

The role of e-learning in improving the quality of educational outcomes in Jordanian higher education institutions

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ABSTRACT

This study investigates how e-learning can raise the caliber of education provided in Jordanian higher education institutions. The study looks into how e-learning affects educational quality by taking into account individual demands, perceived learning value, and technological and electronic requirements. Using a questionnaire, information was gathered from professors at six Jordanian private universities in Amman. The findings underscore the significance of e-learning mandates and the moderating function of upper management backing in augmenting academic achievements. Faculty members should be empowered, and tools should be made available to maximize learning results.

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1. Introduction

This era is marked by numerous changes in the field of communications and information technology (AL-Sous et al., 2023). Many sectors have benefited from this development, such as education, which has effectively invested in this progress, whether by integrating these developments into the traditional process or through the creation of advanced and integrated education that depends mainly on the provision of high-quality ways and communication technology that has been called by many names such as e-learning, distance education, digital education, and virtual education (Al-Adwan & Smedley, 2012). E-learning is using information and communication technology to enforce the education system whereas, the instructors and learners are separated by distance, time, or both, to develop the capacity of learners to learn and improve their experience (Kattoua et al., 2016).

The globalization of the educational system is taking place thanks to the internet and technology as supporting tools. Furthermore, it is unquestionable that industrialized countries may offer several recommendations to emerging countries in this area. In general, the use of these technologies contributes significantly to economic growth. Furthermore, it is seen as an integral aspect of the educational process. Then completely modify the nature of the schooling process.

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2. Literature Review

Nowadays, all organizations seek to establish a successful strategy for e-learning (Macpherson et al., 2006; Seufert, 2003), stressing that two main components can affect the online learning system: (1) system development and design, and (2) system usability and acceptance. Jordanian universities should improve their teaching and learning process in parallel with the innovations of educational technologies. The Hashemite kingdom of Jordan as one of the developing countries focuses on the higher education sector to develop human growth in the country. The purpose of this study was to discover distinguished e-learning techniques in Jordanian universities. Furthermore, this study used a descriptive technique. A questionnaire was designed and delivered to a sample of students from numerous public universities. The results revealed a deficiency in the adoption of e-learning strategies in the universities (Al-Tarawneh, 2011; Khasawneh & Yaseen, 2017). Lee and Lim (2007) discussed the status of e-learning in the universities of South Korea, the sample included (201) public and private universities. The study indicated that 85% of universities use e-learning services. Then the researchers suggested a way to raise the level of competition among Korean universities by motivating the staff and preparing criteria for assessing the level of faculty members in an e-learning environment. Rapid technological advancements have altered the methods of education and training for e-learning programs. Al-Mushasha and Nassuora (2012) did a study to identify the elements that influence the quality of e-learning in Jordan's higher education setting. A survey of 189 students from various colleges was tested using an exploratory factors analysis to determine reliability and validity, as well as a multiple regression analysis.

3. Advantages and disadvantages of e-learning:

There are many advantages of e-learning such as:

1. It allows the learners to develop their knowledge by using the latest technologies.
2. It allows the learners to apply many different learning styles
3. Availability (anywhere, anytime) which means helping students access the materials from anywhere and anytime.
4. Less expensive to deliver and saves time.

While disadvantages:

1. Absence of the learning atmosphere between students and instructors in e-learning style.
2. Minimize the level of contact between students.
3. When compared with the traditional learning style, the learning style is less efficient.

4. Problem statement

Jordanian universities must upgrade and develop their teaching and learning processes to accommodate the new educational technology innovations to ensure the quality of education for the long term. Nowadays, e-learning is considered as one of the fields that is rapidly growing because of the development of Information and communications technology and the increasing demand for involving the technology in education or the adopted learning style in higher education institutions. Such integration must be applied to build a generation of students and instructors to be treated with modern required technological terms and tools and employ it with the process of education. The acceptance and utilization of ICT in universities in the teaching and learning process is still limited. However, the transition from the traditional learning style to e-learning is a challenge since it needs many requirements such as providing the students and teaching staff with required personal skills by training them to be prepared to use the technological tools. Furthermore, the adoption of e-learning needs a suitable environment which can be described as an infrastructure that has technical and electronic hardware or software. Based on that, this will positively reflect on both the perceived value of e-learning and the quality of education in higher education institutions.

