

Critical Success Factor For E-learning in the Covid -19 Pandemic: A Case Study in Jordan

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Abstract

The questionnaire was in three parts. Part A was Availability of E-learning requirements related to technical, administrative and financial aspects Part B was Disadvantages of E-learning and Part C E-learning obstacles. And It was written using Google Forms, and the link was shared through multimedia. The reliability of instrument was determined. Data collected were analyzed using simple percentage and t_test and Anova was used to test the hypotheses. The result collected and analyzed showed that; the majority of study (84.0%) respondents were in the middle age between 29 to 48 years old. Males were accounted for less than one fifth (18.0%) of sample. And we found out through the results teachers with 12 to 22 years of experience found of obstacles of E- learning in comparison with those with the lowest number of years of experience, and that state schools have more obstacles than private schools.

Key Words: E-learning, COVID-19/Coronavirus pandemic, Teachers, Students, Classroom, Education, Challenges, Jordan.

Introduction

The definition of e-learning is the rapid development of computer technologies and programs. The increasing influence of the Internet on our lives and the use of various educational applications and platforms have affected the learning process. This demonstrates that teachers and students have recently begun to rely heavily on the use of PowerPoint files, PDFs, and emails to share notes, homework and sometimes take exams online, by using computers and web-based platforms. It has been argued that this term does not have a common definition ⁽¹⁾. E-learning can be referred to as virtual learning, digital learning, or

web-based learning. It can be used partly as part of the traditional teaching / learning process or entirely, depending on the materials delivered to students ⁽²⁾

Advantages and disadvantages:

E-learning is currently considered one of the best methods of learning, especially in higher education ⁽³⁾. For a number of advantages, including: Flexibility regarding time and space: Students are free to choose when and where to learn using technology, and in some cases, students are able to foster communication using forums and discussion groups in order to exchange different points of view. There is also another advantage of e-learning is that it facilitates distance learning, as many students can learn without the need to travel abroad in addition to that it allows to get the largest possible number of students without the need for more expenses and facilities. Others that

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e-learning also has a negative impact on the learning process⁽⁴⁾ One of the most prominent disadvantages of e-learning is the lack of personal interaction between students with each other and between teachers and students on the other hand. Hence, school students find it very difficult to cope with this method of learning. Electronic testing is also considered, as there are materials where we cannot apply all kinds of questions, such as essay questions⁽⁵⁾.

Before the COVID-19 pandemic, e-learning was increasing by about 15.4% annually in educational institutions around the world⁽⁶⁾ However, the research was conducted in July 2020, as educational institutions provided most of their services online, as this education was applied to more than 60% of students around the world due to global restriction measures to limit the spread of COVID-19⁽⁷⁾ Countries have also closed schools and universities, and switched to full e-learning mode during the spread of the Coronavirus, to avoid expected waves in the future⁽⁸⁾ This procedure was followed in line with the rules of social distancing, which were strongly recommended by the World Health Organization to prevent the spread of COVID-19⁽⁹⁾ The closures began in mid-March 2020, and it was not planned in advance, and not all educational institutions had the ability to smoothly deal with the closure plan as it had not been implemented before, and a difference was observed between educational institutions that were applying e-learning before and those who They did not implement this system. Since it was possible during typical times for students to visit the library, and to be able to go to places with good internet connection speed, before the COVID-19 pandemic, but during the COVID-19 pandemic everyone was on curfew, and the materials provided in the classroom were taught through E-learning is so well prepared before COVID-19, unlike during COVID-19 where no training sessions were planned.⁽⁶⁾ Habits of mind are assessed as part of the educational process, as the teacher's role is essential in developing habits of mind by focusing on learning specific concepts

through clear teaching strategies⁽¹⁰⁾ The teacher is responsible for managing the learning process, which in turn facilitates students' learning in a meaningful way. The digital revolution has given educators a growing set of digital tools to achieve these results. (11) Teachers can provide direct directions to students when using Internet face-to-face technologies simultaneously, which has resulted in superior results for students compared to various other teaching methods, including traditional teaching (12,13)

The Field Survey and Public Opinion Department at the Center for Strategic Studies at the University of Jordan carried out its sixteenth survey in a series of surveys "The Jordanian Indicator - The Pulse of the Jordanian Street" during the period from 3/22/20 / . 2020, in a sample representative of the Jordanian community and from all governorates, with the result that (89)% strongly support the suspension of schools and universities until the end of the crisis.(14)

The aim of our study is to find the success and failure factor in e-learning among school students during the Covid-19 pandemic from the teachers' opinion.

