

Int. J. Advance Soft Compu. Appl, Vol. 14, No. 3, November 2022
Print ISSN: 2710-1274, Online ISSN: 2074-8523
Copyright © Al-Zaytoonah University of Jordan (ZUJ)

Readiness of Higher Education Institutions for E-learning Case of Jordanian Universities

Mohammad Hasan Altarawneh and Manal Subhi Hassan

Department of Educational Sciences/ Classroom Teacher,
Al-Zaytoonah University of Jordan, Jordan
e-mail: *dr.mohammadt@zuj.edu.jo*

Department of Educational Sciences/ Classroom Teacher,
Al-Zaytoonah University of Jordan, Jordan
e-mail: *manal.h@zuj.edu.jo*

Abstract

This study aimed to assess Readiness of Jordanian Universities for E-learning. For the purpose of the study a questionnaire consisting of (42) items was developed and divided into five domains, namely: organizational readiness, ICT tools, technical resources, faculty members, and students. The statistical analyses have been done using descriptive and inferential analytical approaches by the Statistical Package for Social Sciences. The results indicated that Readiness of Jordanian Universities for e-learning was medium. On one hand, the findings indicate that there were statistically significant differences at the significance level ($\alpha \leq 0.05$) in individual responses to the study sample attributed to the type of faculty variable in favor of sciences faculties. On other hand there were no statistically significant differences at the significance level ($\alpha \leq 0.05$) in individual responses to the study sample attributed to variable of faculty members by the academic rank.

Keywords: *E-learning, Jordanian Universities.*

1 Introduction

Higher education systems and Universities are considered one of the most important pillars of economic and social progress, and the achievement of prosperity in societies around the world. However, university education in the twenty-first century is facing many challenges, the most important of which is the tremendous development in information and communication technology (ICT). More recently, one of the most remarkable challenges was the spread of covid 19 pandemic and its forcibly sweeping changes in the higher education mechanisms, where universities have resorted, after a complete lockdown and the suspension of traditional (face-to-face) instruction in universities, to the implementation of e-learning (Hassan, et al., 2022).

In light of these challenges, it has become necessary for universities to follow modern technical methods within targeted programs characterised by quality performance, handling technology, diversity of learning resources, and reflecting the future prospects of education in implementing quality education that activates students' role and attitudes towards the teaching process right up to their acquisition of lifelong self-learning skills (Wangui & Ingado, 2020). In the same context Ababneh (2022) mentioned that traditional teaching methods and patterns in universities are no longer capable of coping with development in information and communication technology, which made most universities tended to use high-quality education by using various teaching methods and techniques to cope with the accelerated use of technology worldwide.

Indeed, as a result of implementing information and communication technology (ICT) in university education, a new learning and teaching pattern has emerged that is e-learning, which can be described as a process of integrating technology and its tools in education, bringing many benefits reflected in transforming abstract information in academic courses into a tangible experience for students while saving time and effort, and supporting the chances of obtaining an excellent education that is efficient, effective. Purwandari, et al., (2022) described the university's e-learning system as one way of producing the nation's generation with high-quality competitiveness with international standards.

All the foregoing is what universities seek to achieve through the implementation of e-learning model as a support tool in the learning-teaching process. The Hashemite Kingdom of Jordan has been keen to confront these challenges and changes in response to the global rapid technological and knowledge advances especially in the university education sector, and on June 30/2021 the Royal Decree was issued in implementation of the royal vision for the development of higher education to activate the embedding of e-learning system in higher education institutions in accordance with Article (13) of the Higher Education and Scientific Research Law, and pursuant to the Council of Ministers Resolutions hence requiring Jordanian universities to provide an embedded system of e-learning management, its security and protection; And to provide a fully-fledged technical environment in information technology; to train and prepare academic and administrative personnel to implement e-learning in these universities; to review the approved evaluation mechanisms and components in academic programs; and to design and approve educational content appropriate for interactive e-learning materials by taking into account intellectual property rights and using modern learning methods consistent with the e-learning (Ministry of Higher Education and Scientific Research, 2021).

