

The Impact of Applying the E-learning System to Improve the Quality of University Education: An Applied Study on Jordanian Universities

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The present study aimed to identify the impact of applying e-learning systems to improve the quality of university education in Jordan. The study's population consisted of all the faculty members who work at Jordanian universities. The convenience sampling method was used for selecting a sample. The final sample consisted of 120 faculties members. To meet the study's goals, a questionnaire was developed, based on the literature and studies that shed a light on the e-learning system. The reliability and validity of the study's questionnaire were measured. A 0.814 total value of Cronbach Alpha coefficient was calculated. Several conclusions were made. For instance, it was found that: (1) The overall mean of applying the e-learning system dimensions (i.e. the extent of employing computer skills and e-learning tools) is high. That means that the faculty members at Jordanian universities have positive attitudes towards these dimensions. That indicates that the application of these dimensions is high from the respondents' perspective. (2) The application of e-learning system dimensions has a statistically significant impact at the statistical significance level of a (= 0.05) on improving the quality of university education in Jordan. These dimensions are: the extent of employing computer skills and e-learning tools. Based on the previous results, the researcher recommends holding training courses and workshops for faculty members to improve their skills in applying the e-learning system in the teaching process. Such courses and workshops should promote knowledge about its use.

Key words: *E-learning system, quality of education, computer skills, university education, Jordanian universities.*

Introduction

E-learning improves the teaching-learning process. It has many advantages when comparing it with conventional teaching methods. Many academic institutions today employ the e-learning system and its applications and tools.

Many conferences and symposiums today are held for addressing e-learning-related issues. The e-learning tools have been developing much, and they have several characteristics. Due to such advantages, it is necessary to employ the E-Learning system. Employing it shall improve the effectiveness and efficiency of the teaching-learning process. It shall participate in eliminating the defects of the teaching-learning process. The E-learning system can be used for improving education throughout several educational stages.

Due to rapid technological developments, some Jordanian institutions have applied the E-learning system. It is applied to promote interaction among faculty members. It is also applied to promote interaction among the students. However, universities face several obstacles, hindering them from such an application. Such obstacles may include a lack of interest among students in learning through the e-learning system. In addition, some faculty members refrain from employing the e-learning system in their lectures. That is because such faculty members prefer using conventional teaching methods.

Statement of the Problem and the Study's Questions

E-learning is a modern educational style. It is applied in many universities because it plays a significant role in improving the quality of higher education. Some Jordanian universities also apply it. Based on the previous information, this study aims to answer the following questions:

- Q.1. What is the significance of the e-learning system? What are the most important e-learning applications?
- Q.2. What is the role of the faculty members in applying the e-learning system in terms of following up students and interacting with them?
- Q.3. What is the extent of employing e-learning system by faculty members?
- Q.4. How suitable it is to implement e-learning system in Jordanian universities?
- Q.5. Does the application of e-learning systems have a statistically significant impact on improving the quality of university education?

The Study's Importance

Computers and its applications are highly used today in various fields of life, especially in the educational sector. For instance, academics and students increasingly use them. That is because

many studies believe that computers and their applications play an effective role in education because the internet today can provide students with many information sources. The present study is significant because:

1. It sheds a light on a very important subject (i.e. e-learning). E-learning is considered a modern concept in the field of education. It is highly used in many academic institutions today, including universities.
2. It shall enrich the literature that sheds light on the e-learning system and the quality of university education. It shall enrich the relevant literature targeting Arab countries in general and Jordan in particular.
3. It examines the impact of applying e-learning systems on improving the quality of university education in Jordan.
4. It provides results and recommendations that shall benefit decision-makers in Jordanian universities.
5. E-learning systems play an important role. For instance, it provides students and faculty members with theoretical and practical knowledge.