5. Research questions

To bridge the research gap, this paper is trying to investigate the relationships between the suggested e-learning factors, and the quality of higher education institutions; it examines the impact of these factors by answering the following questions:

1. How does e-learning affect educational quality in Jordanian higher education institutions?
2. How do technological and electronic requirements affect education quality in Jordanian higher education institutions?
3. How does a personal requirement affect educational quality in Jordanian higher education institutions?
4. How does perceived learning value affect educational quality in Jordanian higher education institutions?

6. Research hypotheses

Based on the studies, this report identified three e-learning factors: technical and electronic requirements, specific requirements, and comprehending the value of learning. Furthermore, it examined the relationship between e-learning

elements (as independent variables) and educational quality (as dependent variables) using top management support as a mediator. Based on that, this research proposed the following hypothesis:

H_{a1}: *E-learning requirements help improve the quality of education outcomes.*

H_{a2}: *E-learning requirements help on the level of top management support.*

H_{a3}: *Top management support helps improve the quality of education outcomes.*

H_{a4}: *E-learning requirements improve the quality of education outcomes through top management support as a mediator.*

7. Model of the study

7.1 Theoretical background

Several higher education institutions are attempting to implement e-learning as a practical approach to improving educational quality, especially considering the requirement for educational continuity during the COVID-19 pandemic. Nowadays, the question is whether it is feasible and effective to shift away from the old learning method and toward this alternative. Several studies have categorized e-learning. According to Alismaiel (2021), e-learning is a style of education that systematizes training using online databases or resources. According to Looi (2021), e-learning is a method that contains major psychological and social elements. Various technologies such as media and learning support tools will be used in e-learning throughout the learning process, starting with application and ending with evaluation (Njenga & Fourie, 2010). Specialties believe that e-learning will improve the type of learning in higher education institutions because it allows students to access universal learning resources more easily as well as improve the required individual efforts of students during their studies (Sandybayev, 2020). The advancement of information and communication technology (ICT) enables new educational methods:

Technical and electronic requirements: applying to an e-learning environment needs the planning of a technological infrastructure such as hardware and software (Pislae-Ngam et al., 2018).

Specific requirements: a systematic approach must be followed to Implement e-learning instead of the traditional university's teaching method. Since the design of the old, adopted learning style has been lengthy (Sandybayev, 2020). Despite their lack of preparation, many universities had to adopt e-learning during the Corona epidemic because of the procedures of lockdown. Although many universities successfully moved to e-learning as an alternative solution instead of the traditional learning style, the consequences of this transition from the following traditional learning style to the e-learning style were not completely clear (Goh et al., 2020). Since most of the instructors and students were not completely prepared for online instruction and did not have the enough knowledge or practical required skills, this can be described as a personal dimension, which is mainly associated with the demand of practicing to utilize modern information technology tools. The Perception of students and instructors about e-learning activities through computer use can be described as "learner attitudes." For example, whenever learners have worries about the complexity of using computers in education, this will badly reflect on their productivity and their ability to learn. Faqih (2016) defines "perceived value" in the context of e-learning as learners' entire judgment of the impact of learning based on their perceptions on what is received and what might be offered. Perceived value can affect students' determination to accept and use e-learning tools.

Top management support: Top management is defined as the higher level of the organization's hierarchy. Top management support is one of the most critical success factors for organizational survival and growth not only at the day-to-day level and regular operations but for long-term achievements (Fareed et al., 2023). Top management is responsible for setting SMART objectives and formulating the right strategies to achieve these objectives efficiently and effectively. According to Madyan et al. (2023) empowerment, development and promotion, opportunities are cornerstones in supporting employees. Enhancing self-esteem is another method of support in High education organizations, mainly Universities. In universities, top management is guided by the requirements for implementing operations specifically in private universities, because resources are limited, the support must be provided considering what is needed for achieving goals and avoid any kind of waste (Elbanna, & Newman, 2022). Quality of education can be defined as a strategy plan that aims to employ information resources, skills, and capabilities to enhance and achieve the sustainable optimization of higher education institutions' performance. Which can be achieved by the interactive integration between the following educational process and operation in the higher education institution and the experience, knowledge of educational outcomes.