2 Related Work

2.1 The Concept of E-Learning

E-learning is defined as an interactive learning style which use online multi-media either synchronously or asynchronously to present lectures, lessons, discussions, activities and tests, both within or outside the classrooms through the university's e-portal. Hence, e-learning is a support system for face-to-face higher education learning but not an alternative (Al-Zahrani, 2020). Gul (2015) also defined e-learning as an education model based on modern methods of communication including the computer and its networks, various audio-visual materials, search engines, electronic libraries,

virtual classes, e-Courses, video streaming and websites, whether accomplished in the classroom or at a distance.

2.2 Relevance of E-Learning

E-learning has become a contemporary learning model that relies on technology and information technology to provide e-content that enables learners to access it, exchange and retrieve information without temporal and spatial constraints. It is also an effective and feasible method that contributes to reducing costs, saving time and taking a proactive role in higher education (Abduljawad, et al., 2020). Moreover, the implementation of e-learning in higher education helps faculty members build their digital competencies and lifelong learning skills, in addition to enhancing their ability to understand rapid changes in the field of technology. E-learning enhances the provision and management of technical sources and resources that support the learning process and contributes to enhancing the reputation of higher education by adopting innovative and high-quality learning and teaching methods (Nguyen, et al., 2019). In the same vein, e-learning and its applications have received great attention from researchers as an important support system for higher education.

2.3 Factors associated with the implementation of e-learning in higher educations

The effective implementation of an e-learning system in higher education is associated with a set of systems and procedures that govern e-learning system, in addition to a set of tools supporting e-learning system, including Drafting regulations and instructions that regulate the methodology and operations of managing the e-learning system in higher education integrating them into learning process, Providing and accessing educational resources electronically at any time and without hindrance, Providing various assessment strategies and tools related to students' learning outcomes (Alshahrani, 2021).

In the same context, Wong, et al. (2014) mentioned that the readiness to implement e-learning is based on many criteria, including Content Readiness, Cultural Readiness to accept e-learning, Environmental Readiness to accept the e-learning model, Financial Readiness to spend the required funds, Learner Readiness, Administrative Readiness, the presence of staff to support e-learning technical resources, and Technical Readiness and having the necessary infrastructure. Almaiah, & Almulhem, (2018) also indicated in their study in the Saudi Arabian universities 11 critical factors grouped into four domains that cover website quality, technology options, top management support, and e-learning awareness by academic faculty and students. The results of this research will help designers, developers, and decision-makers to better understand the most important guidelines for a successful development of an e-learning system.

In fact many studies have demonstrated the importance of e-learning in universities such as Al-Soub, et al. (2021) study which aimed to assess students' satisfaction with distance education of chemistry courses during the COVID-19 pandemic at Aqaba University of Technology (AUT), the results indicated that students' satisfaction with using e-learning to learn chemistry in light of the COVID-19 pandemic was high, the interaction with e-learning and techniques reflected a high level of satisfaction while instruction and website improvement reflected a medium level of satisfaction. Adams, et al. (2022) also conducted a study investigated Students' Readiness for E-learning

during the COVID-19 Pandemic in a South-East Asian University, through the availability of a number of factors, including their possession of technical skills and the ability to use technology, the availability of technology tools in the learning environment, and the provision of a high-speed Internet connection, devices and servers that facilitate their e-learning to master the skill of self-learning. Findings identified that most students are ready for an e-learning mode of instruction. Finally, McGuinness and Fulton (2019) conducted a case study project at University College Dublin in Ireland that aimed to evaluate students' experience and engagement with the e-tutorials over one semester; and to express their general attitudes towards online learning and blended learning. A questionnaire of twenty-three (23) questions was distributed to (86) students. The results showed that e-tutorials were perceived as valuable in students' learning experience, it also showed that e-tutorials have an impact on enhancing face-to-face learning by providing e-tutorials with reusable designs, accessibility, and ease-of-use.