The Study's Objectives

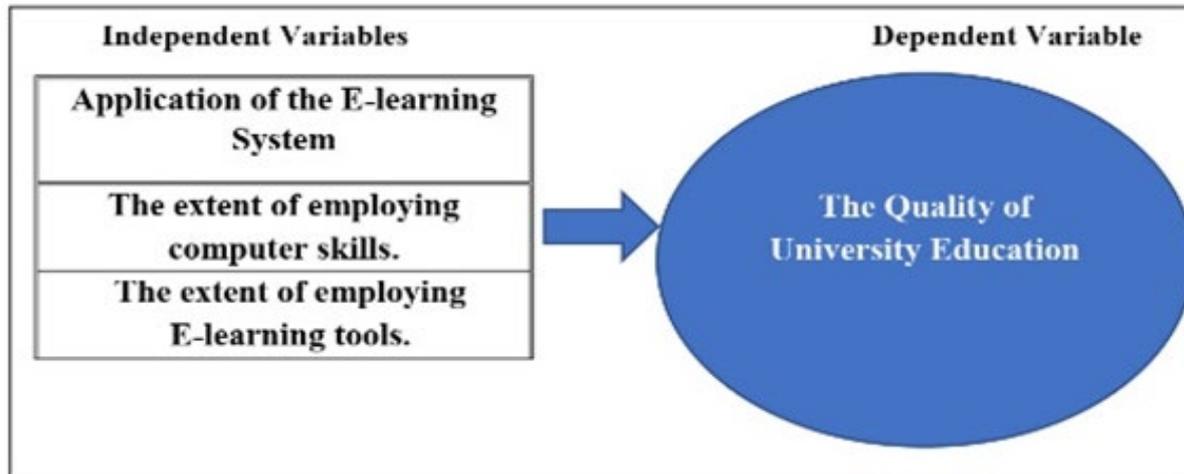
The present study aims to meet several goals. For instance, it aimed to:

1. Review the theoretical literature that sheds a light on e-learning and the quality of university education and the relationship between both of those variables. It also aimed to identify the meaning of the concepts associated with such issues.
2. Identify the extent of applying the e-learning system and its tools in Jordanian universities.
3. Identify the impact of applying the e-learning system on improving the quality of university education in Jordan.
4. Suggest suitable solutions for overcoming the obstacles that hinder faculty members in Jordanian universities from applying e-learning systems.
5. Provide decision-makers at Jordanian universities with important recommendations.

The Study's Model

Figure 1 displays the study's model. It represents the proposed relationship between applying the E-learning system and improving the quality of university education in Jordan.

Figure 1. The Study's Model Prepared by the Researcher



The Study's Hypotheses

- The Main Hypothesis: To achieve the study objectives, the study hypotheses have been suggested as a null hypothesis:

- **H0:** There is no statistically significant impact at the significance level ($\alpha \leq 0.05$), for the Application of the E-learning System in terms of their dimensions (the extent of employing computer skills, the extent of employing E-learning tools) on improving the Quality of University Education for the sample of Jordanian Universities

Two Sub-Hypotheses emerged from the main hypothesis:

- **H01:** There is no statistically significant impact at the significance level ($\alpha \leq 0.05$) for the extent of employing computer skills on improving the Quality of University Education in Jordan.
- **H02:** There is no statistically significant impact at the significance level ($\alpha \leq 0.05$) for the extent of employing E-learning tools on improving the Quality of University Education in Jordan.

The Theoretical Framework

The Meaning of E-Learning

Due to rapid technological developments, the term (e-learning) emerged. Many researchers believe that the e-learning system is the best teaching method. Many researchers expect that this method shall spread widely in the future in educational and training institutions. Based on the previous information, the researcher of the present study shall shed a light on the meaning

of e-learning and the advantages and goals of applying the e-learning system. Regarding the meaning of e-learning, it is defined as a teaching method through which modern ICTs are employed. Such ICTs may include a computer, its applications and networks, multimedia, e-databases, electronic libraries, and the internet. In other words, e-learning involves using technology for delivering information with the least amount of time and by exerting the least amount of effort (Bassiouni, 2006). E-learning involves interactive learning methods (bin Abdul Aziz Al-Musa). E-learning may involve distance learning and online learning. It may involve using virtual lecture halls, etc. Through e-learning, a communication mean shall be used. E-learning involves auditory and visual material. Through e-learning, curricula are presented using multimedia, CDs, and electronic pages (Abdel-Hamid, 2005). E-learning refers to the use of modern technology in the learning process, such as the internet, satellites, video conferences, email, online conversation (El-Atrouni). Based on the previous definitions, it can be noticed that there is not any fixed definition for the concept (e-learning). However, the researcher of the present study defines (e-learning) as the use of electronic multimedia by students to communicate, learn. He adds that e-learning involves the use of electronic devices and programs in the teaching process. Such devices may include data show device. He adds that e-learning involves the use of virtual lecture halls. Such halls enable students to attend online conferences and symposiums

The Goals of E-learning

E-learning is applied to meet several goals. Some of these goals are presented below:

1. E-learning is applied in the aim of keeping up with the latest developments and ensuring that students are acquainted with the latest developments. It is applied for enabling students to gain experiences and communicate with others. It is applied for promoting creativity among students and adjusting their conventional thinking patterns. It is applied for establishing a culture of technology in academic institutions.
2. It is applied for developing the teaching process and supporting different learning styles. For instance, some students are auditory learners, and other learners are visual learners. Other learners learn better by adopting a writing-based approach or through seeing practical examples. E-learning is applied because it provides students with access to various information sources. It facilitates the learning process for the students who face difficulty in concentrating and organising their tasks.
3. It is applied because it enables students to acquire new skills without adopting the spoon-feeding method. It is applied because it provides students with much privacy in their learning environment.
4. It is applied because of its flexible learning method. For instance, the E-learning tool can be used at any time and place, while enjoying a high level of quality. Students can easily

access electronic academic material through E-learning. They can easily access electronic programs at any time through e-learning. E-learning is applied because it allows students to overcome spatial and temporal limitations that may hinder them from learning.

5. It is applied because it improves communication between students and faculty members and promotes interaction among them. For instance, e-learning provides students and faculty members with various communication means, such as chatrooms, emails, video and conferences.
6. It is applied because it aims to serve as a model and presents it in a standard image. Through it, questions can be repeated due to the question banks. Through it, multimedia means can be utilised optimally, and additional help can be provided to students. That is because they are able to use interactive video.
7. It is applied because it provides access to curricula and training packages at any time and place. Thus, E-learning enables students to access information at any time they want.
8. It is applied because there it provides faculty members with various assessment methods for identifying the progress of students. Such methods may include including instant assessment methods.

The Advantages of E-learning

The application of E-learning has several advantages. Such advantages may include the following (Hassan Al-Batea, 2009):

1. E-learning involves modern ICT-based teaching aids. Such aids provide students with auditory and visual material simultaneously. The latter aids may include video conferences, interactive videos, and multimedia programs. They enable students to benefit more from the internet and its information resources. The conventional teaching aids aren't capable of performing the functions that are performed by modern ICT-based teaching aids.
2. E-learning enables students to overcome all the barriers that may hinder them from accessing the academic material (e.g., curricula and references. For instance, e-learning enables students to access the material even when they are outside the academic institution.
3. E-learning enables students to express their opinions freely. For instance, chatrooms and online forums enable students to express their opinions to one another about the subjects being discussed. That shall enable students to identify different views, enriching their knowledge and improving their skills.
4. E-learning enables students to communicate with faculty members. It enables students to send their inquiries to faculty members through various means, such as email messages.
5. E-learning enables students to revise lessons and information and access the curricula at any time.

6. E-learning provides faculty members with several assessment methods, including instant assessment methods. It provides faculty members with several methods for classifying and distributing information quickly and easily.
7. E-learning participates in developing the faculty member's skills in using modern technology.
8. E-learning reduces the expenses of printing curricula. Through eLearning, students shall use e-curricula. The content of e-curricula can be easily adjusted and corrected. Additions can be easily added to the content of e-curricula. E-learning provides access to e-libraries.

Contemporary E-learning Applications

E-learning applications are represented by the following (Rahman, 2008):

1. E-learning can be used in distance learning and training. That can be done by using computers, whether the material is recorded on CDs or available online or on the institution's network. E-learning can be practiced by using the internet or virtual lecture halls.
2. E-learning is a type of distance learning. However, there is a difference between these concepts in terms of content and methodology. In distance learning, students play a passive role. For instance, they receive information without engaging in the lesson nor interacting with the faculty member. In e-learning, students engage in the lesson and interact with the faculty member. Such interaction occurs by answering questions instantly or engaging in discussions through chatrooms or e-mail messages.
3. In distance learning, the materials provided to all students are the same. However, in e-learning, the material is designed based on the needs and capabilities of each student. In distance learning, the assessment process is carried out at the end of the program. However, in e-learning, the assessment process is carried out regularly during the semester. In e-learning, the assessment may be carried out by letting students answer questions instantly, engage in discussions, or do electronic assignments.
4. Today, e-learning is considered essential for developing students' knowledge. For instance, students' knowledge can be developed by letting them use ICTs and computer networks.

