

*



Obstacles to using electronic research among graduate students amid COVID-19: Graduate students' perspective

Othman Naser Mansour*, Middle East University, Faculty of Educational Science, Airport Street, Amman, Jordan.
<https://orcid.org/0000-0003-4469-932X>

Suggested Citation:

Mansour, O. N. (2020). Obstacles to using electronic research among graduate students amid COVID-19: Graduate students' perspective. *Cypriot Journal of Educational Science*. 17(11), 4199-4214.
<https://doi.org/10.18844/cjes.v17i11.8082>

Received from July 26, 2022; revised from October 11, 2022; accepted from November 24, 2022.

©2022 by the authors. Licensee Birlesik Dunya Yenilik Arastirma ve Yayıncılık Merkezi, North Nicosia, Cyprus. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

Abstract

The current study aims to reveal the obstacles faced by postgraduate students when using electronic research amid the COVID-19 pandemic. Achieving the study objectives necessitates the use of the descriptive survey approach. The study instruments consist of a questionnaire with a sample of 132 male and female graduate students and a personal interview applied to 10 graduate students. The findings indicate that the degree of obstacles faced by postgraduate students has ranged from low to medium. The most prominent obstacles are the absence of a guideline explaining the steps of electronic research; the Internet networks' slow speed and the continuous interruption of communication, along with the high cost of knowledge sources, such as periodicals and books; the lack of experience and weak research skills among students; the financial cost of subscribing to Internet and purchasing e-books; and the lack of training workshops required to search the Internet.

Keywords: COVID-19; educational sciences; electronic research; graduate students; Obstacles

* ADDRESS FOR CORRESPONDENCE: Othman Naser Mansour, Middle East University, Faculty of Educational Science, Amman, Jordan
E-mail address: omansour@meu.edu.jo

1. Introduction

The speedy developments in the world of technology have cast their shadows on society in all its spectrums and in all sectors. The stable and increasing growth in using the Internet impacts the behaviour of researchers in searching for information and guides them to the best and easiest way to access the required information. On the one hand, with the advent of the COVID-19 crisis, the falling of most states of the world into a deep slumber, and the disruption of all life facilities, including schools and universities, for many months, the need is on the rise to search for alternative sources that students resort to obtaining the necessary information to follow the progress of their studies. On the other hand, they continue to write research and scientific theses and dissertations. Against this, students, in general, and graduate students, in particular, find themselves facing a new reality that they shall deal with by surfing the Internet and making use of the available electronic resources.

The Internet is the world's library and involves many repositories of data of all shapes and sizes. The Internet is now a target for academics of various research directions, enabling them to obtain sources of information in various types of audiovisual and textual media, as there is a huge amount of information on the Internet distributed in the form of webpages that have rapidly grown. For scholars and researchers to benefit from the information available on the Internet, it is necessary to be familiar with those research instruments that organise the Internet and facilitate access to the information available on it (Al-Bassiouni & Rajeh, 2009).

Institutions of higher education play a well-designed and efficient role in the domain of scientific research and electronic research. The university also has a prominent role in scientific research, thanks to the institutional climate in which the necessary scientific data are available, such as the availability of researchers, faculty members and graduate students, along with the research supplies, i.e., libraries, laboratories and periodicals. However, most educational institutions, including universities, are not sufficiently and comfortably prepared to provide a subscription to networks, databases and digital libraries in a way that would enable students to obtain what they need from studies, research, theses and articles in the best way.

Universities' lack of readiness represents an unprecedented obstacle and challenge for students, characterised by their weak use of databases and digital libraries, their lack of skills and knowledge and the difficulty of accessing them at times as they require special subscriptions, which results in the payment of sums of money not available to many graduate students. Therefore, the function of the university is incomplete or inadequate unless it has effective postgraduate programmes, where electronic research skills are practiced in several domains of knowledge (Hamza & Abdel-Aal, 2014).

Importantly, the findings of some studies demonstrate that learners with Internet search skills use electronic information efficiently and that their academic level is better. A study by Willoughby et al. (2009) confirms that using the Internet contributes to improving the level of writing scientific articles written by students on the topic they research and have information about. Another study (Chen & Fu, 2009) shows that training second-grade learners to search the Internet has raised their level of test achievement.

At the Jordanian level, the Middle East University has paid great attention to scientific research in general and the Internet in particular. It is keen to expand its graduate programmes that keep pace with the requirements of the labour market. The university's interest lies in providing an electronic library for postgraduate students through which they subscribe to highly regarded international databases such as EBSCO, E-library and Scopus and Arab databases, such as Dar Mandumah and AskZad, and holding training to access these databases and networks to access studies and research easily and effortlessly (Al-Rabaya, 2014) to provide students with the required studies, research, references, theses, reports and conferences available online.

Yet, like other universities amid the COVID-19 pandemic, Middle East University has experienced many obstacles preventing students from doing electronic research. According to Al-Rabaya (2014), the obstacles facing graduate students at the University of Jordan are represented by their weak Internet and computer skills, the absence of permission to download research electronically

and the shortage of Arabic databases. Al-Shuaibi (2018) indicates that the most important obstacles to using the digital library are the lack of training on how to use it. In the same context, Al-Aklabi and Aref (2017) show that the most significant difficulties confronted by Internet users are the lack of resources in Arabic and the absence of full technical support for users. Another related study by Bernad et al. (2012) confirms the existence of many obstacles that prevent optimal use of the Internet, including non-acquisition of research skills as required, lack of sufficient time, lack of financial support, increased content on the Internet, the uncertainty of quality and poor relevance to the subject.

Accordingly, the current research includes 10 sections aside from the introductory section, i.e., Section 1 details the literature review. Section 1.2 looks at the problem statement. Sections 1.3 and 1.4 present the research questions and research objectives, respectively. Section 1.5 provides the significance of the study, while Section 1.6 presents the research terms and definitions. Section 1.7 provides the limitations of the study, while Section 2 presents the methods. Section 3 shows results and discussion and Section 4 presents a conclusion. In Section 5, the recommendations are given.