2.4 Problem of the Study

In their study in three private universities in Jordan Al-Adwan et al., (2021) argued that the quality factors associated with the performance of a faculty member, the technical support system and services, the quality of educational systems and educational content provided to students have a direct positive impact on students' attitudes towards e-learning, and the perceived benefit and use of the system, in the same context Vidić et al., 2022; Klasnić (2022) mentioned that e-learning requires the availability of education and training skills and skills, communication skills, and educational sciences. This study is mainly concerned with investigating the Readiness of Jordanian Universities from the perspective of their g faculty members. Therefore, this study attempts to answer the following research questions:

1. To what extent are the Readiness of Jordanian universities for e-learning from the perspective of their teaching faculty members?
2. Are there statistically significant differences at the significance level ($0.05 \geq \alpha$) between the estimates of faculty members for the Readiness of Jordanian universities for e-learning due to variable the type of faculty (sciences, humanities)?
3. Are there statistically significant differences at the significance level ($0.05 \geq \alpha$) between the estimates of faculty members for the Readiness of Jordanian universities for e-learning due to variable of faculty members by the academic rank?

2.5 Significance of the Study

The significance of e-learning system has grown as an educational tool which offers many benefits for the universities such as reducing physical expenses of learning, improving the management of learning processes, and enhancing the teaching learning process. E-learning is considered also as a technology which supports teaching and learning via a computer and the web technology. It bridges the gap between a teacher and a student in two different geographical locations. The significance of this study stems from the importance of the concept e-learning in Jordanian universities, its significance also stems from the importance of its objectives in investigating the awareness of faculty members in Jordanian universities about the readiness of these universities for implementing e-learning.

3 Methodology

3.1 Research Approach

To achieve the nature and objectives of the study, a descriptive-analytical method has been used to collect and analyze the data of this study problem using the measurement instrument. The questionnaire applied to a representative sample of the study.

3.2 Study Population

The study population consists of (1934) faculty members from University of Jordan (public), and Al Zaytoonah University of Jordan (private), in the Jordanian capital Amman during the first semester of the academic year (2020/2021).

3.3 Study Sample

A random sample has been selected from the study population consisting of (180) faculty members from the Scientific and human Faculties at University of Jordan, and Al Zaytoonah University of Jordan.

3.4 Study Instrument

The researcher has developed a questionnaire based on the previous study (Al Soub et al., 2021; Al-Adwan et al., 2021; hassan et al., 2022). The questionnaire consisted of (42) items distributed over five domains: organizational Readiness (10) items, ICT tools (10) items, Technical resources (7) items, Faculty members (7) items, and Students (8) items.

3.5 Study Instrument Validity

To verify the validity of the study instrument, it has been presented to an 10-validator committee with competence and experience from faculty members specialized in the field of university education. The modifications and suggestions of the members of the committee have been considered, and some modification have been made in the questionnaire phrases.

3.6 Study Instrument Reliability

To verify the instrument reliability, an exploratory sample survey of (40) faculty members was adopted, an internal-consistency approach (Cronbach's Alpha) was used to compute the reliability coefficient. As shown in Table (1), the values for the reliability coefficient of the domains of the research instrument ranged from (0.92) to (0.96), and for the entire instrument was (0.90). They all are considered educationally appropriate and acceptable reliability coefficients that fulfil the study purposes.

Table 1: Cronbach's Alpha Reliability Coefficient for the Domains of study Instrument and for the Entire Instrument

Domain	No. of Items	Internal Consistency
--------	--------------	----------------------

Organizational Readiness	10	0.93
ICT tools	10	0.94
Technical Resources	7	0.94
Faculty Members	7	0.96
Students	8	0.92
Overall Reliability of Entire Instrument	42	0.90

3.7 Study Instrument Correction

To answer the research questions; the following statistical methods are used:

1. Means and Standard Deviations of individual responses to each item of the study instrument. To evaluate the availability of factors associated with the implementation of blended learning in Jordanian universities from the perspective of faculty members, the degree of availability is classified into three levels (Low, Medium, High) by calculating the mean; using the following formula:

Length of One Category = (the Highest Value of the Alternative - the Minimum Value of the Alternative) ÷ Number of Levels = $(5-1) \div 3 = 1.33$

And by adding (1.33) to the Minimum Value of the alternative (the minimum); the criterion for expressing those levels is: the Mean ranging (1 - 2.33) indicates a Low Degree, the Mean ranging between (3.67 - 2.34) indicates a Medium Degree, and the Mean ranging between (5 - 3.68) indicates a High Degree.