The Meaning of (Quality Education at Universities)

Quality education refers to the educational process through which an effective teaching approach is adopted. Providing quality education shall help in serving society. It shall also help in improving the potential of the ones searching for a job in organisations (Warfali). The provision high quality education is essential. Universities seek to provide such education to get a good rank among distinguished global universities. In order to provide quality education,

many universities seek to comply with quality standards. Complying with such standards shall improve the performance efficiency of their employees and improve their outcomes (Hamedto & Elyass). Quality education at universities refers to education that is based on several foundations. It refers to the education through which the potential and intellectual capabilities of faculty members are employed in a manner that promotes creativity among students. Providing quality education at universities shall help in improving organisations in an ongoing manner. It shall help in meeting the needs and desires of graduates. It shall improve the outcomes of universities and provide the labour market with graduates who are capable of designing programs for achieving ongoing development (Fincham, Rhodes, & others, 2005). Based on the previous information, providing quality education at universities requires adopting a comprehensive philosophy at the academic institution. The provision of such education shall be reflected positively on the administrative practices. It shall help in developing the educational process and the outcomes of the educational process. It shall help in raising the satisfaction levels of the faculty members, employers, and students and their parents (Sakarneh & Al-Shamsi, 2012).

The Requirements for Providing Quality Education at Universities

The requirements for providing quality education at universities may include (Lamia, Thana, & Hassan):

1. Setting goals based on reality and identifying the tasks that should be carried out. Such tasks must be executable.
2. Setting policies, systems, and mechanisms for ensuring that goals are met.
3. Complying with specific administrative and academic standards. Universities must also comply with standards related to resources, infrastructure, and student affairs.
4. Have benchmarks connected to the quality of education in various majors and degrees. Assessment should be carried out based on benchmarks.
5. Adopting advanced measurement systems and performance indicators in order to assess the effectiveness of policies and application systems and mechanisms. Such an assessment should be conducted in accordance with the goals that have been set.
6. Adopting a quality assurance system and a quality management system. Such systems must aim at achieving development, holding employees accountable, and reviewing things.

Previous Studies

Al-Nukari and Tarawneh (2018) conducted a study titled, “The Degree to which Jordanian Universities Achieve Quality Assurance Standards from the Dean of the Faculties and

Academic Department Heads' Point of View.” This study aimed at finding out the degree to which Jordanian universities achieve quality assurance standards from the deans of the faculties and academic department heads' point of view. The sample of the study consisted of 220 deans and department heads, with 59 deans and 161 department heads. They were chosen intentionally from three governmental universities and three private universities in Jordan. A developmental survey research methodology was used. The questionnaire was used as a tool to collect data, after determining its validity and reliability. The findings showed that the degree to which Jordanian universities achieve quality assurance standards from the deans of the faculties and academic department heads' point of view was high. There were significant differences at $\alpha \leq 0.05$ in the estimates of faculty deans and departments heads of the degree to which Jordanian universities achieve quality assurance standards, according to the job title variable. Among the Recommendations of the study: maintain the high degree of quality assurance standards in Jordanian universities by providing material and moral support to the employees of these universities, especially the deans of the faculties and academic department heads.

Sarikhani, Salari, and Mansouri (2016) conducted a study titled, “The Impact Of E-learning On University Students' Academic Achievement and Creativity.” This study aimed at finding whether the efficacy of ICT-based teaching methods in improving generic skills in addition to content skills among future workforce is increasing. Accordingly, this study investigates the impact of e-learning on creativity and content knowledge of chemistry students at the Payame Noor University of Hamedan, Iran. The study used the pre-test/post-test experimental design with a control group. The statistical population of the study included 100 pure chemistry students who were following two separate classes. Forty students were selected from this group and were placed in either the experimental group ($n = 20$) or the control group ($n = 20$). Two instruments were used for data collection; a specifically developed test on the Introduction to Chemistry course and the Abedi Inventory for assessing creativity. Results of data analysis using the independent t-test (aided by SPSS) demonstrated statistically significantly higher scores for the experimental group on measured variables, knowledge, and creativity. Therefore, it is concluded that e-learning is effective for knowledge and creativity acquisitions among chemistry students and that greater e-learning opportunities should be provided for wider audiences.

Yanuschik, Pakhomova, and Batbold (2015) conducted a study titled, “E-learning as a Way to Improve the Quality of Educational for International Students.” The article focuses on the problem of teaching mathematics to students of an engineering university learning in a non-native language. The results of a survey helped us identify the main difficulties facing international students when they begin their studies at Russian universities. We also describe a methodology of teaching mathematics using e-learning as web-based instruction. The use of e-

learning in the educational process improves the quality of practical training and provides a better understanding of the course.

