

**EVALUATION DIGITAL LIBRARY SERVICES DURING COVID-19 PANDEMIC:  
USING USERS' EXPERIENCES IN ACADEMIC INSTITUTION, JORDAN**

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**ABSTRACT:** *The purpose of this study was to evaluate the level of perception of university students of electronic library services as well as the extent of integration of the elements of electronic libraries into the services of classic and digital academic libraries. The qualitative approach to data collection has been employed by using four focus groups from 10 Public Universities summing up to a total of 40 graduate students using (Microsoft Teams). This approach revealed the level of perception of students of the digital content and services. The results indicated that users' reactions were very good, and accessing databases through the Internet was the most perceived aspect. One of the implications for academic digital libraries is what is related to provision of digital content and services in Internet environment. Recommendations of users is demanding for more help through the Internet for search for information; improving their skills for accessing full texts of this information; provision of better guidance and directions.*

**KEYWORDS:** digital library, academic library, internet services, databases, Jordan.

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## INTRODUCTION

The traditional libraries without many digital services are having the challenge of keeping their services active for their users virtually during recent Covid-19 pandemic. The academic libraries with digitally must attempt to measure quality and efficiency of the services which they provide and the extent of adapting them to the standards governing higher education institutions, locally and internationally, besides justifying the financial investments expended by those institutions, and users' have been engaging in new work practices in order to achieve such objectives from their home. and responding to changes introduced by the digital information revolution. The technological advancement changed the roles of libraries and the way how they work, but never why to do so, as in the scenarios of academic libraries the role of digital libraries expanded from a mere means of providing a set of digital entities that people can access via their desktops to a means of providing innovative digital services in an Internet environment.

Digital library content is not limited to documents or text; but can include any object that can be reproduced in a digital form. Several Studies indicated that the services of digital library can include accessing databases that have been purchased or subscribed to, marketing databases, electronic Master's and Doctoral theses, text, images, audio, video or computer programs. It has been argued that the effectiveness of digital libraries depends upon the representation and rendering of digital content (Henderson, 2005; Urs, 2001).

There were great efforts in developing the digital libraries and there is a need to specify strategies for evaluation of digital libraries which can lead to a varied set of data related to efficiency, efficacy, and quality of digital libraries. One must observe the changes in the information environment and realize that a new dynasty of users' is developing and that these users' are self-satisfied as they do not see the library as a center for the information environment pertaining to them but they rely on the Internet and the Internet to obtain the information and be satisfied with it. This access to library content in a way that is not confined by either space or time is a critical advantage for digital libraries when compared to more traditional forms of library service. It also means that digital library services have a constant global presence, and that users in developing countries may be in a position to take advantage of their rich offerings of scholarly and other content. However, few libraries took the challenge seriously and made steps to formulate effective strategies to face these challenges and developments during COVID-19 pandemic (Bawden & Vilar, 2006; Chinn & Fairlie, 2007).

Availability of the digital resources is not enough if not integrated with the other supplementary services that support the activities which take place during the process of search for information. All this brought to notice the question of how does the pandemic affect digital libraries and their users in academic libraries?. Even the most knowledgeable and experienced library specialists can not predict needs and expectations of users. Consequently, it is highly necessary for us to know what are the responsibilities of users now and in the future? so as to evaluate the role and effectiveness of digital libraries. Within this context, this study is part of the ongoing research to set a methodology to evaluate quality of digital library services in general and the academic libraries in particular. At this initial stage, the focus group discussions approach is applied to draw ideas about pandemic make digital libraries look different now and, in the future, especially graduate students, evaluate digital library services.