2. Independent Sample T-Test: is used to determine whether there are any statistically significant differences between the means of individual responses to the questionnaire items by the variable type of faculty (sciences, humanities).

3. One-Way ANOVA Analysis: is used to determine whether there are any statistically significant differences between the means of individual responses to the questionnaire items by the variable of faculty members by the academic rank (Professor, Associate Professor, Assistant Professor, and Instructor).

4 Results and Discussions

4.1 Results

4.1.1 Results related to the First Research Question

To what extent are the Readiness of Jordanian universities for e-learning from the perspective of their teaching faculty members? To answer this question, the means and standard deviations of study sample responses to the items related to the five domains of the study instrument and the entire instrument were calculated. Table (2) illustrates those findings.

Table (2): Means, Standard Deviations, and Rank of faculty members Responses to the Five Domains of Research Instrument and the Entire Instrument

Domain	Mean	Standard Deviation	Degree	Rank
Organizational Readiness	3.481	0.821	Medium	2
ICT tools	3.330	0.858	Medium	4
Technical Resources	3.371	0.907	Medium	3
Faculty Members	3.587	0.923	Medium	1
Students	3.141	0.944	Medium	5
All Instrument Items	3.379	0.808	Medium	

For further clarification, the means and standard deviations for each item of the research instruments were calculated. Tables (3), (4), (5), (6), and (7) show those findings, as follows:

4.1.1.1 First domain Organisational Readiness

This domain consisted of (10) items, and Table (3) shows the means and standard deviations for each item.

Table (3): Means, Standard Deviations, Availability, and Rank for Each Item of the Organisational Readiness Domain

Item	Text of Item	Mean	Standard Deviation	Availability	Rank
1	The university strives to spread awareness of e- learning among students, faculty members and employees	3.828	0.939	High	3
2	Explanations on the e-learning instructions for faculty	3.867	0.924	High	2
3	Development of university support systems that facilitate the implementation of e-learning	3.717	0.970	High	5
4	Establishing an e-learning center to follow up on the use of modern technology in education	3.922	0.988	High	1
5	Providing high-speed internet connection in the university and providing devices and servers necessary to implement e-learning	3.728	0.958	High	4
6	Equipping all lecture rooms with electronic devices and Internet connection	3.194	0.964	Medium	8
7	Generating sources of financial support to prepare the infrastructure for the implementation of e-learning	3.306	0.920	Medium	7
8	Providing a specialist team for periodic maintenance and emergency situations	3.506	0.889	Medium	6

9	Allocation of financial incentives to faculty members who implement e-learning	2.544	0.819	Medium	10
10	Acquiring and simulating the best practices of reputable universities in implementing e-learning	3.193	0.844	Medium	9
All Domain Items		3.481	0.821	Medium	

As shown in Table (3) the means for the items of the Organisational Readiness Domain ranged from (2.544) to (3.922). The item stipulating “Establishing an e-learning centre to follow up on the use of modern technology in education” was ranked first with a mean of (3.922) and with a high degree of availability, then followed by the item stipulating “Explanations on the e-learning instructions for faculty members” in the second rank with a mean of (3.867) and with a high degree of availability. Table (3) also shows that the item stipulating “Allocation of financial incentives to faculty members who implement e-learning” was ranked last with a mean of (2.544) and with a medium degree of availability.

4.1.1.2 Second domain ICT tools

This domain consisted of (10) items, and Table (4) shows the means and standard deviations of each of those items.