1.1. Theoretical framework and related research

The worth of using the Internet in education is reflected in obtaining information about curricula and topics of educational and academic development, summaries of university theses and synopses of scientific research through a database (ERIC). The Internet deals with all media, such as images, audio, maps, videos, graphics and shapes. Via the Internet, it is possible to exchange knowledge and communicate with others and help publish research and scientific writings, whether individually or collectively, which contributes to empowering students to follow up on their study materials and related activities from anywhere in the world and allowing students to publish their research through their participation on websites and online forums, as they serve as a free publishing house. The Internet supports the distance learning path; allows the possibility of following up the educational content at the appropriate place and time; and enables both the students and teachers to communicate synchronously and asynchronously, collectively or individually; the Internet also contributes to the appreciation of education. The Internet also contributes to the appreciation of education, as students select educational media and learning resources that help them achieve better learning, present content on the Internet in the form of multiple media that use sound, image, movement and text, taking into account the individual differences among students (Saada & Al-Sartawi, 2014).

Using the Internet in learning contributes to developing the processes of accessing the required information and data. The Internet is now a research tool on the part of students, teachers and researchers through the availability of services through which they can communicate with universities and research centres, access electronic libraries all the time, benefit from the services offered by the network and obtain information and data as available and required, along with providing the opportunity to participate in the dissemination of information. In this context, there are a variety of sources for obtaining information from the Internet.

- Electronic Library: 'It disseminates scientific information and references to the world for the benefit of graduate studies and researchers, making it easier for postgraduate students and researchers to move among electronic libraries to search for references and sources and access the library cabinets without leaving their seats in front of the computer' (Al-Far, 2012, p. 2).
- Electronic Periodicals: They are available on the Internet and are classified into two sections:
 - General Electronic Periodicals: They publish general articles and news on several topics.
 - Specialised Electronic Journals: They publish in-depth studies, research and articles on specific areas and topics, such as journals focused on educational sciences, business or other areas of science (Al-Nawaisah, 2011).
- Online Research Databases: These databases are divided into two parts:
 - Bibliographical Databases: They include data and summaries of information sources full of texts, such as ERIC database, specialised in educational information sources (Kandilji, 2008).

- Full-text Online Databases: 'This type provides the researcher with the final information on the subject of his research to exceed the levels of documentation and inventory to run a large amount of electronic texts alongside other means of carrying other information, such as the EBSCO, which focused on delivering and making journal articles available in full-text form through 35 databases in various areas of knowledge' (Al-Nawaisah, 2011, p. 3).

- E-book: It is a new method for presenting information, including texts, graphics, shapes, images, motion, sound effects and film clips, in the form of integrated book copies onto CDs (Al-Far, 2012, p. 4).

Al-Far (2012) emphasises the Internet's role in promoting electronic research skills by increasing the concept of conducting joint scientific research between researchers and university professors in various countries of the world. The role of the Internet lies in facilitating communication with colleagues in other universities and countries and exchanging information to conduct joint research; helping graduate students contact research supervisors to discuss the difficulties encountered in carrying out research operations; assisting researchers in exchanging research and scientific documents quickly and at low costs, alongside providing the possibility of written or telephone conversations between them. It is also added that during the COVID-19 pandemic and the interruption of direct means of meeting in universities between students and supervisors, supervisors resorted to meeting with their students and supervising them and their messages through simultaneous meetings through programmes (Zoom and Microsoft Teams), as well as through the use of social networking programmes such as WhatsApp.

Marwan (2016) maintains that despite the advantages provided by the Internet to researchers in the area of education during COVID-19, such as overcoming the problems of time and individual differences among students, there are some obstacles faced by students while searching through the Internet. These obstacles may be financial or human beings, along with many challenges represented in training on modern programmes and how to deal with them and providing appropriate software that keeps pace with developments in the educational domain, the rapid development of devices and the cost of the digital transition.

According to Al-Shbul and Alyan (2014), several obstacles prevent using the Internet among researchers and learners, including the economic factor, as the high financial cost of providing Internet services in some countries is one of the main obstacles for students to use the Internet in electronic researches; the technological challenge of training in the use of modern technologies; and the difficulty of keeping pace with the rapid development of computer programmes.

Al-Jarf (2017) indicates that several obstacles hinder the use of electronic research, represented by the lack of persuasion of some professors with electronic resources and their reluctance to use them or encourage students to adopt them; their belief in teaching and research methods based on paper research between books and scientific theses; and considering electronic resources as a burden on them, along with their other burdens. Many of them consider resorting to the Internet a waste of time because they are not aware of the available sources of information and ways to search for them; their reluctance to search online in their studies and research; the lack of technical and procedural support for many graduate students; and the fact that new tasks require them to make an extra effort. Many of them prefer traditional teaching methods depending on paper books and memorisation. Other reasons include the lack of necessary research and writing skills for students, as some of them have to practice pasting, copying and cheating from electronic information sources when preparing research and scientific reports that they are assigned, lack of support and reinforcement necessary for graduate students.

In the same mood, Melhem (2011) adds that there are many problems facing postgraduate students in dealing with electronic information sources, including the difficulty that postgraduate students face in referencing citations for electronic periodicals and journals, as some of them appear without the title of the journal, the identity of the researcher or the time of publication, especially in a world where a hard copy of the journal is available for reference. More importantly, this becomes more difficult by changing the (URL) of the journal on the web, which makes postgraduate students lose its impact and is difficult to track after a period of its issuance. Other obstacles rest in the lack of training on acquiring the ability to deal with the used electronic devices and software, the poor skill of retrieving the required

information, especially if the electronic information sources are devoid of clear evidence that helps students to use them correctly, along with the difficulty of browsing them on the part of the user, which makes their use without training sufficiently difficult and a waste of students' efforts and time.

In a related research paper, Khan et al. (2011) aim at investigating the duration of Internet use by Islamic University of Halopur students. Achieving the study objectives necessitates using the descriptive approach. The instrument is a questionnaire applied to a sample of 100 male and female students from the university. The findings indicate that students' attitudes toward the Internet are very positive. The findings also showed that students' use of the free database provided by the Higher Education Committee was not satisfactory. The results show the difficulties that students faced in accessing the required information, such as slow internet and insufficient computers, as this is represented by 66% of the students, who show their need for adequate training in using the Internet and electronic research skills.

Additionally, Oluwaseye and Abraham (2013) aim to recognise the difficulties related to the use of the digital library among university students in Nigeria. Achieving the study objectives necessitates the use of a descriptive approach. The study sample consists of 250 university students, and a questionnaire is used as the study instrument. The findings indicate that the level of students' use of the digital library is weak. The results also show that among the most prominent difficulties facing the digital library is the low level of students' awareness about the use of the digital library, the low motivation towards using it and the low level of computer skills among university students.