## **LITERATURE REVIEW**

The available literature with academic libraries having already met most of their users' expectations for access to digital library content via the Internet. Most of the studies focused on the aspects of design, architectural engineering, and the role of digital libraries in academic contexts not only includes providing services such as web-based catalogs, full-text e-journals, and reference services. There is overlap in the definitions of digital libraries which are defined as those points which collect resources drawn from the Internet instead of providing, and relying on, with complexity of this 'new' form of library when noted that 'a digital library is a service; architecture; a set of information resources, databases of texts, numbers, graphics, sound, video, etc. From this perspective and implications that the digital library as is known regarding the range and nature of collections which it possesses relative to available information on the internet with open access library' characteristics facilitating serendipitous discovery of information', and which can be known through its services through the Internet. (Borgman, 1999; Borgman, 2003; Francisco-Revilla et al., 2001; Greenstein, 2000; Bhattacharya, 2004; Jeng, 2005).

A number of studies discussed the roles of digital libraries in provision of services and indicated that digital libraries are a mix, or combination, of resources in versatile forms,

including the services and people who support the information's whole life cycle. Most often it is referred to as electronic, or virtual, or digital library. These libraries have numerous definitions and varied explanations. Besides, some studies indicated that reference services in digital libraries and their availability in addition to the digital resources is not enough if not complemented with supplementary activities that take place during the search for information, especially during COVID-19; although, recent studies noted that content is increasingly originating from regions such as South America, India, the Pacific Region or the Arab World, because these regions have produced enough technology-literate individuals to pioneer language-appropriate content (Borgman & Rice, 1992; McMillan, 2000; 9.Chodorow, 2003; Choi, 2006; Chinn & Fairlie, 2007).

Most of the studies performed on the digital libraries during the past decade concentrated on design and evaluation of use of the main, or home, pages of these libraries. In his review of the literature, Bertot (2004) demonstrated that research in the field of digital library services concentrates on four main domains:

- 1- Outputs evaluation,
- 2- Performance evaluation,
- 3- Service quality, and
- 4- Results evaluation.

United States academic users have also reported that they use full-text e-journals and online databases more frequently than other forms of networked information provided by their library (Heterick 2002), including exam papers, abstracts of university theses, university publications, and public lectures, international electronic databases, and some forms of electronic reference services. Kaur (2006) reported that access content and function of public and private university libraries on the Internet in Malaysia for purposes of study and research when the researcher examined the use of Internet based electronic resources by users. The findings also indicated that accessing the international databases, e-journals, e-books, and local digital content on the Internet. Likewise, according to Ramzan (2004), the national networking system enables resource sharing among libraries and provides access to different databases through the Internet. Another study focused on the same subject in Israel Bar-Ilan, conducted by Peritz & Wolman (2003) indicated that the majority of the users were use web-based databases and e-journals. In addition, studies investigated the use of the Internet and library services and their applications in an academic or research environment in Australia. The survey charted the heavy use of various Internet based content and services in addition to those specifically sourced from the University's library. Respondents reported positive outcomes from their use of digital library services in terms of their research productivity (Genoni, Merrick & Willson, 2006).

However, the role of digital libraries during COVID-19 pandemic in the age of digital knowledge has changed, and in the future requires greater effort with increased acquisition of new skills for users in order to effectively use ICTs in order to improve the resources and services to meet the needs of them.

### **Research Questions and objectives**

The impetus for conducting this study was search for an answer to a single question and three objectives:

1. How does the pandemic affect digital libraries and their users' needs?

So as to help in setting research methodologies that are capable of providing data that is related to this research question, the study put three objectives:

1- Measuring the extent to which sources of digital information are available in the Jordanian universities.

2- Understand the challenges that the COVID-19 pandemic has posed to digital libraries and users and how they are responding to these challenges.

3- Evaluating the digital services and activities that librarians are conducting from their home offices to keep their libraries alive and support their users.

### **Study Significance**

There is a limited number of published studies during COVID-19 pandemic that deal with the ability of collections and digital library services to sustainable the teaching process and scientific research. Therefore, results of this study will establish the basic important information as regards the sources of digital information through people experienced in graduate studies in the Jordanian universities and will help in cooperation between librarians, academics, and public decision makers as it intends after COVID-19 pandemic to develop Jordanian libraries and the research infrastructure. Importance of this study stems from generation of a work that aims at improving the position and efficiency of digital libraries in general in Jordan. This requires the government to prepare the ideal policy settings to present a well-planned library and a high-quality research infrastructure.