The purpose of this study is to develop a conceptual theoretical framework depending on prior research, which will be used as a model to be tested in Jordanian high education institutions. This model considers one variable: educational quality.

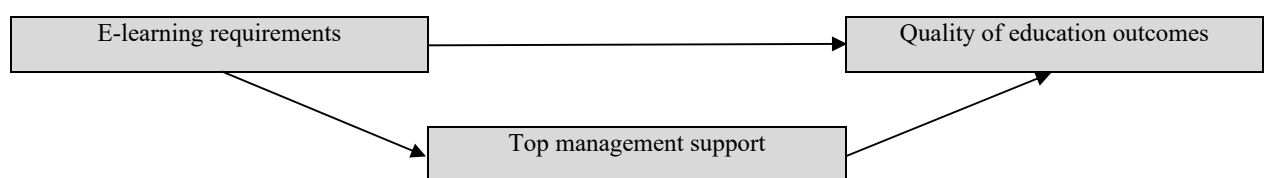


Fig. 1. The proposed study

The study intended to examine the impact of the availability of e-learning requirements in terms of the technical and electronic, and human on improving the education outcomes at the Private Jordanian universities (See Fig.1). The study population involves the (6) Jordanian Private Universities operating at Amman. The sample of the study encompasses faculties' members who are not occupying managerial positions. Those are engaged in the educational and learning process and devoted their time and efforts for teaching. For collecting data and information related to the study's variables. A questionnaire was developed containing 4 parts, the first is concerned with the sample characteristics, the second part is concerned with the independent variable, while the third is related to the mediator and the fourth is developed to measure the dependent variable. Likert 5 scale of agreement was utilized in parts 2, 3, and 4 questions. In this survey, 284 questionnaires were distributed electronically. 269 were recovered, and statistically analyzed. Smart Pls (4) program was used for statistical analysis, the results are as follows:

7.2 The reliability and validity of the results

In this part of the statistical analysis the researchers calculated Cronbach's alpha, and composite reliability and (AVE) test for the 3 variables. The results in Table 1 manifest that all the values of the reliability results are > 0.70 and the results of (AVE) are > 0.50 . According to Hair et al, (2017) this means that the questionnaire is reliable and valid.

Table 1
Reliability and validity results

Variables	Cronbach's alpha	Composite reliability ©	Average variance extracted (AVE)
e- learning requirements	0.802	0.902	0.630
Education outcomes	0.842	0.849	0.615
Top management support	0.814	0.828	0.641

The frequency and percentage were employed to express the features of the sample and based on the results it was found that 74.8 % of the sample are males while 25.2 % are females, all of them had Ph.d degrees , and older than 30 years old , 87.3 % had more than 3 years' experience in high education . The means and standard deviations were estimated for the 3 variable questions, based on Likert 5 points agreement scale. The results in Table 2 show that all the means are > 3.66 . Relying on the scale of means interpretation. The means that ranged from 3.66 to 5 indicated a high level of agreement. The table confirmed a high degree of satisfaction of the availability of e- learning requirements in terms of technological (hardware and software), the necessary specialized training courses, and the suitable layout that makes the teaching process more effective. The means of the dependent variable show a satisfactory level of achieved education outcomes at the surveyed universities. The third part of Table 2 indicates that top management provides adequate support to all faculty members in terms of the information, training, and technical needs to carry out the educational process in the best possible way.