Harif Mohammed Karar Abdul (2012) conducted a study titled, “Standards for Developing E-learning System.” When addressing issues related to e-learning, many scholars shed a light on E-learning-related standards. Compliance with such standards is very important. That is because such compliance shall enable academic institutions to provide distinguished electronic education. Such compliance shall enable academic institutions to comply with the requirements of the contemporary age. Academics, technicians, experts in technology and experts in various fields are responsible for developing such standards and complying with them. That shall ensure complementarity in developing such standards and complying with them. The latter study is divided into four chapters. It sheds a light on several important issues, such as: developing an e-learning system and educational programs. The first chapter sheds a light on the meaning, types, advantages, defects, and limitations of e-learning. It sheds a light on the impacts of e-learning on the educational process. The second chapter sheds a light on the standard specifications of e-learning and a system called (SCORM). The third chapter sheds a light on standard models that are used when developing educational programs. The fourth chapter presents the study’s results.

In 2012, Sakarneh and Al-Shamsi (2012) conducted a study titled “E-learning and its Role in Raising the Training Effectiveness.” The latter study is a field study. It aimed to explore the relationship between e-learning and training effectiveness. It was conducted at the police academy in the United Arab Emirates. The study sample consists of all the faculty members working at the latter academy. It also consists of several students who were selected from the latter academy. To be specific, it consists of 220 members. The latter researchers made several conclusions. Through using a questionnaire, it was found that E-learning:

- Enables faculty members to employ conventional and modern teaching methods jointly.
- Enables faculty members to promote interaction and collaboration among students within the classroom.
- Enables faculty members to identify the goals sought from e-learning. E-learning enables faculty members to adopt various teaching methods for supporting different learning styles that shall enable faculty members to meet various expectations and the needs of students.
- Enables faculty members to participate in the processes of developing curricula. Through e-learning, curricula shall be developed in accordance with e-learning requirements.

In order for students in e-learning to succeed:

- They must have adequate knowledge about the use of a computer and the internet.

- They must regularly perform the duties that are performed by the students enrolled in the conventional education system.
- Not all courses can be easily or effectively taught online. For instance, teaching motor skills online requires using simulation models that are designed skilfully. Besides, there are some courses that can be taught better by using conventional teaching methods, such as law courses.
- E-learning shall be equivalent to conventional learning in terms of the effectiveness when employing suitable strategies and ensuring that the tasks assigned to students are clear. E-learning shall be considered so when ensuring that there is an interaction between students. It shall be considered so when providing faculty members with feedback by students and providing the management of the educational institution with feedback by faculty members.

In 2012, Seyam conducted a study titled, “The contribution of e-learning in ensuring the provision of higher education of high quality.” The latter study is a case study. It aimed to explore the contribution of e-learning in ensuring the provision of higher education of high quality. It targets the education provided to the students majoring in accounting in Jordanian universities. It aimed to measure the extent of awareness of faculty members at accounting departments at Jordanian universities about the significance of e-learning in improving the quality of accounting education. It aimed to identify the extent of applying e-learning in higher educational institutions and the advantages of applying e-learning in improving the quality of university education and achieving human development. To meet the study’s goals, a questionnaire was developed. The questionnaire forms were distributed by hand to the members of the sample. The sample consists of several faculty members who were selected from the accounting departments at Jordanian universities. Sixty questionnaire forms were distributed. However, only 52 questionnaire forms were considered valid for statistical analysis. After analysing the data collected through the questionnaire forms, it was found that the faculty members in accounting departments realise the significance of e-learning in improving the quality of accounting education. However, the application of e-learning for teaching accounting students is still limited. That is because several obstacles hinder faculty members in accounting departments from applying e-learning. Such obstacles may include a lack of financial and technical capabilities. There are also obstacles connected to students and faculty members.

Bawaneh (2011) conducted a study titled, “Using Computer Technology and Course Web Pages to Improve the Student performance in Accounting Courses.” The latter study aimed to shed a light on e-learning in Southeast Missouri University. It aimed to identify the extent to which e-learning can be applied in teaching two accounting courses. These courses are administrative accounting and cost accounting. It aimed to identify the impact of using modern information technologies in the process of teaching the latter courses. The targeted technologies

are e-mail messages and PowerPoint programs. Through personal observation, the latter researcher found that applying e-learning has many advantages. For instance, e-learning provides students with additional and full information at such courses. By using the questionnaire, it was found that using modern information technologies can effectively improve the process of teaching the latter courses. It was found that using modern information technologies should improve the academic achievement of students at these courses. It was found that using modern information technologies shall improve student's understanding of the information at these courses.