Moreover, Al-Rabaya (2014) aims to reveal the level of possession of electronic research obstacles to their use among graduate students at the School of Educational Sciences at the University of Jordan. Achieving the study objectives necessitates the descriptive approach. The study instrument used is a 47-item questionnaire applied to a sample of 270 male and female graduate students at the School of Educational Sciences at the University of Jordan, including 163 master's students and 107 doctoral students. The findings demonstrate that the level of postgraduate students' possession of electronic research skills is medium, while the most prominent obstacles facing postgraduate students in electronic research are represented by the weak possession of computer and Internet skills, the prevention of downloading research electronically and the lack of databases in Arabic.

Furthermore, a study by Al-Hajj (2015), with a 154-student sample of master's students at the Department of Sociology and Demography at the University of Ouargla in Algeria, aims to reveal the difficulties faced by students in using the Internet in research. Achieving the study objectives necessitates the use of the descriptive approach. Answering the study questions requires the use of observation and a questionnaire. The findings indicate that the most important difficulties that students face when using the Internet are difficulties related to technology (54%), demonstrating their lack of skills to search for data via the Internet, the absence of educational courses for using the Internet in scientific research and the shortage of sources and references in Arabic, which means the difficulty of dealing with foreign languages.

Likewise, Al-Ahmar's (2017) study aims to reveal the level of using the Internet by alumna students at the University of Tripoli in education and research, and the obstacles that prevent graduate students from using the Internet in research ideally. Achieving the study objectives requires the use of the descriptive analytical approach. The questionnaire is used as a study instrument for data collection and is applied to a study sample consisting of 257 male and female graduate students. The findings indicate that the students possess sufficient skills to use the Internet in research. The study also reveals that the most noticeable obstacles that limit the use of the Internet are the absence of a free computer services centre linked to the Internet, the slow downloading of pages on the Internet and the lack of educational websites for the university that follow the latest news and scientific activities.

Besides, Al-Aklabi and Aref's (2017) study aims to reveal the level of using electronic sources of information in the digital library by faculty members and graduate students in Saudi universities and the difficulties they face when using these sources. Achieving the study objectives necessitates the use of a descriptive approach. The questionnaire is used as the study instrument. The findings indicate that 70.8% of faculty members and graduate students use electronic information sources in the digital

library. The results also show that the most important obstacles faced by users of these sources are the lack of sufficient availability in the Arabic language and the absence of technical support for users.

On the other hand, Al-Shuaibi's (2018) study aims to identify the degree of using the digital library in Saudi Arabia among female educational diploma students, their attitudes towards it and the obstacles they face in using it. Achieving the study objectives necessitates the use of a descriptive approach. The questionnaire is used as the study instrument with a study sample of 159 female diploma students. The findings indicate that the level of diploma students' use of the digital library is weak. The findings also show that the obstacles to using the electronic library are represented in the discouragement of its use, the lack of computers connected to the Internet in the faculty and the absence of training on how to use the digital library.

A recent study conducted by Al-Ayed (2020) aims to recognise the level of using the digital libraries by postgraduate students at the Middle East University in Jordan. Achieving the study objectives necessitates the use of a descriptive approach. The questionnaire is used as the study instrument with a study sample of 206 male and female graduate students at the university. The findings indicate that using digital libraries by graduate students is of a higher degree. The results also show that the level of difficulties facing the use of digital libraries is medium. Besides, the findings demonstrate that the most prominent difficulties are represented in the lack of training programmes for students on the use of digital libraries, weak access to digital libraries outside the university library, lack of tendency to use electronic references, slow downloading of digital research pages and scarcity of electronic information sources in the Arabic language.

In contrast to the previous literature review, it is evident that the results of previous studies agree that there are many obstacles facing graduate students in research via the Internet to varying degrees, ranging from medium to high, and this is in agreement with the results of this study. Numerous researchers unanimously agree in their studies that the lack of training on the skills of using electronic resources in research, the absence of availability of sources and databases in the Arabic language, the shortage of skills to research for information on the Internet, the slow downloading of pages on the Internet, the poor financial capabilities and the lack of the necessary technical support when needed.

The researcher believes that the lack of training and the inexperience of many graduate students, the lack of guidance from the professors, the absence of a clear guide to guide them to the use of electronic research, with the students' weak desire to search and the difference in the language of the search for the mother tongue, are factors that weaken the achievement of the required benefit from the Internet on the desired face, contributes to accessing unhelpful and unreliable information and distracts students from the idea or information they are looking for.

1.2. Problem statement

The process of the traditional search among the shelves of libraries is no longer sufficient to meet the needs of researchers and graduate students alike, leading to an increase in the demand for using the Internet among university learners, especially electronic search. Through the researcher's work and experience in teaching and supervising graduate students, assigning them to work and homework, preparing reports and writing research and following up on the discussions of scientific and academic theses, it is noted that the reference to electronic databases is still weak, and that citing references available in electronic databases is little compared to traditional sources and references. This is confirmed by Al-Shawabkeh's (2010) research, demonstrating that citations to electronic sources in writing scientific theses are weak.

Al-Ayed's (2020) study emphasises the necessity of holding training workshops for postgraduate students on how to search in digital libraries. Other studies by Murugesan and Pandian (2012) and Rafi et al. (2019) also recommend the necessity of providing high-quality Internet networks for graduate students and researchers. However, Al-Jarf's (2017) study recommends the necessity of offering a course in electronic research within the requirements of the university for undergraduate and graduate students to meet their educational and research needs. Likewise, Al-Rabaya's (2014) study recommends merging electronic research skills with other courses for postgraduate students and the necessity of holding training courses for them to strengthen these skills.

In light of the previous recommendations and of the researcher's experience in this area, it can be said that postgraduate students have faced many difficulties in electronic research via the Internet. It is also noted that these difficulties had increased amid the COVID-19 pandemic, as experienced by the researcher while supervising the students and following them in writing theses during the pandemic. Importantly, the lack of studies conducted in this domain at the Jordanian level is another reason for conducting this study in an attempt to reveal the most prominent obstacles faced by postgraduate students at the School of Educational Sciences when using electronic research.

