site map	6	18.18	
	Internet Search	5	15.15	
	Publications*	4	12.12	
	Repots services	3	9.09	
	Reading room	2	6.06	
	Exhibitions	2	6.06	
Other	Providing Bibliographic information*	16	48.48	3 (14.71)
	Full text access	10	30.30	
	Partial full text access*	9	27.27	
	Quick links	6	18.18	
	Routine information services*	5	15.15	
	Searching in other libraries and lists	4	12.12	
	About the library	3	9.09	
	Conference room	3	9.09	
	Computer lab	2	6.06	
	Opinion forums	2	6.06	
	Ability to share resources*	2	6.06	
	Other language platforms	2	6.06	
	Special collections	2	6.06	
	Wireless internet	2	6.06	

FAQ: Frequently asked question, *: Services marked by *are those available in Iranian National Medical Library.

In classic services category, interlibrary loan, browse service, and searching in classic resources were the three most frequent services which were available in 9, 6, and 5 of the investigated libraries, respectively. The next ranks belonged to Reservation, loan, and system login services which were available in 4 libraries and Credibility evaluation service which was available in 3 libraries. Increasing Credibility and extension service weren't available in any of the libraries investigated. As it can be seen in Table 1, only interlibrary loan, system login, credibility evaluation, and browse services are available in classic services category in the Iranian National Medical Library (options marked with *). Therefore, it seems that the Iranian National Medical Library has fewer features in classic services category.

Among public services available in the digital libraries investigated, help service was the most frequent and was available in 16 libraries (48.48%). The least frequent services were exhibitions and reading room services which were available only in 2 of the 33 libraries investigated (6.06%). Table. shows that the Iranian National Medical Library has 5 of the 11 services available in this category including Contacting the system, FAQ, help, library news, and publication services (marked with *). This means that the Iranian National Medical Library has less than half of the services available in this category and has fewer features compared to other libraries.

Among other services available in digital libraries, Providing Bibliographic information was the most frequent (48.48%). The least frequent services include learning services for adults, access to library catalog, postal catalog, access to resources outside the campus, guest access, document delivery, facilities for disabled individuals, personal space, questioning the librarian, ability to transfer resources to personal libraries, Request for comments, research assistance, management archive and documents, my digital library, open access, and question archive with each being available only in one library. In this category, frequent services such as Providing Bibliographic information, Partial full text access, Routine information services, and Ability to share resources are available in the Iranian National Medical Library. Also, this library has services such as my digital library, related links, codified regulations library, publication room, news about seminars, etc., In general, one can say that Iranian National Medical Library has good features in other library services category.

In order to be better familiarized with the most important services available in investigated libraries, the total percent of the services available in each category was calculated against total number of available services (total category rank). The calculated ranks showed that digital service category was the most important category with public service category, other services category and classic services category being the second to fourth important category respectively. One possible reason behind the diminished importance of classic services such as reservation, loan, extension, etc., is that due to the special environment of digital libraries, these services are less useful.

Next, digital libraries with most available services in each of the four categories are identified. Due to the large number of the libraries, only those with high frequency are available in tables.

Table 2 shows that Medical Library, Christian Medical College Vellore - Dodd Memorial Library and Count Way Medical Library had the most available services in the digital services category. After these three, Biodidac, WEB BOOK LIBRARY, Annette and Irwin Eskind Biomedical Library, International Society for the History of Islamic Medicine and Stanford Digital Library had the most available digital services. Due to the large number of libraries, only those that had at least 50% of the services are listed in the table.

Table 3 shows that Library of University of California by having 4 of the 9 available services in this category and Upenn Libraries, Florida State University Libraries and Digital Library of Information Science and Technology (DLIST) by having 3 of the 9 available services have the most number of classic services available. Therefore, these libraries had more classic services available compared to other investigated libraries.

Table 4 shows that among 33 investigated libraries, Finland national electronic library had the highest number of available public services (63.63%) and a number of libraries such as Annette and Irwin, Tele-Medical, National digital Library, Manuscript Collections at NLM, and Stanford Digital Libraries Technologies didn't have any public services.