Table (4): Means, Standard Deviations, Availability, and Rank for Each Item of the ICT tools Domain

Item	Text of Item	Mean	Standard Deviation	Availability	Rank
1	Use of integrated courses in form of electronic activities in the curriculum	3.289	0.838	Medium	6
2	Implementation of integrated courses in the form of electronic assignments	3.250	0.826	Medium	7
3	Implementation of Virtual Classes Technology	3.133	0.770	Medium	8
4	Implementation of Moodle System in Learning and Teaching	3.978	0.888	High	1
5	Implementation of Video Streaming	3.433	0.658	Medium	2
6	Providing Scientific Digital Content for each course	3.428	0.861	Medium	3
7	Designing e-courses by a specialist team in Teaching and in Multimedia Design	3.122	0.912	Medium	9
8	Designing e-learning courses according to Educational Criteria and Standards	3.317	0.825	Medium	4
9	Peer-Review E-courses before being presented to students	3.039	0.892	Medium	10
10	Providing learning activities supporting the implementation of e-learning	3.300	0.811	Medium	5
All Field Items		3.330	0.858	Medium	

As shown in Table (4), the means of items of the ICT tools Domain ranged from (3.039) to (3.978). The item stipulating “Implementation of Moodle System in Learning

and Teaching” was ranked first with a mean of (3.978) and with a high degree of availability, then followed by the item stipulating “Implementation of Video Streaming” in the second rank with a mean of (3.433), and a medium degree of availability.

Table (4) also shows that the item stipulating “Peer-Review E-courses before being presented to students” was ranked last with a mean of (3.039), and with a medium degree of availability.

4.1.1.3 Third domain Technical Resources

This domain consisted of (7) items, and Table (5) shows the means and standard deviations of each of those items.

Table (5): Means, Standard Deviations, Availability, and Rank for Each Item of the Technical Resource Domain

Item	Text of Item	Mean	Standard Deviation	Availability	Rank
1	The university strives to provide technical sources and resources supporting the e-learning	3.522	0.922	Medium	3
2	Preparation of a guide to design and produce electronic learning materials	3.289	0.934	Medium	4
3	Equipping Video Streaming Studio (Lighting, Sound Insulation, Video Cameras, Cables, etc.)	3.189	0.833	Medium	6
4	Providing Remote Cloud Google Drive Tools	3.567	0.942	Medium	2
5	Providing an e-library that includes all electronic scientific references for courses implementing blended learning	3.161	0.913	Medium	7
6	Employment of special ICT applications integrated into education in Arabic language	3.256	0.847	Medium	5
7	Mandating a specialist team to provide technical support and solve technical problems related to e-learning	3.617	0.956	Medium	1
All Field Items		3.371	0.907	Medium	

As shown in Table (5), the means of the items of the Technical Resources Domain ranged from (3.161) to (3.617). The item stipulating “Mandating a specialist team to provide technical support and solve technical problems related to e-learning” topped the list and ranked first, with a mean of (3.617) and with a medium degree of availability, then followed by the item stipulating “Providing Remote Cloud Google Drive Tools” in the second rank with a mean of (3.567), and with a medium degree of availability.

Table (5) also show that the item stipulating “Providing an e-library that includes all electronic scientific references for courses implementing e-learning” was ranked last with a mean of (3.161), and with a medium degree of availability.

4.1.1.4 Fourth domain Faculty Members

This domain consisted of (7) items, and Table (6) shows the means and standard deviations of each of those items.

Table (6): Means, Standard Deviations, Availability, and Rank for Each Items of the Faculty Members Domain

Item	Text of Item	Mean	Standard Deviation	Availability	Rank
1	Training of faculty members and developing their capabilities to implement the E-learning Management System (Moodle)	3.589	0.952	Median	4
2	Training and rehabilitating of faculty members and developing their capabilities to implement the e-learning	3.617	0.934	Median	3
3	Training of faculty members on building online exams and students' evaluation mechanisms	3.656	0.946	Median	2
4	Implementation of teaching strategies and methods that are compatible with the blended learning and that achieve the learning outcomes	3.511	0.989	Median	6
5	Restructuring study plans based on the criteria for the implementation of e-learning in the courses	3.706	0.865	Median	1
6	Dealing with the changing educational roles associated with the implementation of e-learning	3.483	0.911	Median	7
7	Adopting a Unified Grading System to evaluate all students	3.544	0.905	Median	5
	All Field Items	3.587	0.923	Median	