With that being said, based on the results of numerous studies dealing with the obstacles and difficulties that students face in scientific research in general and electronic research in particular, the problem statement lies in identifying the most prominent obstacles to the use of electronic research faced by alumna learners at the Faculty of Educational Sciences at the Middle East University amid COVID-19 pandemic from the students' standpoints.

1.3. Research question

Given the problem statement, the research question is:

What are the obstacles to using electronic research among graduate students at the Faculty of Educational Sciences amid the COVID-19 pandemic from their points of view?

1.4. Research objective

The study objectives are as follows:

to identify the obstacles to using electronic research among graduate students at the Faculty of Educational Sciences amid the COVID-19 pandemic from their points of view.

1.5. Significance of the study

The current work's significance is reflected in the importance of its subject, focusing on electronic research, which is a modern educational style that keeps pace with scientific and technical progress by integrating technology into academic courses. The significance of the study also lies in the fact that it shows the universities, centres and scientific institutes specialised in postgraduate students how to use the available information sources and databases, enabling the students to use them in their learning process and access the information they need during their academic career, which is finally reflected on their research skills and research and academic performance.

Moreover, the significance is highlighted in identifying the obstacles that limit the use of electronic research by graduate students at the Faculty of Educational Sciences at the Middle East University and the reasons for their reluctance to resort to information sources on the Internet. It is expected that the current article will formulate practical recommendations that can help overcome obstacles and difficulties facing students and show them how the obstacles they face in electronic research can be overcome.

1.6. Research terms and definitions

In this study, several terms are mentioned, and their procedural definitions are as follows:

Obstacles: The reasons that prevent postgraduate students from using electronic research and benefiting from electronic databases, whether they are physical, such as a lack of means, equipment, and materials or technical, such as the lack of websites and databases, and the weakness and unavailability of Internet networks.

Electronic research: It is the search carried out by graduate students using search engines, electronic indexes, general and specialised databases, theses, periodicals and other Internet sources to access the required information and data using specific search words that refer to the author, subject, title or any of the keywords.

Corona pandemic: 'It is the name given by the World Health Organisation to the virus that causes severe acute respiratory syndrome, known as the Coronavirus (COVID-19) recently declared by the World Health Organisation as a global pandemic' (WHO, 2019).

1.7. Limitations of the study

The current study includes these limitations:

1. **Human limitations:** They are a sample of graduate students at the Faculty of Educational Sciences.
2. **Spatial limitations:** They are reflected in the University of the Middle East in the Capital Governorate of Amman in Jordan.
3. **Temporal limitations:** They are represented by the first semester of the academic year 2021/2022.
4. **Objective limitations:** This study identifies the obstacles to electronic research among graduate students at the Faculty of Educational Sciences at the Middle East University amid the COVID-19 pandemic.

2. Method

2.1. The method of research

The nature of the study requires the adoption of the descriptive survey method, as it is the most suitable for this type of study.

2.2. Participants

The participants consist of 132 students who were randomly selected from postgraduate students at the Faculty of Educational Sciences at the Middle East University. Ten graduate students are selected from the study population who had agreed to be interviewed.

2.3. Data collection instruments

To achieve the study objectives related to identifying the obstacles to the use of electronic research among graduate students amid the COVID-19 pandemic, the studies and theoretical literature relevant to the area of study are reviewed. With that, exploring the nature of the obstacles facing postgraduate students requires developing a questionnaire. The open-ended interview instrument is also used with a group of graduate students and those not included among the respondents to the questionnaire and those agreeing to be interviewed.

The questionnaire, in its initial form, consisting of 25 items is validated by several scholars and specialists in the educational domain. The validators make their observations related to the items of the questionnaire by deleting, adding and modifying, and the items obtaining an approval rate of 80% or more are retained. Thus, the final form of the questionnaire includes 21 items. The 5-point Likert scale is adopted to respond to the questionnaire items as follows: very high, high, medium, weak and very weak and digitally represented as 5, 4, 3, 2 and 1, respectively.

2.4. Study tool validity and reliability

After ensuring the validity of the study instrument by the validators and the adoption of the questionnaire in its final form, the internal consistency of the questionnaire is ensured by applying it to an exploratory sample from outside the study sample. The correlation coefficient between the items of the questionnaire and the total value is also calculated. Table 1 illustrates this.

Table 1

The Correlation Coefficient Between the Items of the Questionnaire and the Total Value

Item no.	Reliability coefficient value (Cronbach's alpha)	Item no.	Reliability coefficient value (Cronbach's alpha)
----------	--	----------	--

1	0.38*	12	0.61**
2	0.43*	13	0.72**
3	0.47**	14	0.49**
4	0.49**	15	0.65**
5	0.43*	16	0.73**
6	0.43*	17	0.61**
7	0.44*	18	0.66**
8	0.68**	19	0.46*
9	0.41*	20	0.45*
10	0.64**	21	0.43*
11	0.65**	22	0.61**

* Statistically significant at the 0.05 significance level.

** Statistically significant at the 0.01 significance level.

As shown in Table 1, the values of the items' correlation coefficients with the total value have ranged between 0.38 and 0.73, which are statistically acceptable values and indicate that the questionnaire has an acceptable degree of validity. The reliability of the questionnaire is ensured by applying it to an exploratory sample from outside the study sample, as the reliability coefficient of the questionnaire is calculated using Cronbach's alpha. The value of the reliability coefficient of the entire questionnaire is 0.81, which is an acceptable and appropriate value indicating that the questionnaire has good reliability and can be applied to the study sample.

2.5. Data processing

Answering the research question necessitates the use of the following statistical methods: means, standard deviations, correlation coefficient and Cronbach's alpha formula. Besides, the following criterion is adopted to identify the responses of the study sample members to the questionnaire:

- The degree of obstacles with percentage ranging between 10% and 47% is weak.
- The degree of obstacles with percentage ranging between 47% and 73% is medium.
- The degree of obstacles with percentage ranging between 73% and 100% is high.

3. Results and discussion

3.1. Findings related to the research question

3.1.1. What are the obstacles to using electronic research among graduate students at the Faculty of Educational Sciences amid the COVID-19 pandemic from their points of view?

To answer this question, means, standard deviations, degrees and rank of the obstacles to the use of electronic research among graduate students at the Faculty of Educational Sciences amid the COVID-19 pandemic from their points of view are calculated. Table 2 illustrates this.