DISCUSSION AND CONCLUSION

The results of this study show that the investigated digital libraries worldwide tend to have similar services in digital, classic, public, and other services categories. Also, it seems that some of the differences in the services provided are due to different environments and different needs of the users. Pomerantz[4] stated that the concept of value for library services has a central role regardless of the environment in which the services are provided or their users and that the most important factor about the services provided by a digital or physical library is their value based on the environment.

Iranian National Medical Library has features such as codified library regulations, user-friendly interface, the ability of basic, advanced and integrated search, necessary platforms for advice and guidance services of experienced librarians, and organizing courses in databases and information sources. Compared to the 33 digital libraries investigated worldwide, the Iranian National Medical Library has a suitable number of available services. These results are against the results reported by Yaminfiroz and MohammadiFirozjaei[3] who reported that the services and resources provided by the Iranian National Medical Library have no similarities with the concepts of national or digital libraries. However, one needs to take note that the current

Table 2: Frequency distribution and percent of the libraries with most available services in digital services category

Library	Frequency	Percent
Medical Library (http://www.med.yale.edu/library/find/digital.html)	5	62.5
Christian Medical College Vellore, Dodd Memorial Library (http://dodd.cmcvellore.ac.in/)	5	62.5
Count way Medical Library (https://www.countway.harvard.edu/)	5	62.5
Biodidac (http://biodidac.bio.uottawa.ca/)	4	50
Web books (http://web-books.com/)	4	50
The Annette and Irwin Eskind Biomedical Library (http://www.mc.vanderbilt.edu/diglib)	4	50
International society for history of Islamic Medicine (http://www.ishim.net/)	4	50
Stanford Digital Library (http://diglib.stanford.edu: 8091/)	4	50

Table 3: Frequency distribution and percent of the libraries with most available services in classic services category

Library	Frequency	Percent
Library of University of California (http://www.cdlib.org)	4	40
Upenn Libraries (http://www.digital.library.upenn.edu/)	3	30
Florida State University Libraries (http://www.lib.fsu.edu/dlmc/dlc/index)	3	30
Digital Library of Information Science and Technology (http://dlharvest.sir.arizona.edu/8rizona/handle/10150/105066)	3	30

Table 4: Frequency distribution and percent of the libraries with most available services in public services category

Library	Frequency	Percent
Finland National Electronic Library http://gez.sub.uni-goettingen.de/tecup/finelib.htm	7	63.63
Count way Medical Library (https://www.countway.harvard.edu/index.html)	5	45.45
Texas University Library (http://www.tsl.state.tx.us)	5	45.45
Medical Library (http://www.med.yale.edu/library/find/digital.html)	5	45.45
National Science Digital Library (http://www.nsdl.org/)	5	45.45
Electronic Library of Minnesota (http://www.elm4you.org)	5	45.45
Christian Medical College Vellore, Dodd Memorial Library (http://dodd.cmcvellore.ac.in/)	4	36.36
Library of University of California (http://www.library.ucsf.edu/)	4	36.36
Upenn Libraries (http://www.digital.library.upenn.edu/)	4	36.36
California Digital Library (http://www.cdlib.org)	4	36.36
Florida State University Libraries (http://www.flelibrary.org)	4	36.36

study is based on the categorization by Mohammadifard[8] who divided the services provided by digital libraries into four categories of digital, classic, public, and other services. It is however possible to achieve different results, even results similar to that of Yaminfiroz and MohammadiFirozjaei[3] by using other classifications like the one provided by Parida,[1] which categorizes the different aspects of the development of digital libraries and different types of reference services available in digital environment into five categories of personalized services, information and web-based services, search engine services, digital library reference services for public and academic users, and inter-digital library collaborations, or the one provided by Pomerantz[4] which divides the services provided by digital libraries into two categories of technical (categorizing, organization, protection, and storage) and public (other library service) regardless of their environment. However, the results of this study showed that Iranian National Medical Library has been somewhat successful in providing library services in digital environment and needs to identify the services which are valuable to its users by identifying the users' needs and special characteristics of its environment.

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