As shown in Table (6) the means of the items of the Faculty Members Domain ranged from (3.483) to (3.706). The item stipulating “Restructuring study plans based on the criteria for the implementation of e-learning in courses” was ranked first with a mean of (3.706), and with a high degree of availability, then followed by the item stipulating “Training of faculty members on building online exams and student evaluation

mechanisms” in the second rank with a mean of (3.656), and with a medium degree of availability. Table (6) also shows that the item stipulating “Dealing with the changing educational roles associated with the implementation of e-learning” was ranked last with a mean of (3.483), and with a medium degree of availability.

4.1.1.5 Fifth domain Students

This domain consisted of (8) items, and Table (7) shows the means and standard deviations of each of those items.

Table (7): Means, Standard Deviations, Availability, and Rank for Each Items of Students Domain

Item	Text of Item	Mean	Standard Deviation	Availability	Rank
1	Preparing students to uphold the idea of e-Learning through training courses and periodic meetings	3.256	0.941	Medium	5
2	Holding training courses for students to develop their skills in using e-learning technologies and resources	3.172	0.934	Medium	6
3	Training of students and developing their capabilities to use e-learning system through tutorials	3.411	0.922	Medium	1
4	Students' high motivation and positive interaction with the courses taught by using e-learning system	3.272	0.923	Medium	3
5	Developing students' skills to use the integrated ICT in education	3.339	0.901	Medium	2
6	Providing students with consistent technical and psychological support	3.261	0.921	Medium	4
7	Providing needy students with free internet packages to activate the e-learning system	2.878	0.902	Medium	7
8	The university provides computers for students who do not have	2.539	0.912	Medium	8
All Field Items		3.141	0.944	Medium	

As shown in Table (7), the means of the items of the Students Domain ranged from (2.539) to (3.411). The item stipulating “Training of students and developing their capabilities to use e-learning system through tutorials” was ranked first, with a mean of (3.411), and with a medium degree of availability, then followed by the item stipulating “Developing students' skills to use the integrated ICT in education” in the second rank

with a mean of (3.339), and with a medium degree of availability. Table (7) also shows that the item stipulating “The university provides computers for students who do not have” was ranked last with a mean of (2.539), and with a medium degree of availability.

4.1.2 Results related to the Second Research Question

Are there statistically significant differences at the significance level ($0.05 \geq \alpha$) between the estimates of faculty members for the Readiness of Jordanian universities for e-learning due to variable the type of faculty (sciences, humanities)?

To answer this question, an independent sample T-test is used to determine whether there are any statistically significant differences between the means of the individual responses to the study instrument items by the type of faculty (sciences, humanities) variable, and Table (8) shows this.

Table (8): Independent Samples T-Test of the Differences between Means of estimates of faculty members Responses to Questionnaire Items by the Type of Faculty (Sciences, Humanities) Variable

Type	Total	Mean	Standard Deviation	Degrees of Freedom	T-Value	Statistical Significance
Sciences	91	3.559	0.860	178	3.093	0.002
Humanities	89	3.195	0.709			

Table (8) shows that there is a statistically significant difference ($\alpha \geq 0.05$) between the estimates of faculty members for the Readiness of Jordanian universities for e-learning due to variable the type of faculty (sciences, humanities) variable, and in favour of the faculties of sciences.

4.1.3 Results related to the Third Research Question

Are there statistically significant differences at the significance level ($0.05 \geq \alpha$) between the estimates of faculty members for the Readiness of Jordanian universities for e-learning due to variable of faculty members by the academic rank?

To answer this question, the means and standard deviations of individual responses to the questionnaire items were calculated by the academic rank (Professor, Associate Professor, Assistant Professor, Instructor) variable, and Table (9) shows these findings.