Method & Procedures

The Study's Approach

A descriptive-analytical approach was adopted. For instance, the descriptive approach was adopted for describing the variables of the present study. As for the analytical approach, it was adopted for exploring the impact of applying e-learning system to improve the quality of university education in Jordan.

The Study's Population and Sample

The study's population consists of all the faculty members who work at 34 Jordanian universities. The population size is big. Thus, the convenience sampling method was used for selecting a sample. One hundred and fifty questionnaire forms were distributed. However, 132 questionnaire forms only were retrieved. Thus, the response rate is 88%. Twelve questionnaire forms were excluded because they are not valid for statistical analysis. They were excluded because they include items that are not answered. Thus, 120 questionnaire forms were analysed statistically. That means that 80% of the questionnaire forms are valid for statistical analysis.

The Study's Tool

After reviewing the relevant studies and literature, a questionnaire was developed by the researcher for collecting data. The questionnaire consists of 20 items. These items shed light on the study's dependent and independent variables. After developing the questionnaire, its validity and reliability were measured. Information about that is presented below. The adoption of a scale to measure the study variables was divided into three levels. The cut-off grade was calculated by dividing the difference between the highest value of the Likert scale (5) and the lowest value in it (1) at three levels, namely that the cut-off grade is $1-5 / 3 = 1.33$. Thus, the three levels are as follows:

1. Low applying: (1-2.33).
2. Medium applying: (2.34-3.67).
3. High applying: (3.68-5).

The Validity of the Tool

To check the content validity of the questionnaire, the questionnaire was passed to three experts. These experts are faculty members working at Zarqa University, they suggested paraphrasing some items. They suggested also replacing some items with other items that are related to the study's goals.

The Reliability of the Tool

In order to measure the reliability of the instrument, the internal consistency was measured. The internal consistency was measured by calculating the values of the Cronbach Alpha coefficient. The total value of the Cronbach Alpha coefficient is 0.869. The latter value is considered accepted in administrative and human sciences research. The values of the Cronbach Alpha coefficient are presented below in Table 9.5.

Table 1: The Values of the Cronbach Alpha Coefficient

Variable	# of items	The value of the Cronbach Alpha Coefficient	Percentage of the Cronbach Alpha Coefficient
The extent of employing computer skills	7	0.765	%76.5
The extent of employing E-learning tools	7	0.833	%83.3
Quality of university education	6	0.846	%84.6
Total	20	0.814	%81.4

Sources of Data Collection

Two types of data sources are relied upon in this study: primary sources and secondary sources, as follows:

1. Preliminary Data: is the data that was obtained through a questionnaire designed especially to this study, which covered all topics and variables that dealt with the theoretical framework and the study hypotheses, as well as the questionnaires distributed to a study sample of faculty members in Jordanian universities
2. Secondary Data: is the data that was obtained from the sources in the libraries of Jordanian universities, and the literature review contained in the relevant studies, in order to accomplish the theoretical and intellectual framework for this study.

The Statistical Methods

The Researcher used statistical descriptive and analytical methods, which it is available in the Statistical Package for Social Sciences (SPSS), in order to analyse the data.

Results Related to the Study's Question

What is the extent of applying an e-learning system in Jordanian universities from the perspective of the faculty members? To answer this question, means and standard deviations were calculated for identifying the extent of applying e-learning system in Jordanian universities from the perspective of the faculty members. These values are listed in Table 2:

Table 2: Means and Standard Deviations of the Extent of Applying E-Learning System in Jordanian Universities from the Perspective of the Faculty Members (N = 120)

No.	Dimensions of applying e-learning system	Mean	Standard deviation	Rank	Level
1	The extent of employing computer skills	3.86	0.49	1	High
2	The extent of employing E-learning tools	3.42	0.41	2	Moderate

Based on Table 2, the extent of employing computer skills in Jordanian universities is ranked first, because the relevant mean is 3.86. It was found that the extent of employing computer skills in Jordanian universities is high. It was found that the extent of employing e-learning tools in Jordanian universities is ranked second because the relevant mean is 3.42. It was found that the extent of employing e-learning tools Jordanian universities is moderate.