Table 2
Descriptive statistics results

Variables	Means	Standard Deviation
e- learning requirements		
E-teaching is better than traditional teaching	4.11	0.685
Online teaching is Not secured	3.78	0.842
Improves preparation and driving of teaching	3.83	1.013
The college has activities and training to develop the student's professional and practical skills.	3.74	1.03
The devices, equipment, and laboratories available at the college are sufficient.	3.79	0.932
The devices, equipment, and laboratories available at the college are modern and advanced.	3.8	0.996
The college's devices, equipment, and laboratories are maintained on a regular basis	3.8	1.023
Quality of education outcomes		
The educational goals and academic standards of the major are clear and stated.	3.87	3.87
Programs/courses are linked to the needs of the labor market.	3.91	3.91
Modern teaching and learning methods and teaching aids are available.	3.93	3.93
Faculty members are regular in lectures and serious about teaching.	3.79	3.79
Students participate in the ongoing evaluation of the educational process within the college throughout the academic year year.	3.91	3.91
Top management support		
The availability of the needed information	4.34	0.561
Financial and non- financial incentives	4.35	0.55
Empowerment (delegation the authority of making decisions)	4.16	0.699
Availability the needed physical resources and facilities	4.19	0.736

7.3 Hypotheses testing results

Smart PIS (4) program was utilized to test the study's hypotheses. Fig. 2 shows the values of t sig. < 0.05 , moreover table (3) displayed the coefficient results of the study hypothesis path. Based on Hair et al. (2017) if the value of t sig is less than 0.05 it means that there is a statistically significant impact of the independent variable on the dependent. The results of Ha1 indicated a statistically significant impact of E- learning requirements on improving the quality of education outcomes. The results

of Ha2 indicated a statistically significant impact of E- learning requirements on the level of top management support. The results of Ha3 indicated a statistically significant impact of top management support on the quality of education outcomes. While the results of Ha4 indicated a statistically significant impact of e-learning requirements on the quality of education outcomes through top management as a mediator with partial mediation.

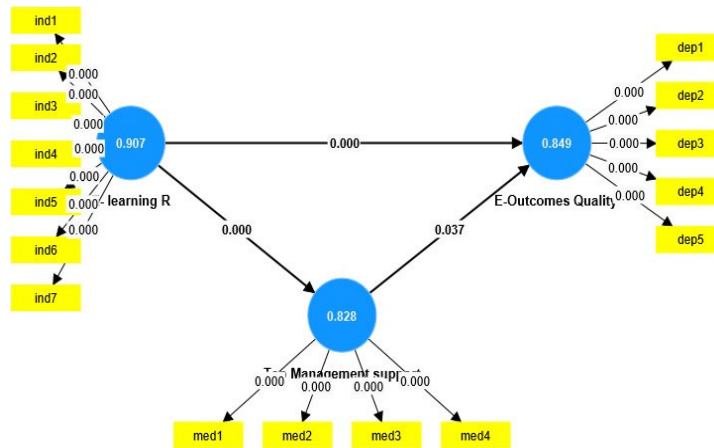


Fig. 2. The values of t sig

Table 3
The path coefficient and the indirect total effect results

The variables path	T value	T sig
E- learning → education outcomes	65.356	0.000
E- learning requirements →top management support	5.567	0.000
Top management support → education outcomes	2.087	0.037
The indirect effect		
E- learning R → Top Management support → E-Outcomes Quality	2.045	0.041

8. Conclusion and recommendations

The study aimed to examine the effectiveness of the availability of e- learning requirements on improving the quality of education outcomes, highlighting the role of top management support as a mediator. The results go with the Jordanian Ministry of high education and the Jordanian Universities vision to enhance the education and learning outcomes of high education. The purpose is to guarantee highly talented and skilled graduates. The findings of the study underlined the crucial role of top management in reinforcing the teaching process and in supporting faculty members, and in creating the best environment for creativity and innovation. Based on the results it is recommended to empower faculty members and equip them with the needed requirements for better learning outcomes.

References

Al-Adwan, A., & Smedley, J. (2012). Implementing e-learning in the Jordanian Higher Education System: Factors affecting impact. *International Journal of Education and Development using ICT*, 8(1).