Table 2

Means, Standard Deviations, Degrees and Rank of the Obstacles to the Use of Electronic Research Among Graduate Students at the School of Educational Sciences From Their Points of View Arranged in Descending Order According to the Means

Item	Text of item	Mean	Standard deviation	Availability	Rank
------	--------------	------	--------------------	--------------	------

1	The absence of a guide explaining the steps for using electronic research.	3.61	1.077	Medium	1
3	The internet is slow and the connection is constantly interrupted.	3.24	1.126	Medium	2
11	The high cost of knowledge sources such as books, references and periodicals.	3.24	1.155	Medium	2
13	The university library does not participate in some of the international databases.	3.23	1.047	Medium	4
2	The lack of electronic resources to which the university library subscribes.	3.21	1.073	Medium	5
4	Lack of training in electronic research skills.	3.21	1.088	Medium	5
21	Lack of incentives to encourage the generalisation of electronic research.	3.19	1.329	Medium	7
10	Poor Internet skills	3.06	1.226	Medium	8
20	Professors discourage students to use and attain research from the Internet.	2.97	1.367	Medium	9
17	There is no time required to use electronic research.	2.87	1.274	Medium	10
18	I do not have experience in electronic research.	2.87	1.299	Medium	10
19	Lack of motivation towards using the electronic research system.	2.81	1.252	Medium	12
12	Lack of familiarity with the use of modern information technology.	2.74	1.280	Medium	13
5	The inability to connect to the databases from outside the university campus.	2.63	1.231	Medium	14
14	Poor English language skills.	2.61	1.464	Medium	15
7	Inability to select the appropriate information bases for my specialty.	2.60	1.093	Medium	16
16	Lack of awareness of electronic research methods.	2.60	1.384	Medium	16
9	Lack of research and studies in the Arabic language related to a specialised domain	2.56	1.350	Medium	18
8	Weak computer skills.	2.23	1.311	Low	19
15	I am not convinced of the practicability of electronic research.	2.23	1.311	Low	19
6	I do not own my computer	1.71	1.046	Low	21
The obstacles to the use of electronic research		2.83	0.565	Medium	

As shown in Table 2, the mean of the obstacles to using electronic research among graduate students at the Faculty of Educational Sciences at the Middle East University is 2.83 and a standard deviation of 0.565 with a medium degree. The means for all items have ranged between 1.71 and 3.61, indicating that the obstacles that postgraduate students face in electronic research amid the COVID-19 pandemic vary between weak to medium degrees. This result is due to the idea that electronic research has become a feature of the 21st century, and that postgraduate students shall use the Internet and search for well-respected websites while performing their duties and tasks assigned to them or searching for scientific articles, preparing research reports or preparing to write a university thesis. This result is consistent with Al-Ayed's (2020) study indicating that the degree of difficulties faced by graduate students when using digital libraries is medium. However, this result differs from the study (Murugesan & Pandian, 2012) demonstrating that the degree of problems faced by students when using electronic libraries is of higher degree. This result also differs from Oluwaseye and Abraham's (2013) study, indicating that the level of students' use of the digital library is weak, meaning that they face great difficulties in using the digital library.

Regarding the questionnaire's items, item 1 stipulating 'The absence of a guide explaining the steps for using the electronic research' is ranked first with a mean of 3.61 and a standard deviation of 1.077 with a medium degree. This may be due to the lack of support and reinforcement necessary for graduate students, the absence of adequate support for them, the shortage of technical support for what is required of them, their lack of knowledge of the use of modern technologies and electronic

programmes available to them, and their lack of knowledge of what they are required to perform, which is reflected in their need to have a guide with clear steps that can be used in electronic research. Concerning item 3 stipulating 'The internet is slow and the connection is constantly interrupted' is ranked second with a mean of 3.24 and a standard deviation of 1.126, with a medium degree. This is due to the weak and slow Internet networks due to severe pressure on them, especially amid the COVID-19 pandemic, as educational institutions should resort to distance learning, increasing the pressure on the Internet and slowing its speed.

Moreover, this may be due to poor coverage in some remote areas, and the lack of strong internet networks, making the connection constantly interrupted, and this weakens the downloading from the internet. This was confirmed by a study by Khan et al. (2011) that one of the problems confronted by university students in accessing the information required of them is the slow internet. Furthermore, as put by Al-Ahmar (2017), the most prominent obstacle that limits the use of the Internet is the slow downloading of pages on the Internet. Al-Ayed's (2020) study also shows that one of the difficulties students face in using digital libraries is the slow downloading of digital research pages.

Concerning item 11 stipulating 'The high cost of knowledge sources such as books, references and periodicals' is ranked second with a mean of 3.24 and a standard deviation of 1.155, with a medium degree. This is due to the lack of financial means for many graduate students, their inability to acquire and purchase books at a high cost and high amounts and their persuasion that many alternatives can be used to conduct their studies and research and carry out the tasks required of them. This is in line with the study (Al-Shbul & Alyan, 2014) indicating that the high financial cost of providing Internet services is one of the main obstacles for students to use the Internet in electronic research.

In the same mood, item 13 stipulating 'The university library does not participate in some of the international databases' is ranked fourth, with a mean of 3.23 and a standard deviation of 1.047, with a medium degree. This may be due to the high financial cost of subscribing to global databases, the lack of financial allocations to activate subscriptions and the university's belief and realisation that the use of these databases is minimal by students, given that global guidelines of the journals publish their research and articles in English, which constitutes a second challenge for many students to translate these researches and articles, and thus they often refrain from using these journals and global databases.

Also, item 8 stipulating 'Weak computer skills' is ranked in the penultimate rank, with a mean of 2.23 and a standard deviation of 1.311 with a low degree. Likewise, item 15 stipulating 'I am not convinced of the practicability of electronic research' is ranked in the penultimate rank, with a mean of 2.23 and a standard deviation of 1.311, with a low degree. Importantly, item 6 stipulating 'I do not own my computer' ranked last, with a mean of 1.71 and a standard deviation of 1.046 with a low degree. This finding agrees with the results of the study (Oluwaseye & Abraham, 2013) indicating that the most prominent difficulties facing students' use of the digital library are the low level of students' awareness about the use of the digital library, and the low level of computer skills among university students.

The current study agrees with this result that the presence of these items in the last ranks and obtaining a low degree of an obstacle is the normal situation. Computer skills, owning a personal computer and the need to constantly search the Internet are among the most important basics that all graduate students must possess, and therefore they all agree that they are low obstacles and do not represent a challenge for them while doing electronic research. Figure 1 shows the obstacles faced by postgraduate students when conducting electronic research arranged according to means from highest to lowest according to the degree of the obstacle among students.