Method

A. Participants

A total of 200 participants were recruited in the current study, the majority of study (84.0%) respondents were in the middle age between 29 to 48 years old. Males were accounted for less than one fifth (18.0%) of sample. The majority of respondents (76.5%) were bachelor degree holders. About one third of the sample had experience between 12 to 17 years.

B. Constructs of the study

We have three constructs Availability of E-learning requirements related to technical, administrative and financial aspects, Disadvantages of E-learning, and E-learning obstacles. Each category includes several variable: age, gender, educational level, Type of

school and experience.

Statistical Analysis

Data were analyzed by the Statistical Package for Social Sciences (SPSS) software version 11.0 (SPSS®: Inc., Chicago, IL, USA). Means, standard deviations, frequencies and percentages were produced. Independent t- test, one-way ANOVA test with Scheffe post hoc were used to compare between subgroups as appropriate. Furthermore, Pearson correlation coefficient used to test the correlation between overall mean of the outcomes. The level of significance was set at ($P \leq 0.05$).

Results

A. Sample description

A total of 200 participants were recruited in the current study, the majority of study (84.0%) respondents were in the middle age between 29 to 48 years old. Males were accounted for less than one fifth (18.0%) of sample. The majority of respondents (76.5%) were bachelor degree holders. About one third of the sample had experience between 12 to 17 years.

B. Reliability coefficient

The reliability coefficient (Cronbach's Alpha) of the study is 0.829, which is a good value reflecting a reliable measure of the study tool.

C. Study of items' means

The following part shows responses to the levels of the variables. Here, mean and standard deviation are calculated for each item. Higher mean value indicates more agreement on that item.

i. Availability of E-learning requirements related to technical, administrative and financial aspects

From table 1, only Item 3 and item 6 "The school administration encourages teachers to use the e-learning and computerized curriculum in teaching"

and "The computer lab official works with teachers and students constantly" have the highest mean values of 3.43(\pm SD=1.07) and 3.38 (\pm 1.17), respectively, with "agree" attitude. In general respondents' attitude was neutral regarding the availability of E-learning requirements related to technical, administrative and financial aspects.

ii. Disadvantages of E-learning

From table 2, the most prominent disadvantages of E-learning which respondents strongly agreed focused on financial, educational and values issues. These issues were summarized in the following; item 11, item 5, item 2, item 6, item 7, and item 10. On the contrary, the E-learning didn't affect the nature of relationship between the teachers and their students in term of effective communications, encouragement and answering questions and inquiries. Generally, respondents' attitude was agree regarding to the disadvantages of E-learning.

iii. E-learning obstacles

iv.

From table 3, the difficulty to apply E-learning in practical and laboratory materials, in addition to the frequent interruption of internet and the difficulty for parents to subscribe to the internet were considered to be the main strongly agree reported obstacles by respondents to using E-learning. In general, respondents' attitude was agree regarding the presence of obstacles of E-learning.

D. Correlation analysis

From table 4, the relation between construct 2 "Disadvantages of E-learning" and construct 3 "E-learning obstacles" is ($r=0.691$) which is a strong value. But the relation between construct 1 "Availability of E-learning requirements related to technical, administrative and financial aspects" and construct 2 "Disadvantages of E-learning" is negative with ($r=-0.616$) and the relation of construct 1 "Availability of E-learning requirements related to

technical, administrative and financial aspects “ with construct 3 “ E-learning obstacles “ which is negative ($r=-0.657$).

E. T tests and Analysis of variance

Are there significant differences in the levels of the study constructs that can be attributed to age, gender, Educational level, Experience and Type of school? Independent samples t-test will be used to test for gender while, analysis of variance (ANOVA) will be used to test for other personal variables. Age, gender, Educational level, Experience and Type of school.

From table 5, there is a moderate positive significant relationship between the disadvantages of E-learning and the presence of obstacles ($r=0.69$; $P<0.0001$), whilst there were a moderate negative relationship between availability of E-learning requirements with either disadvantages or obstacles of E-learning.

From table 6, there is a significant difference between type of school regarding the availability of

E-learning, private schools tend to have higher score in reporting positive answers regarding the availability of resources (3.3 ± 0.71) compared with state schools ($P<0.0001$).

From table 7, there is a significant difference between type of school regarding the disadvantages of E-learning, state schools tend to have higher score in reporting more disadvantages of using E-learning (3.6 ± 0.46) compared with private schools ($P=0.001$).

Teachers in the age group between 36 and 48 years old tend to report higher mean scores in presence of E-learning obstacles compared with the youngest age group ($P=0.018$). Also, teachers with 12 to 22 years of experience reported higher mean scores that confirm the existence of obstacles of E-learning in comparison with those with the lowest number of years of experience.