Table (9): Means and Standard Deviations of faculty members Responses to Questionnaire Items by the Academic Rank Variable

Academic Rank	Total	Mean	Standard Deviation
Professor	39	3.554	0.759
Associate Professor	58	3.305	0.733
Assistant Professor	49	3.255	0.911
Instructor	34	3.485	0.813
Total	180	3.379	0.808

The one-way analysis of variance (ANOVA) was also used to determine whether there are any statistical significance of the differences between the means of individual responses to the questionnaire items by the academic rank (Professor, Associate Professor, Assistant Professor, Instructor) variable, and table (10) shows these findings.

Table (10): One-Way ANOVA to Determine Statistical Significance Differences between the Means of Individual Responses to Questionnaire Items by the Academic Rank Variable

Source of Variation	Sums of Squares	Degrees of Freedom	Mean Square	F	Statistical Significance
Between Groups	2.654	3	0.885	1.364	0.255
Within Groups	114.156	176	0.649		
Total	116.810	179			

Table (10) shows that there are no statistically significant differences between the estimates of faculty members for the Readiness of Jordanian universities for e-learning due to variable of faculty members by the academic rank.

4.2 Discussions

As stated earlier, our analysis aimed to study readiness of Jordanian Universities for e-learning (Table 2), it is noticeable that these universities showed a medium level of readiness for using an e-learning system. This results may be attributed to the fact that Jordanian universities, before the Covid-19 pandemic, were considering traditional face-to-face education as the pattern of education that prevailed, while e-learning was only applied in a few of these universities. After the pandemic universities have to complete all the necessary equipment to apply e-learning professionally. As Jordanian universities need in this direction process of building an effective system, dissemination of a culture of transition to implement e-learning at the higher education; development of higher education systems that support and assist the e-learning system; provision of technological and technical resources such as servers, Internet connections, and e-learning module that ensures the availability and accessibility to electronic information sources, training faculty members and developing their capabilities to implement e-learning. The results also indicated that there were statistically significant differences at the significance level ($\alpha \leq 0.05$) between the estimates of faculty members for the Readiness of Jordanian universities for e-learning due to variable the type of faculty (sciences, humanities (Table 8), This result could be attributed to the differences like the teaching-learning process, infrastructure and technological equipment between faculties of humanities and faculties of sciences, which make the readiness of faculties of sciences in terms of availability of computer laboratories, software, electronic and technological applications higher than that of faculties of humanities. On other hand there were no statistically significant differences at the significance level ($\alpha \leq 0.05$) between the estimates of faculty members for the Readiness of Jordanian universities for e-learning due to variable of faculty members by the academic rank (Professor, Associate Professor, Assistant Professor, Instructor) Variable (Table 10). However, this result may be attributed to the fact that the readiness for e-learning is related to the

learning-teaching process practiced by all faculty members in Jordanian universities, irrespective of the difference in their academic rank.

5 Conclusion

Faculty member's responses on the readiness of e-learning were medium. Further studies include assessment of Universities readiness for e-learning are required to give a wide perspective for the whole experience of implementing e-learning system.