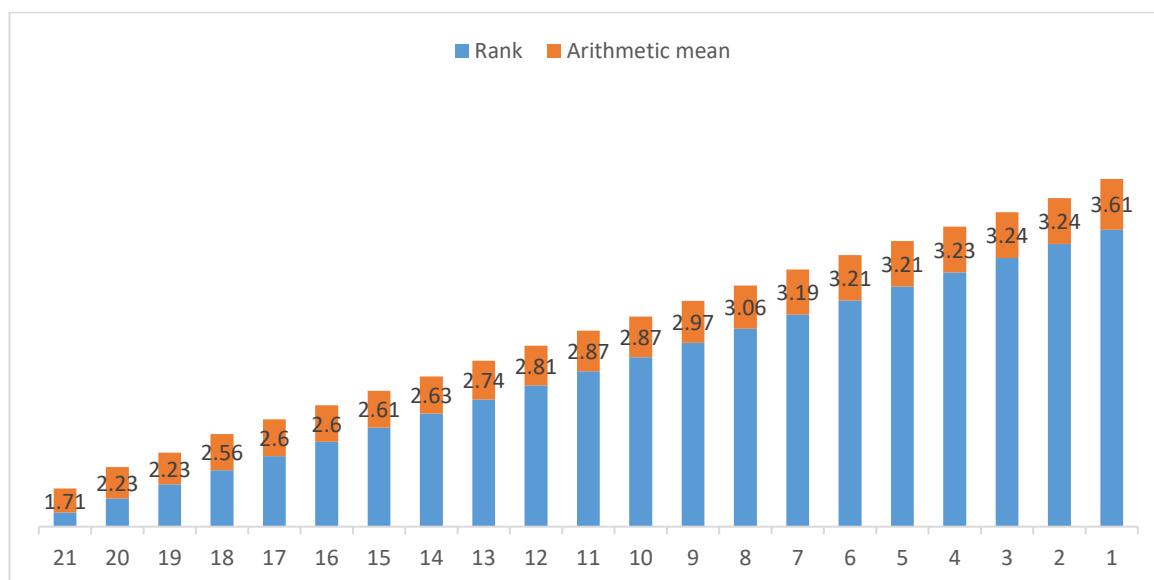


Figure 1

Obstacles Faced by Postgraduate Students When Conducting the Electronic Research

A personal interview is conducted with 10 graduate students at the Faculty of Educational Sciences who agree to conduct a personal interview to reveal the obstacles they face in electronic research amid COVID-19 pandemic. During their interview, the following open question was asked: What are the obstacles to using electronic research among graduate students at the Faculty of Educational Sciences amid the COVID-19 pandemic from their points of view?

After completing all the interviews with the students, their answers are transcribed, and the frequencies and percentages of each obstacle are calculated as mentioned by the postgraduate students who were interviewed, as shown in Table 3.

Table 3

Frequencies and Percentages of Obstacles Faced by Graduate Students at the Faculty of Educational Sciences in Electronic Research Amid COVID-19 Pandemic Through the Interview

Item	Text of item	Frequencies	Percentages
1	Lack of experience and weak research skills.	9	90
2	The high financial cost of subscribing to Internet databases and purchasing e-books	8	80
3	Lack of training workshops needed to search via the Internet	7	70
4	Slow internet networks and constant interruptions.	5	50
5	Slow downloading of electronic resources from the Internet	5	50
6	Lack of guidance on how to search via the Internet	4	40
7	Lack of electronic resources and references due to the university's lack of participation in the databases.	3	30
8	Lack of guidelines for searching on the Internet.	3	30
9	Low e-culture to search on the Internet	3	30
10	The unavailability of the necessary support for internet searches by professors and specialists.	2	20
11	Inability to access electronic databases from outside the university	2	20
12	Long time to access the required data and sources	2	20
13	Weak English language skills	2	20

14	The lack of studies and research available in the Arabic language in the specialisation	2	20
15	Difficulty accessing modern sources and references.	1	10
16	Websites require prior registration	1	10
17	Monopolising some electronic books on certain sites and not others	1	10

Figure 2 shows the obstacles faced by postgraduate students at the Faculty of Educational Sciences when conducting electronic research amid the COVID-19 pandemic arranged according to the percentages and frequencies of the degree of the obstacle for the interviewed postgraduate students.

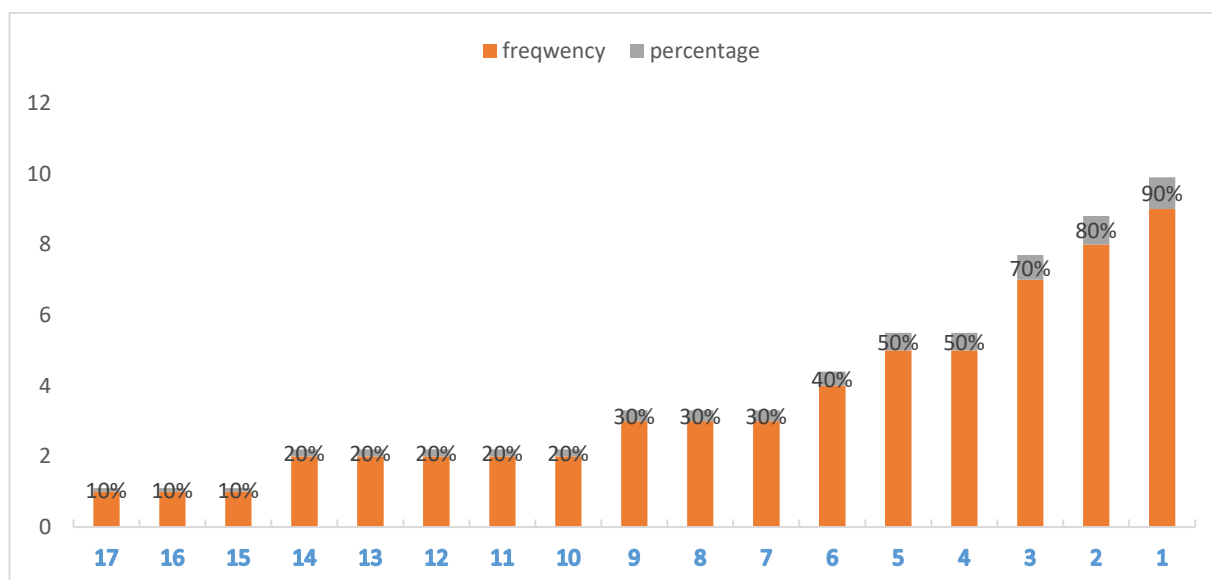


Figure 2

The Obstacles Facing Postgraduate Students During the Electronic Research Through the Interview