From table 8, there is a significant difference between type of school regarding the obstacles of E-learning, state schools tend to have higher score in reporting more obstacles of using E-learning (3.8 ± 0.52) compared with private schools ($P<0.0001$).

Table 1. Part A. Availability of E-learning requirements related to technical, administrative and financial aspects

Item	Mean	SD	Attitude
Item 1-The prevailing educational system continuously supports e-learning	2.64	1.14	Neutral
Item 2-School administration allocates part of the school's budget to support e-learning at the beginning of the school year	2.665	1.27	Neutral
Item 3-The school administration encourages teachers to use the e-learning and computerized curriculum in teaching	3.425	1.07	Agree
Item 4-E-learning goals doesn't branch into more commercial goals than educational	2.375	1.11	Neutral
Item 5-The speed of the internet is suitable to take advantage of the website services at all times	2.28	1.17	Neutral
Item 6-The computer lab official works with teachers and students constantly	3.38	1.17	Agree

Cont... Table 1. Part A. Availability of E-learning requirements related to technical, administrative and financial aspects

Item 7-The software used for e-learning is easy to handle	2.9	1.15	Neutral
Item 8-Students respond positively to the offered subject	2.7	1.10	Neutral
Item 9-Availability of educational material on the platform all the time increases the ability to understand the educational material	3.1	1.18	Neutral
Item 10-The student will benefit from the educational platform services and continuously follow them	2.7	1.15	Neutral
Item 11-The Ministry holds training courses for teachers on using computerized curricula	2.6	1.19	Neutral
Item 12-There are centers for receiving student complaints when there is any defect	2.8	1.16	Neutral
Item 13-The calendar is used to determine the dates and schedules of daily and final exams	3.2	1.05	Neutral
Overall	2.85	0.74	Neutral

Table 2. Part B. Disadvantages of E-learning

Item	Mean	SD	Attitude
Item 1-E-learning lacks effective communication between students and the teacher	3.9	1.05	Agree
Item 2-E-learning is a heavy burden on the head of the family when pursuing his children	4.4	.79	Strongly agree
Item 3-The student doesn't convinced of the necessity of e-learning as an alternative to traditional learning	3.8	1.07	Agree
Item 4-E-learning lacks confidentiality and honesty when answering tests	4.3	1.02	Agree
Item 5-Cheat prevention is difficult to control during electronic tests	4.5	.86	Strongly agree
Item 6-E-learning weakens students' attitudes and educational values, which are stipulated in the philosophy of education	4.3	.91	Strongly agree
Item 7-It reduces students' skills in cooperative learning and learning by playing	4.3	.95	Strongly agree
Item 8-The teacher feels that e-learning reduces their control over the course of the educational process	4.1	1.06	Agree
Item 9-The teacher hasn't technological skills that enable him to deal with the system	2.9	1.13	Neutral
Item 10-Students and their parents lack experience in using computer software	4.2	.93	Strongly agree
Item 11-The lack of a monetary factor affects the guardian's ability to provide computers and smart phones	4.5	.71	Strongly agree
Item 12- Reducing the communication between teachers and students and answering their questions	2.0	.89	Disagree

Cont... Table 2. Part B. Disadvantages of E-learning

Item 13-Reducing the encouragement by Teachers for their students to enter the platform and follow up on assignments and tests	2.0	.88	Disagree
Item 14-Lessons are not recorded for students using multimedia so the student can follow them	2.1	.93	Disagree
Item 15-Students are not encouraged with rewards and certificates of appreciation for their continuous follow up	2.4	1.06	Disagree
Item 16-There is no phone number or email to communicate with school instructions and student inquiries	2.2	1.11	Disagree
Overall	3.5	.48	Agree

Table 3: Part C. E-learning obstacles

Item	Mean	SD	Attitude
Item 1-Some e-learning programs are expensive	3.89	.91	Agree
Item 2-E-learning is difficult to apply in materials that require practical application and laboratories	4.37	.79	Strongly agree
Item 3-The connection to the system is frequently interrupted due to internet pressure	4.36	.73	Strongly agree
Item 4-Students don't follow the periodic program to broadcast lessons on your lesson channel	3.53	1.03	Neutral
Item 5-There are deficiencies in the services provided by the system and the mechanism for answering questions	3.74	.98	Agree
Item 6-Students can't see their ratings and scores	2.42	.98	Disagree
Item 7-There is no coordination between the Ministry of Communications and the Ministry of Education in supporting distance learning	3.14	1.09	Neutral
Item 8-Discourage continuous use of E-learning	4.04	1.15	Agree
Item 9-It is difficult for all parents to subscribe to the Internet	4.26	.94	Strongly agree
Overall	3.75	.54	Agree

Table 4. Correlation analysis .