Results of Testing the Study's Hypotheses

The researcher measured data homogeneity and sampling adequacy. The researcher also checked that there is not any multicollinearity between the independent variables

Measuring the Data Homogeneity

The researcher made sure that the data is homogeneous by conducting the t-test. The results are presented in Table 3.

Table 3: The T-Test for Measuring the Data Homogeneity

Variable	Calculated t value	Df.	T value
The extent of employing computer skills	86.959	119	0.000
The extent of employing E-learning tools	104.547	119	0.000
The quality of university education	98.673	119	0.000

Based on the Table 3 above, it is clear that the study's data is homogeneous. That is because all the significance values (sig.) are less than the statistical significance level of $\alpha = 0.05$.

Measuring the Sampling Adequacy

The sampling adequacy was measured by conducting the Kaiser-MeyerOlkin (KMO) test. The results of the latter test are presented in Table 4:

Table 4: The Results of the Kaiser-Meyer-Olkin (Kmo) Test for Measuring the Sampling Adequacy

Statistical indicators	Result
KMO	0.582
Sig.	0.000

Based on Table 4, it was found that the selected sample is adequate for meeting the study's goals. That is because the KMO value is 0.582, which is greater than 0.5. The significance value is less than the statistical significance level of $\alpha = 0.05$.

The Variance Inflation Factors

Table 5 presents the values of the variance inflation factors. They are calculated to ensure that there is not any multicollinearity between the independent variables (i.e., the extent of employing computer skills and the extent of employing e-learning tools).

Table 5: The Values of the Variance Inflation Factors for Ensuring that there is Not Any Multicollinearity between the Independent Variables

No.	independent variable	Tolerance	VIF	Critical value
1	The extent of employing computer skills	0.876	1.14	5
2	The extent of employing E-learning tools	0.956	1.05	5

Based on Table 5, it can be observed that there isn't any multicollinearity between the independent variables (i.e., the extent of employing computer skills and the extent of employing e-learning tools). That is because the values of the variance inflation factors of the latter variables are 1.14 and 1.05 respectively. All the VIF values are less than the critical values (5). After presenting the character of the study's data, the results of the hypotheses tests are presented below.

Results of Testing the Main Hypothesis

- H0: There is no statistically significant impact at the significance level ($\alpha \leq 0.05$), for the application of the E-learning System in terms of their dimensions (The extent of employing computer skills, the extent of employing E-learning tools) on improving the quality of university education for the sample of Jordanian Universities.
- To test the main hypothesis, the multiple linear regression analysis was conducted. The results of the last analysis are presented through Table 6 below:

Based on table 6, the following can be concluded

1. The multiple linear regression model is reliable because the calculated F value is 22.337, and the significance value is less than the statistical significance level of $\alpha = 0.05$.
2. The values of the regression coefficient (β) of the extent of employing computer skills and the extent of employing e-learning tools are statistically significant. That is because the statistical significance values are less than the statistical significance level of ($\alpha = 0.05$), that means that the main null hypothesis is rejected, and the alternative hypothesis is accepted. Thus, applying the e-learning system dimensions has a statistically significant

impact at the statistical significance level of $\alpha = 0.05$, on improving the quality of university education in Jordan. These dimensions are the extent of employing computer skills and e-learning tools.

- The coefficient of determination $R^2 = 0.276$. Thus, 27.6% of the changes that occur to the quality of the university education in Jordan can be attributed to the application of the e-learning system.

Table 6: The Results of the Multiple Linear Regression Analysis

Variable	Value of the regression coefficient (β)	Standard error	Calculated t – value	Sig.
Constant β_0	1.487	0.423	3.518	0.001
The extent of employing computer skills	0.520	0.095	5.480	0.000
The extent of employing e-learning tools	0.203	0.078	2.598	0.011
The value of the correlation coefficient (R) = 0.526	The coefficient of determination $R^2 = 0.276$			
The calculated F value = 22.337	Sig.= 0.00			

The sub-hypotheses are tested separately below

Results of testing the first sub-hypothesis

- H01: There is no statistically significant impact at the significance level $\alpha \leq 0.05$, for the extent of employing computer skills on improving the Quality of University Education in Jordan.

A simple linear regression analysis was conducted for testing the first sub-hypothesis. The results of the latter test are presented in Table 7.