As shown in Table 3 and Figure 2, the most prominent obstacles faced by graduate students from their points of view and based on the interviews conducted with a related sample is represented in the obstacle stipulating 'Lack of experience and weak research skills' at a rate of 90% with a high degree. The study attributes this to a large number of burdens, academic requirements and personal and job obligations on postgraduate students, making them withdraw from developing their research skills. Another related reason is the lack of sufficient time for students to enrol in courses that provide them with research skills and the necessary experiences. This is because research skills may require an experienced person, an expert technician and a person with knowledge and skills in specialised research in various areas and disciplines, which is what many libraries or faculties lack to carry out the necessary guidance operations for students, guide them correctly and assist them during electronic research.

This result is consistent with a previous study (Bernad et al., 2012) that the most prominent obstacle that prevents the use of the Internet is not acquiring research skills as required. This result is also in agreement with a previous study (Al-Rabaya, 2014) that the most noticeable obstacles confronted by postgraduate students are the weakness of possessing the skills of using the Internet. On the other hand, Al-Jarf (2017) confirms that the lack of the necessary research and writing skills among students is the most important obstacle to electronic research operations.

Additionally, the obstacle stipulating 'The high financial cost of subscribing to Internet databases and purchasing e-books' is ranked second by 80%, with a high degree. This result is in line with the response of the participants to the questionnaire that the high financial cost of purchasing knowledge sources of books, references and periodicals represents one common challenge for all graduate students. The obstacle stipulating 'Lack of training workshops needed to search via the Internet' is

ranked third, with a rate of 70% and in a medium degree. This is attributed to the nature of graduate students' work, joining their jobs during the long daylight hours and their late attendance at the university to attend lectures, making it difficult to join the training workshops that help them in electronic research on the internet space. This may also be due to the belief of professors and officials that the graduate student must possess research skills and have sufficient experience in electronic research and access sources and references smoothly and easily before joining graduate programmes. This result agrees with the study (Al-Shuaibi, 2018) that the lack of training is one of the most important obstacles facing graduate students.

Al-Shbul and Alyan (2014) also confirm that the technological challenge of training in the use of the Internet represents an obstacle for students in electronic research. This result also agrees with Khan et al. (2011) that 66% of learners are in need of suitable training in using the electronic research and Internet skills. Likewise, this result is in line with a previous study (Al-Ayed, 2020) that the lack of training programmes for postgraduate students is one of the most important difficulties they face.

In the same vein, the following obstacles stipulating 'Difficulty accessing modern sources and references', 'Websites require prior registration' and 'Monopolising some electronic books on certain sites and not others' are, respectively, ranked last at a rate of 10% and to a weak degree. This is attributed to the fact that one of the axioms of using many specialised websites and electronic libraries, subscribing to bulletins and following up on developments is to create a username and password for the student, which is what graduate students do easily and effortlessly. Thus, this obstacle is weak for students, as all students are interested in using these websites and maintaining the confidentiality of their data away from insecure websites.

4. Conclusion

In a nutshell, the findings of the study show that there are real obstacles faced by graduate students in electronic research at the Faculty of Educational Sciences amid the COVID-19 pandemic. The most prominent of these obstacles is represented in the students' lack of experience and poor research skills to a high degree, while the high financial cost of subscribing to databases and electronic libraries and the cost of purchasing and downloading books from the Internet represented medium obstacles.

Besides, among the most common obstacles agreed upon by this study and other preceding studies are slow Internet networks, poor speed and poor internet downloads, which represent a continuous challenge amid the COVID-19 pandemic. Also, the lack of training and the failure to hold training workshops for postgraduate students represents another obstacle with a medium degree. The rest of the obstacles faced by graduate students, however, are of varying degrees, between weak and medium degrees. In this context, there is a wake-up call for universities to provide adequate training for students and empower them with research skills so that they can use the electronic research space without facing any obstacles.

5. Recommendations

Given the previous results, the study recommends holding related training workshops and workshops for graduate students to improve their electronic research skills; emphasising universities the need to participate in global databases and digital libraries that students need to meet their requirements and research needs; cooperating between telecommunications companies and universities to strengthen the transmission of Internet networks at high speeds, especially in remote areas, urging these companies to reduce the cost of students' subscriptions to the Internet; and reminding students of the importance of returning to the Internet and using electronic libraries and global databases to obtain the related information.

6. Acknowledgement

The author is grateful to the Middle East University in Amman, Jordan, for the financial support granted to cover the publication fees of this research article.