Alismaiel, O. A. (2021). Using structural equation modeling to assess online learning systems' educational sustainability for university students. *Sustainability*, 13(24), 13565.

Al-Mushasha, N. F., & Nassuora, A. B. (2012). Factors determining e-learning service quality in Jordanian higher education environment. *Journal of Applied Sciences (Faisalabad)*, 12(14), 1474-1480.

AL-Sous, N., Almajali, D., Al-Radaideh, A., Dahalin, Z., & Dwas, D. (2023). Integrated e-learning for knowledge management and its impact on innovation performance among Jordanian manufacturing sector companies. *International Journal of Data and Network Science*, 7(1), 495-504.

Al-Tarawneh, H. (2011). A survey of e-learning implementation best practices in Jordanian Government Universities. *International Journal of Advanced Corporate Learning (iJAC)*, 4(2), 9-17.

Elbanna, A., & Newman, M. (2022). The bright side and the dark side of top management support in Digital Transformaion– A hermeneutical reading. *Technological Forecasting and Social Change*, 175, 121411.

Faqih, K. M. (2016). An empirical analysis of factors predicting the behavioral intention to adopt Internet shopping technology among non-shoppers in a developing country context: Does gender matter?. *Journal of retailing and consumer services*, 30, 140-164.

Fareed, M. Z., Su, Q., Abbas Naqvi, N., Batool, R., & Aslam, M. U. (2023). Transformational Leadership and Project Success:

- The Moderating Effect of Top Management Support. *SAGE Open*, 13(3), 21582440231195685.
- Goh, C. F., Hii, P. K., Tan, O. K., & Rasli, A. (2020). Why do university teachers use E-learning systems?. *The International Review of Research in Open and Distributed Learning*, 21(2), 136-155.
- Hair Jr, J. F., Matthews, L. M., Matthews, R. L., & Sarstedt, M. (2017). PLS-SEM or CB-SEM: updated guidelines on which method to use. *International Journal of Multivariate Data Analysis*, 1(2), 107-123.
- Kattoua, T., Al-Lozi, M., & Alrowwad, A. A. (2016). A review of literature on E learning systems in higher education. *International Journal of Business Management and Economic Research*, 7(5), 754-762.
- Khasawneh, M., & Yaseen, A. B. (2017). Critical success factors for e-learning satisfaction, Jordanian Universities' experience. *Journal of Business & Management (COES&RJ-JBM)*, 5(1), 56-69.
- Lee, J., & Lim, B. (2007). The current status of e-learning and strategies to enhance educational competitiveness in Korean higher education. *International Review of Research in Open and Distributed Learning*, 8(1), 1-18.
- Looi, K. H. (2021). Determinants of future preference for e-learning and its implications: A study of Malaysian business students. *Issues in Educational Research*, 31(3), 914-929.
- Macpherson, A, Homan, G., & Wilkinson, K. (2006). The implementation and use of e-learning in the corporate university. *Journal of Workplace Learning*, 17(1/2), pp.33-48.
- Madyan, M., Harymawan, I., Minanurohman, A., & Setiawan, W. R. (2023). The Impact of Top Management Education from Reputable Universities on Corporate Capital Structure: Evidence from Indonesia. *Global Business Review*, 09721509231182525.
- Njenga, J. K., & Fourie, L. C. H. (2010). The myths about e-learning in higher education. *British journal of educational technology*, 41(2), 199-212.
- Pislae-Ngam, K., Kantathanawat, T., & Pimdee, P. (2018). Requirements of E-learning for learning management of teacher and student in general education. *International Journal of the Computer, the Internet and Management*, 26(2), 129-36.
- Sandybayev, A. (2020). The impact of e-learning technologies on student's motivation: Student centered interaction in business education. *International Journal of Research in Tourism and Hospitality (IJRTH)*, 6(1), 16-24.
- Seufert, S. (2003). Cultural Perspectives. [online] Available at <http://elearningreviews.org/seufert/docs/cultural-perspectives.pdf> (accessed 10th April 2011).



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