Table 7: The Results of the Simple Linear Regression Analysis for Testing the First Sub Hypothesis

The independent variable	Value of the regression coefficient (β)	Standard error	Calculated t value	Sig.
Constant β_0	3.132	0.332	9.423	0.000
The extent of employing computer skills	0.292	0.085	3.428	0.001
The value of the correlation coefficient (R) = 0.301	The coefficient of determination $R^2 = 0.091$			
The calculated $F - value = 11.753$	Sig.= 0.001			

Based on table (7), the following results were concluded

1. The multiple linear regression model is reliable because the calculated $F - value$ is 11.753 and the significance value is less than the statistical significance level of $\alpha = 0.05$.
2. The value of the regression coefficient (β) of the extent of employing computer skills is statistically significant. That is because the statistical significance value is less than the statistical significance level of $\alpha = 0.05$. This means that the null first sub-hypothesis is rejected, and the alternative hypothesis is accepted. Thus, employing the computer skills dimension has a statistically significant impact at the statistical significance level of $\alpha = 0.05$ on improving the quality of university education in Jordan.
3. The coefficient of determination $R^2 = 0.091$. That means that 9.1% of the changes that occur to the quality of university education in Jordan can be attributed to the extent of employing computer skills.

Results of testing the second sub-hypothesis

- H_{02} : There is no statistically significant impact at the significance level ($\alpha \leq 0.05$), for the extent of employing E-learning tools on improving the Quality of University Education in Jordan.

The simple linear regression analysis was conducted for testing the second sub-hypothesis. The results of the latter test are presented in Table 8 below.

Table 8: The Results of the Simple Linear Regression Analysis for Testing the Second Sub Hypothesis

The independent variable	Value of the regression coefficient (β)	Standard error	Calculated t value	Sig.
Constant	2.075	0.366	5.674	0.000
The extent of employing E-learning tools	0.571	0.095	6.013	0.000
The value of the correlation coefficient (R) =0.484	The coefficient of determination R ² =0.235			
The calculated F value =36.161	Sig.= 0.000			

Based on table (8), the following results were concluded

1. The multiple linear regression model is reliable because the calculated F-value = 36.161, and the significance value is less than the statistical significance level of $\alpha = 0.05$.
2. The value of the regression coefficient (β) of the extent of employing e-learning tools is statistically significant. That is because the statistical significance value is less than the statistical significance level of $\alpha = 0.05$. This means that the null second sub-hypothesis is rejected, and the alternative hypothesis is accepted. Thus, employing e-learning tools dimension has a statistically significant impact at the statistical significance level of $\alpha = 0.05$ on improving the quality of university education in Jordan.
3. The coefficient of determination R² = 0.235. That means that 23.5% of the changes that occur in the quality of the university education in Jordan can be attributed to the extent of employing the e-learning tool.

Conclusion

Several results were reached through this study, such as:

1. The mean of employing computer skills is high. That indicates that the attitudes of faculty members at Jordanian universities towards this dimension are positive. That means that the extent of employing this dimension is high from the respondent's perspective. This dimension is ranked first among the interests and priorities of faculty members at Jordanian universities
2. The mean of employing e-learning tools is high. That indicates that the attitudes of faculty members at Jordanian universities towards this dimension are positive. That means that the extent of employing this dimension is high from the respondent's perspective. This

dimension is ranked second (last) among the interests and priorities of faculty members at Jordanian universities

3. The application of the e-learning system dimensions has a statistically significant impact at the statistical significance level of $\alpha = 0.05$ on improving the quality of university education in Jordan. These dimensions are the extent of employing computer skills and e-learning tools.
4. Employing computer skills dimension has a statistically significant impact at the statistical significance level of $\alpha = 0.05$ on improving the quality of university education in Jordan
5. Employing e-learning tools dimension has a statistically significant impact at the statistical significance level of $\alpha = 0.05$ on improving the quality of university education in Jordan.

Recommendations

Based on the previous results, the researcher recommends the following:

1. Provide more attention to the employment of e-learning tools in Jordanian universities. That is because the extent of employing e-learning tools in Jordanian universities is ranked second (last).
2. Hold training courses and workshops for faculty members to improve their skills in applying e-learning systems in the teaching process. Such courses and workshops should promote knowledge about such use.
3. Provide faculty members at Jordanian universities with a guide about the most important e-learning tools.
4. Conduct similar studies in the future by selecting other variables and statistical analysis methods.

Acknowledgment

This research has been supported by Zarqa University, Jordan.

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