### **RESEARCH METHODOLOGY**

A preliminary investigation of university libraries has been performed on the Internet in order to identify the universities which offer digital services during COVID-19 pandemic or which point that they offer their services with reliance on the Internet. This study is qualitative in nature and it employs the focus group discussions methodology. The purpose from using the focus group discussions methodology is to know more about graduate student perceptions and experiences which they possess for obtaining services of the available academic digital libraries through the Internet, especially during COVID-19 pandemic. four groups totally 40 participant students have been determined and discussions were held over four days (during holiday of COVID-19 pandemic, April 2020). The participants have been selected by passing "Microsoft Teams" invitation to varied faculties in four universities that subscribe to the databases under the umbrella of the Excellence Center in the Yarmouk University. The session of discussion with each group lasted from 30-50 min. and was video recording on Microsoft streams.

### **DISCUSSION OF RESULTS**

Participants were asked to describe the extent to which they are acquainted with services of digital libraries in terms of level of accessing these services and the time (during holiday of COVID-19 pandemic) in which they can access them as well as to indicate their worthwhile experiences or the difficulties which may be totally recognized or perceived about these services. Generally, the participants indicated the Internet provided many benefits related to their research, the majority of graduate students agreed on that they use services of digital libraries and repeatedly for the purpose of preparing the tasks they are assigned, besides

searching for literature and subjects related to their research activities. The results pointed out that the most common use was the databases including e-journals which are made available through the Internet, and the electronic books. They indicated that they access these services from their homes, especially late in the night due to overload on the internet network. They utilize the digital library services using the library, either using desktops, laptops, smart devices or their personal computers. The participants were asked to evaluate the extent to which sources of digital information are available in the Jordanian universities.

Some examples of users' responses are:

1. *"Not to bad, in the first time and it turned out that databases are available on the Internet, nowadays no researcher can do research without the Internet".*
2. *"during holiday of COVID-19 pandemic, I realized their importance through the librarian connect to digital databases around the world and I can download the most recent articles in the field of Business Administration! It was really surprising and I told my colleagues".*
3. *"I think the main factor is the people themselves, if the person is motivated and concerned to find a hot topic, I can get the full text ... and I can do this from home ..... So, digital library services are very useful".*

The participants were encouraged to direct their thoughts, perceptions, and the level of their recognition of performance of digital library services after reviewing texts. A number of major issues emerged and will be discussed under the following categories:

- 1- Understand the challenges that the COVID-19 pandemic has posed to digital libraries and users and how they are responding to these challenges.
- 2- Evaluating the digital services and activities that libraries are conducting and offer from their home offices to keep their libraries alive and support their users.
- 3- Results and outputs of using the digital library services and their effects on development of science, scientific research, and the country.

### **Understand the challenges that the COVID-19 pandemic has posed to digital libraries and users and how they are responding to these challenges.**

One of the main issues discussed by all respondent categories was the challenges that the COVID-19 pandemic has posed to digital libraries. It was easy to access the Internet page which contains these digital services but it is a source of principal worryment though the library used to provide remote accessibility and the ability to access services anytime on 24/7/360 basis. In so far as problems were perceived, most of the participants underlined the troubles they face in entering the system of digital library. The problems sometimes seem to know which kind of information you take or not. Some others require the users to know a set of different user names and passwords for each resource they want to access through the Internet from home. Subscribing to databases or to the institution's resource database may be digital. In consequence, while also noting that challenged face digital library during holiday of COVID-19 pandemic in Jordan continued to lag behind is thus for easy and quick access. Besides issues related to possibility of access, the users have also to add some notes at the Internet browser in that all links must be updated and operating. Appreciable number of the sample students pointed out to this.