References

- Al-Ahmar, H. (2017). *The reality of postgraduate students at the University of Tripoli using the Internet in learning and scientific research* [Unpublished Master's Thesis]. University of Tripoli. <https://search.mandumah.com/Search/Results?lookfor=%29>
- Al-Aklabi, A., & Aref, M. (2017). The use of electronic information sources in the Saudi Digital Library and their suitability for beneficiaries in Saudi public universities. *Journal of Information Studies*, 19(1), 89–102. <https://search.mandumah.com/Record/844198>
- Al-Ayed, R. (2020). *The reality of the use of digital libraries by postgraduate students at the University of the Middle East* [Unpublished Master's Thesis]. Middle East University. <https://meu.edu.jo/libraryTheses/>
- Al-Bassiouni, M., & Rajeh, A. (2009). Online research instruments: A study of patterns of use and utilisation by faculty members and their assistants at King Abdulaziz University. *Arab Federation for Libraries and Information*, 5(4), 245–276. https://www.researchgate.net/publication/281102307_aladwat_albhthyt_ly_alantrnt_drast_f_y_anmat_alafadt_walastkhdam_mn_janb_ada_hyyt_altdrys_wmawnyhm_bjamt_almlk_bd_al_zyz_alm_45aktwbr_2009_s_s_245_-276
- Al-Far, W. (2012). *Twenty-first-century technology educators, web technology 2* (3rd ed.). Delta Computer Technology. <https://kh.sa/shop/>
- Al-Hajj, G. (2015). *The reality of using the Internet in scientific research: A field study on a sample of master's students, Department of Sociology and Demography, University of Ouargla* [Unpublished Master's Thesis]. Kasdi Merbah University. <https://search.mandumah.com/Search/Results?lookfor=>
- Al-Jarf, R. (2017). Skills in integrating electronic information sources into the educational process at the university level. *King Fahd National Library Journal*, 23(1), 89–122. https://kfnl.gov.sa/Ar/mediacenter/EMagazine/DocLib/23_1/89_122.pdf
- Al-Nawaisah, A. (2011). *Internet and electronic publishing*. Dar Safaa for Publishing and Distribution. <https://www.neelwafurat.com/itempage.aspx?id=lbb196774-166821&search=books>
- Al-Rabaya, J. (2014). *The degree of possession of electronic research skills and obstacles to their use among postgraduate students at the College of Educational Sciences at the University of Jordan* [Unpublished Master's Thesis]. University of Jordan. <http://search.mandumah.com/Record/726442/Details>
- Al-Shawabkeh, Y. (2010). The use of electronic information sources in educational university theses: An analytical study of reference citations. *King Fahd National Library Journal*, 2(16), 310–340. <https://journals.yu.edu.jo/jjes/Issues/2010/Vol6No4/03Ar.pdf>
- Al-Shbul, A., & Alyan, M. (2014). *E-learning*. Dar Safaa for Publishing and Distribution. <https://www.neelwafurat.com/itempage.aspx?id=lbb225772-202581&search=books>
- Al-Shuaibi, A. (2018). The degree of the use of the Saudi digital library among female educational diploma students at Umm Al-Qura University, their attitudes towards it, and the obstacles to its use. *Journal of the College of Basic Education for Educational and Human Sciences*, 1(40), 21–34. <https://www.iasj.net/iasj/download/a00cf659e7a597a5>
- Bernad, B., Arnould, M., Saint-lary, O., Duhot, D., & Hebbrecht, G. (2012). Internet use for information seeking in clinical practice: A cross-sectional survey among French general practitioners. *International Journal of Medical Informatics*, 1(2), 20–32. <https://doi.org/10.1016/j.ijmedinf.2012.02.001>
- Boudiaf, M. (2017). *Students' employment of digital library resources in their scientific research: Second-year students of the Master's degree at the Department of Media and Communication as a*

- Mansour, O. N. (2020). Obstacles to using electronic research among graduate students amid COVID-19: Graduate students' perspective. *Cypriot Journal of Educational Science*, 17(11), 4199-4214. <https://doi.org/10.18844/cjes.v17i11.8082>
- model* [Unpublished Master's Thesis]. Abdelhamid Ben Badis University. <http://e-biblio.univ-mosta.dz/bitstream/handle/123456789/2421/70.pdf?sequence=1&isAllowed=y>
- Chen, S. Y., & Fu, Y. C. (2009). Internet use and academic achievement: Gender differences in early adolescence. *Adolescence*, 44(176), 797–812. <https://www.ios.sinica.edu.tw/people/personal/fuyc/Internet%20Use%20and%20Academic%20Achievement.pdf>
- Hamza, A., & Abdel-Aal, A. (2014). A proposed training program for developing scientific research skills among graduate students at King Khalid University. *Specialized International Educational Journal*, 3(1), 119–140. http://www.iiioe.org/v3/IIJOE_06_01_03_2014.pdf
- Khan, S., Khan, A., & Bhatti, R. (2011). Internet access, use, and gratification among university students: A case study of the Islamic University of Bahawalpur, Pakistan. *Chinese Librarianship: An International Electronic Journal*, 1(32), 1–16. <http://www.iclc.us/cliej/cl32KKB.pdf>
- Kandilji, I. (2008). *Scientific research and the use of traditional and electronic information sources*. Al-Yazuri Scientific Publishing and Distribution House. <https://www.massira.jo/content/>
- Marwan, M. (2016). *Electronic search*. Retrieved December 10, 2021, from <https://mawdoo3.com/>
- Melhem, E. (2011). *Electronic information sources in university libraries*. Naif Arab University for Security Sciences. https://books.google.ws/books?id=2_bV8B0Jc3wC&printsec=frontcover#v=onepage&q&f=false
- Murugesan, M., & Pandian, N. (2012). Use of digital library resources by the engineering college students: A survey. *ISST Journal of Advance in Librarianship*, 3(2), 1–4. https://www.researchgate.net/publication/324170041_USE_OF_DIGITAL_LIBRARY_RESOURCES_BY_THE_ENGINEERING_COLLEGE_STUDENTS_A_SURVEY?enrichId=rgreq-4cbc5c023b032f687b87eb5a6bf98404-XXX&enrichSource=Y292ZXJQYWdlOzMyNDE3MDA0MTtBUzo2MTEyOTAwMDMzMDAzNTJAMTUyMjc1NDMwMjkwMA%3D%3D&el=1_x_2&esc=publicationCoverPdf
- Oluwaseye, A., & Abraham, A. (2013). The challenge in the development of academic digital library in Nigeria. *International Journal of Educational Research and Development*, 2(6), 152–157. <https://www.researchgate.net/publication/301676343>
- Rafi, M., Ming, Z., & Ahmad, K. (2019). Evaluating the impact of digital library database resources on the productivity of academic research. *Information on Discovery and Delivery*, 47(1), 42–52. <https://www.emerald.com/insight/content/doi/10.1108/IDD-07-2018-0025/full/html>
- Saada, J., & Al-Sartawi, A. (2014). *The use of computers and the Internet in the fields of education*. Dar Al-Shorouk for Publishing and Distribution. <http://213.6.8.28:310/records/1/539.aspx>
- Salha, S., & Hamad, A. (2015). The effectiveness of the Adobe Flash program in the achievement of sixth-grade students in technology in Nablus City Public Schools and their attitudes towards it. *An-Najah University Journal for Research*, 30(11), 2231–2264. <https://search.emarefa.net/detail/BIM-798503>
- Willoughby, T., Anderson, S., Wood, E., Mueller, J., & Ross, C. (2009). Fast searching for information on the internet to use in a learning context: The impact of domain knowledge. *Computer & Education*, 52(3), 640–648. <https://doi.org/10.1016/j.compedu.2008.11.009>