Construct	Part A	Part B	Part C
Part A	1	- 0.616* P<0.0001	-0.657* P<0.0001
Part B	- 0.616* P<0.0001	1	0.691* P<0.0001
Part C	-0.657* P<0.0001	0.691* P<0.0001	1

Table 5: Mean, standard deviation, t value, P-value and F –value according to part A, part B and part C.

PART	Variable		Mean (SD)	P- value*
A. Availability of E-learning requirements related to technical, administrative and financial aspects	Type of school	State Private	2.6(.68) 3.3(.71)	t=-5.49 P<0.0001
B. E-learning disadvantages	Type of school	State Private	3.6(.46) 3.3(.50)	t=3.39 P=0.001
C. E-learning obstacles	Age	22-28 years 29-35 years 36-42 years 43-48 years ≥49 years	3.2(.62) 3.7(.54) 3.7(.55) 3.8(.48) 3.7(.51)	F=3.063 0.018
	Experience	<5 years 6-11 years 12-17 years 18-22 years >22 years	3.5(.67) 3.6(.46) 3.8(.56) 3.8(.51) 3.6(.35)	F=2.79 P=0.027
	Type of school	State Private	3.8 (.52) 3.4 (.49)	t=4.15 P<0.0001

Discussion

E-learning includes the use of digital tools for teaching and learning. It uses technological tools to enable learners to study anytime, anywhere. It involves training, providing knowledge and feedback, so the fact that some school administrations encourage

teachers to use e-learning and computerized curricula in teaching and provide the necessary assistance from laboratory evaluators to teachers and students constantly increases the success of e-learning. ⁽¹⁶⁾

E-learning can be cost effective for many universities and schools because when learning

platforms are set up, they can be reused in many sessions.⁽²⁾

The Opinion Polls and Field Survey Department at the Center for Strategic Studies at the University of Jordan carried out 4-7 / 4/2020 on a sample representative of the Jordanian society and from all the governorates of the Kingdom, where it was noticed that 80 % of those who follow the e-learning platform and the educational TV channels provided by the Ministry of Education believe that these The platforms are not as good as school education, as half of the “Darsak” platform students encountered technical problems while registering. And the follow-up process for this statute⁽¹⁷⁾.

E-learning in the study area constitutes a heavy burden on the head of the family when pursuing his children, as students and their parents lack experience in using computer programs in addition to the parent’s inability to provide computers and smart phones for all children in the same family.

Teachers believe that it is difficult to control the prevention of cheating during electronic exams, which in turn weakens the ability to evaluate the outcomes of the educational process, in addition to the difficulty of monitoring students’ attitudes and educational values stipulated in the education philosophy in addition to that e-learning reduces students’ skills in cooperative learning and learning through play. since Younger students want more contact with other students and communicate with the teacher⁽¹⁸⁾

There are also some technical problems related to the interruption of communication with the system due to the Internet or the lack of financial ability for parents to subscribe to the Internet So these obstacles can be avoided through government financial support, and IT infrastructure development⁽¹⁹⁾

Through media and electronic resources, which in turn can improve students’ attitude towards e-learning

We agree with others around the world that

teachers need more training courses to develop their expertise in software applications⁽¹⁸⁾

Jordanian teachers found that “continuing with the online learning model is unacceptable because it is socially and psychologically unhealthy measures of closures, closures and quarantines imposed by the Coronavirus, which have caused tension, frustration and depression.^[11] We can also summarize the impact of e-learning on university students and their teacher, In the students’ opinion, studying using e-learning is not equal to direct education^[12] Also, most people cannot imagine a “classroom without walls” in addition to some seeing that not going to work and direct teaching will make it impossible for them to feel that they are academic citizens.^[18]

Conclusion

The researchers noted that the availability of e-learning requirements related to technical, administrative and financial aspects for private school teachers more than for public school teachers. Therefore, the barriers to e-learning for public school teachers are greater than for private schools. It has been observed that teachers between the ages of 22 and 28 are less likely to see obstacles to e-learning than individuals between the ages of 36 and 48. These teachers who run online lessons can persuade their colleagues to adopt online teaching and link the positive incentive for e-learning and discuss their experience with them. Teachers who are reluctant to embrace the technology.

Recommendation

We propose to develop the IT infrastructure and facilitate through media and electronic resources, and to provide the Internet in general as a tool to engage students in improvement. Their techniques, knowledge and skills. We suggest encouraging teachers to participate in training to acquire informed knowledge about new technological changes. We suggest that the government direct all school principals in Balqa Governorate to create academic plans that help

students cover missed lessons. Because education is one of the most important sectors that must be given priority in a while Corona time.

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Declaration of Competing Interest

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