- *“I think the Internet is the most advanced method to get information and to share information with other academic personnel, so; if you get any information from [the] Internet you have to select carefully before you rely on them”.*
- *“The Internet is a major factor in the academic environment in general. very rich resource with regard to information and I can use the Internet to find many websites that are very useful to students”.*

### **Evaluating the digital services and activities that libraries are conducting and offer from their home offices to keep their libraries alive and support their users.**

Some participants were started the talk by raising the issue of ease of search. Mainly, they pointed to two of the issues of concern here: One participant noted that he was ‘proud’ of the improved infrastructure in Jordan, and another participant from focus group stressed the difference in research culture and productivity between users as being critical. He indicated that the digital services are important as it helps to overcome this difference by providing access to quality research information. Many of the users prefer to get the information sources arranged according to the research fields or subject discipline. One of the advantages which the users declared was *“get the information and the knowledge and the grey material in a short time and at a fast speed in order to accelerate the efforts of scientific research”* equally from the technical aspect or for search in resources, though some libraries provide instant instructions for searching for databases, *“In regard the effective use of the digital library through the Internet, one of the main aspect is infrastructure”*. The most common type of help was in the form of ‘pdf’ files provided by producers of the databases, *“must have permission to use the University network from home”*. Most of the users’ indicated that there are some restrictions posed by database providers on the Internet with respect to understanding of the English language was an essential skill to ensure that searches were both effective and fruitful, *“to develop their English language skills, you know, to search better databases”*. Nonetheless, they hope that the linked the availability of databases to the need to promote their availability and provide adequate training in their use.

The participants also highlighted that besides providing digital information sources, it is very important for libraries to support good communication channels with users. The participants look forward to that the library plays its role in terms of informing them about what it has and keeping in touch with them and with what is recent about changes in, and modifications to, digital library services. Many of the participants in the focus group discussions were unaware of the way how to receive of scholarly documents digitally through the Internet. This is attributed to evident deficiency in workshops, which gave very negative view of librarians and of their role, *“We have to motivate people to find something unique, something [so] they can get benefit from this kind of research”*. participants were also asked to suggest possible ways their libraries could help academic institutions users, *“If you go back to our library you will find so many periodicals, so many databases and subscriptions”*. They suggested their need for library’s support by establishing support office and 24 hr. to focus on providing more or better information sources, *“Our library can do so many things, implementing an integrated library system where faculty members can use inter library loans, to facilitate service and keep faculty members advised of any new information”*.

### **Results and outputs of using the digital library services and their effects on development of science, scientific research, and the country.**

The library became the decisive element in universities because it encapsulates the published information for helping in production of knowledge. The relation between library, information, knowledge, and university too became close and these elements compliment one the other. In the university, the three participants whose responses have been included gave very clearly focused and quite different responses to the question of how libraries might assist in and their effects on development of science, scientific research, and the country. One of them focused on the need for libraries in the region to cooperate in forming buying consortia in order to acquire the necessary scholarly content—in the form of databases of full text journals, *“For many reasons, it is some kind of resources sharing to make cost reductions, especially subscription cost, with making a connection or network between universities libraries in Arab Countries and developed countries could help”*. This activity of notification means that there is research and education process that has been realized. Information becomes knowledge when it is exposed in the learning process, that is, transfer of knowledge which is related to a certain fact and is concerned about the subject or event. Lastly, information in its physical form exists that express material forms, for example, things like books, and encyclopedia. Information in its physical form is what the library acquires and makes available to help instructors, students, and researchers to construct new knowledge. A second participant indicated to digitising the content and provide international scholarly databases that was essential to Arabic scholarship, *“so if you have the money you can just buy the material, So it’s our task here to provide this material in a digital format for our staff members and students”*. The libraries played pivotal role in the educational institutions in supporting teaching programs in a good way throughout the history of universities. The relationship between the good teaching programs and the good library collections was always critical. A third participant focused on distinguishing between the main categories of users being served by academic libraries; the teaching and learning users, and the researchers, *“They should start by establishing what I can say to go and build a good collection for students and learning purposes or teaching purposes, So are information sources and information databases for research purposes, for researchers”*.