References

- [1] Al-Adwan, A. S., Albelbisi, N. A., Hujran, O., Al-Rahmi, W. M., & Alkhalifah, A. (2021). Developing a holistic success model for sustainable e-learning: a structural equation modeling approach. *Sustainability*, 13(16), 9453. <https://doi.org/10.3390/su13169453>
- [2] Ababneh, s. (2022). The Quality of Blended Learning during COVID-19 Pandemics at the University of Jordan. *Journal of Positive Psychology & Wellbeing*, 6 (1), 775–782.
- [3] Abduljawad, M., Ahmad, A., Jaber, K., Al Thunaibat, A., Maria, E., Khasawneh, A. & Hijazi, H. (2020). Evaluating and Adopting E-learning Systems in Al-Zaytoonah University of Jordan. *International Journal of Advances in Soft Computing and Its Applications(IJASCA)*, 12(3), 82-99.
- [4] Adams, D., Chuah, K.M., Sumintono, B. & Mohamed, A. (2022). Students' readiness for e-learning during the COVID-19 pandemic in a South-East Asian university: a Rasch analysis. *Asian Education and Development Studies*,11(2), 324-339. <https://doi.org/10.1108/AEDS-05-2020-0100>
- [5] Almaiah, M. A., & Almulhem, A. (2018). A conceptual framework for determining the success factors of e-learning system implementation using Delphi technique. *Journal of Theoretical and Applied Information Technology*, 96(17), 5962-5976.
- [6] Alshahrani, A. (2021). Readiness of Higher Education Institutions for e-learning: A Case Study of Saudi Universities during the COVID-19 Pandemic. *International Journal of Advances in Soft Computing and Its Applications(IJASCA)*, 13(1), 149-161.
- [7] Al Soub, T. F., Alsarayreh, R. S., & Amarin, N. Z. (2021). Students 'satisfaction with Using E-Learning to Learn Chemistry in Light of the COVID-19 Pandemic in Jordanian Universities. *International Journal of Instruction*, 14(3), 1011-1024. <https://doi.org/10.29333/iji.2021.14359a>
- [8] Al-Zahrani, S. (2020). Um Al-Qura Faculty Members' Trends Toward Employing the Electronic Learning Tools. *The Arab Journal for Quality in Education*, 4(14), 257-376.
- [9] Gul, S. (2015). E-Learning Revolutionise Education: An Exploratory Study.
- [10] Hassan, M. S., Khalil, K. A., Saleh, M., & Altarawneh, M. H. (2022). Factors associated with the Implementation of Blended Learning in Jordanian Universities. *Journal of Positive School Psychology*,6(5), 2352-2363.
- [11] Nguyen, Q., Nguyen, P. & Huynh, V. (2019). Roles of E-learning in Higher Education. *Journal of Critical Reviews*, 6(4), 7-13.
- [12] McGuinness, C. & Fulton, C. (2019). Digital Literacy in Higher Education: A Case Study of Student Engagement with E-Tutorials Using Blended Learning. *Journal of*

- Information Technology Education: Innovations in Practice, 18, 001-028. <https://doi.org/10.28945/4190>
- [13] Ministry of Higher Education and Scientific Research. (2021). The Executive Action Plan for Integrating E-learning into Higher Education System. Amman, Jordan.
- [14] Purwandari, E. P., Junus, K., & Santoso, H. B. (2022). Exploring e-learning community of inquiry framework for engineering education. *International Journal of Instruction*, 15(1), 619-632. <https://doi.org/10.29333/iji.2022.15135a>
- [15] Vidić, T., Klasnić, I., & Đuranović, M. (2022). Student Evaluation of Online Teaching Quality, Their Own Engagement and Success Expectancy in the Future Profession. *International Journal of Emerging Technologies in Learning*, 17(4), 135-147. <https://doi.org/10.3991/ijet.v17i04.27517>
- [16] Mwangi, W. P., & Ingado, D. (2020). Higher education in the 21st century: Relevance, sufficiency, challenges and remedies from graduates' perspective. *Journal of Education, Society and Behavioural Science*, 33(8), 23-37. <https://doi.org/10.9734/jesbs/2020/v33i830248>
- [17] Wong, L., Tatnall, A. & Burgess, S. (2014). A framework for investigating blended learning effectiveness. *Education + Training*, 56(2/3), 233-251. <https://doi.org/10.1108/ET-04-2013-0049>

Notes on contributors



Mohammad Hasan Altarawneh is Associate Professor at the Department of Educational Sciences/ Classroom Teacher, Al-Zaytoonah University of Jordan, Amman, Jordan. His main teaching and research interests include Curriculum and Teaching Methods, Constructivist theory, learning styles and E-learning. He has published several research articles in international journals of Education.



Manal Subhi Hassan is Associate Professor at the Department Educational Sciences/ Classroom Teacher, Al-Zaytoonah University of Jordan, Amman, Jordan. His main teaching and research interests include Strategic planning, Leadership, Knowledge management and E-learning. He has published several research articles in international journals of Education.