## STUDY RESULTS

The study results were built on the development of digital libraries (during holiday of COVID-19 pandemic) in the developed countries and on the role which these libraries play in developing the educational process and scientific research. The results are presented in the following our paragraphs.

The innovative nature of this research is important. Using this method of presenting results comes to achieve the maximum benefit from similar types of university libraries in the developed countries which represent rapid growth and development in this field as a control element in this study as it offers a number of ideas which enable the Jordanian university libraries to know if services of its digital libraries satisfy users’ needs in such a way as to achieve their real potentials to support teaching and scientific research, which are considered as the cornerstone in development at all levels. The reference to ‘databases’ in this study is also telling—a reminder that far from all digital content is available from free Internet websites and responses regarding digital libraries were also positive, these include access to plentiful, up-to-date information; the savings in terms of time and effort this produces; and also the flow on benefits in terms of enhanced research productivity. Despite the advances

that have apparently been made, the issue of the need for increased access to databases subscription.

Some of the features which the developed libraries enjoy include better funding than our libraries in terms of infrastructure, including the fast broadband Internet speeds, the growing subscriptions to electronic resources, search for the exchange process, mutual access to other rich libraries in developed countries, and the many users who possess personal computers which allow them the ability for direct access to the Internet in their homes and in university campus. In spite of these circumstances and technological developments in developed countries, these universities still confer high value to local material collections. The Jordanian universities may learn from this and commit themselves to pay balanced attention to each of the material and digital resources in their libraries. For example, these libraries may concentrate, and lay high weight, on the marketing process, especially (during holiday of COVID-19 pandemic) with the establishment of the Excellence Center, and inviting private universities to become partner in this.

The Jordanian universities may consider establishment of advanced Internet page that meets all needs of users. In this case, they have to provide users with access to the electronic indexes of other Arab and international institutions, besides electronic access to local databases such as the database collections of Arab and international electronic theses. Besides linking the users with electronic indexes of other institutions, the universities in developed countries made many of the other electronic resources available on their own Internet pages. The information available on the Internet pages of Jordanian university libraries suffer from obvious weakness in satisfying users' needs.

Developed libraries also allow for students and staff to choose and specify the material which needs to be gathered in the indexing department considering that it has the priority to be managed and made available to users' as soon as possible. This is evident from that recordings of these materials are available in the electronic index. academic library services in Jordan, as key player in the implementation of high-quality information services that are crucial to successful research and learning outcomes, can potentially play in supporting research needs.

### **Study Recommendations**

The purchase power for books and databases stumbled in the Jordanian universities because of declining budget in the recent years. Therefore, the universities have to move towards cooperation with the private libraries as a first step to reduce the financial pressure and provide what the users' need, and to move towards cooperation with universities of Arab country universities in the second step to achieve the maximum benefit and satisfy users' needs of all types and forms of information resources, be them local or international.

As noted above, to achieve benefit from the COVID-19 pandemic, the Jordanian universities have to improve the speed of internet. It will be decisive for the Jordanian universities if they move toward digital library services. The Jordanian universities have to publish their electronic guide on the Internet, which will lead to attracting and boosting the number of users'. There is need to enhance digital services, that needs to be provided for the external users. Some of these users are members of the Jordanian universities community who conduct

research in other parts of the world. Libraries must move towards adoption of the service of offering attachments to the material which is added to libraries through e-mail and updating them continuously for all users' and for the community as a whole. There is evidence that digitisation has already delivered benefits in terms of access to information and knowledge, the conclusion of this study is that digital libraries need to be active leaders and participants in the process.

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