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## Jordanian college students' challenges and attitudes towards online teaching during the COVID-19 pandemic

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### Abstract

As the COVID-19 pandemic strikes Jordan, many universities have implemented online education. However, effective use by students has been hindered by many challenges and attitudes. In this paper, we examine the experiences and attitudes of students during the COVID-19 pandemic in regards to online education, focusing on Al-Balqa Applied University and Jerash University. An online questionnaire was administered to 200 students from 2 different universities who took different online courses through Al-Balqa Applied University and Jerash University. The study found that students from Al-Balqa Applied University and Jerash University face similar challenges in e-learning. Moreover, female students suffered more than male students during the pandemic with regard to the challenges they faced in e-learning. In addition, Jerash University students are significantly more disposed to e-learning than students from other universities. In addition, male students are more likely than female students to be positive about e-learning.

**Keywords:** Online education, learning technology, computer networking, undergraduate challenges attitudes, Pandemic, Jordan.

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## 1. Introduction

History has shown that pandemics have had negative consequences (WHO, 2020a). World health officials are currently dealing with a new pandemic. It was reported at the end of 2019 that Wuhan, China, had been infected with Coronavirus. Based on WHO statistics, we can conclude that the COVID-19 pandemic affected nearly the entire world in a short period of time, due to its rapid spread (WHO 2020b, 2020c).

Curfews have been imposed around the world as a result of the pandemic. Individuals may isolate themselves or keep a distance from others to protect their social importance. Working from home, flexible working schedules, and rotating shifts have been implemented to reduce the effects of the epidemic and reduce its impact on the flow of life (Zhao, 2020). Education has been impacted by these measures as well, as restrictions have been imposed. It appears that education has ceased. According to UNESCO (2020), Over 1.6 billion students worldwide, at all levels of education, are unable to complete their studies.

In response to the chaos caused by COVID-19, governments took immediate action concerning digital technology (Angoletto & Queiroz, 2020). As a result of the COVID-19 pandemic, all the academic years are expected to be completed through digital means (Mulenga & Marban, 2020).

Various education management systems and teaching technologies have been continuously used in the education and training process as a result of disruptions of face-to-face interactions in schools. These technologies are becoming essential to the process of education and training since the COVID-19 outbreak. A growing number of students are utilizing online resources, and e-learning practices since COVID-19 spread out of control.

Education and teaching cannot be achieved today without the use of technology (Sarsici & Çelik, 2019). Education in the digital environment has become more important than ever since the development of information and communication technologies. In the context of the COVID-19 pandemic, one of the most evident things has been to put into effect solutions based on online education technologies quickly to enable e-learning within the framework of distance education. It is incompatible with the current process to disrupt education further, as the negative consequences of doing so in the present will be most evident in the future. The resulting negative situation can be minimized by providing flexible learning environments (Daniel, 2020). In recent years, new approaches to learning have been adopted, including e-learning, online learning, mobile learning, and synchronous/asynchronous learning, to protect people's health and accommodate social distances.

New learning experiences occur mostly online or in digital environments supported by the Internet (Adel et al. 2021). This is primarily due to the opportunities offered by these modern learning platforms. As technology continues to develop at a fast rate, it is now indispensable to improve technical skills to find knowledge in the educational arena (Akcil et al., 2019).

As the digital age and COVID-19 brought about new approaches, the education sector saw them as opportunities. Students need special support as they transition into a new educational environment to improve their motivation and concentration for online learning during this critical transition (Roeser & Eccles, 1998).

The worldwide decision to shut down educational establishments was sensible to maintain social distance and prevent its expansion. Because the bulk of the globe is quarantined, the only viable approach is to change to an online medium of instruction. Some countries shifted to online learning right away because they were previously prepared for it. All universities in Jordan utilized the Blackboard software for remote education and delivered certain elective and general courses.

As COVID-19 spreads and new challenges and attitudes emerge, various studies have discussed them. However, limited data are available on students' perceptions of this shift in higher education, and there is

some evidence of students' satisfaction. We believe that students' satisfaction is crucial, and efforts should be made to improve online education's engagement, interest, and meaning (Dhawan, 2020). In this survey study, we aim to assess students' challenges and attitudes, mainly in Al-Balqa Applied University and Jerash University, towards online teaching during the COVID-19 pandemic in comparison to the traditional in-person meetings, and to suggest future recommendations to regulate this change in practice.

Al-Swalha et al. (2021) conducted a study that tried to identify the developmental level of e-learning skills among Al-Huson University College students during the COVID-19 pandemic. Their research focused on three main areas, namely electronic technical skills, the use of Moodle and the use of educational programmes and software. The results of their study proved that the level of development in the use of *Moodle* got the best improvement, and the second improvement was in students' *electronic technical skills*. Students' e-learning skills as a whole improved to a medium degree. However, neither students' gender nor their educational level affected their improvement.

Tsegay et al. (2022) carried out a study to explore the experiences of university teachers in China during the COVID-19 pandemic. In addition to highlighting the benefits and challenges faced by Chinese teachers, they discussed their methods of giving lessons. There were 13 teachers from Chinese universities involved in the study. The study found that the COVID-19 pandemic did not give the university or the teachers the chance to prepare for online teaching. Moreover, it concluded that most university teachers did not have appropriate information and

Communication technologies (ICT) and pedagogical training to engage in online teaching and learning. The researchers expected that online teaching has some benefits in the future by transforming the teaching and learning processes in China to become more interactive and student-centered.

### 1.1. Research questions

This study aims to answer the following research questions:

- 1- Are there statistically significant differences between students of Al-Balqa Applied University and Jerash University in terms of the challenges they face in e-learning?
- 2- Are there statistically significant differences between students of Al-Balqa Applied University and Jerash University in terms of the challenges they face in e-learning, are they male or female?
- 3- Are there statistically significant differences between students of Al-Balqa Applied University and Jerash University in terms of attitudes towards e-learning?
- 4- Are there statistically significant differences between male and female students of Al-Balqa Applied University and Jerash University in terms of attitudes towards e-learning?

### 1.2. Purpose of the study

With the outbreaks of emerging infectious diseases, the demand for online teaching has grown tremendously, addressing the needs of students and promoting the implementation of online teaching-learning systems. Specifically, this study aims to investigate students' challenges and attitudes, mainly in Al-Balqa Applied University and Jerash University, towards online teaching during the COVID-19 pandemic in comparison to the traditional in-person meetings, and to suggest future recommendations to regulate this change in practice. Also, it investigates the barriers to using online tools. In addition, the present study was initiated to find out if students' exposure to online teaching for the past two years has resulted in a change in attitudes and challenges, as compared to what they faced at the beginning of the pandemic when they had been exposed for at least two years to such online teaching.

## 2. Methodology

Through the administration of one instrument: the students' challenges and attitudes towards online teaching survey, this study employed a descriptive method employing quantitative data collection and analysis methods.

### 2.1. Study sample

The participants in this study were 200 male and female students from 2 different universities. They were purposefully drawn from the students who were registered in two sections of *Applied English 1*, a course given to engineering students at Al-Balqa Applied University, and *Reading Skills and Practicum 1* at Jerash University. The students' challenges and attitudes towards online teaching questionnaire were submitted online to the sample of 200 students from the 2 institutions. They were 122 female students and 78 male students. Table 1 shows the distribution of the sample.

**Table 1**

*Numbers and percentages of Study Participants*

| Variable   | Classification              | Frequency | Percent (%) |
|------------|-----------------------------|-----------|-------------|
| Gender     | Male                        | 78        | 39.0        |
|            | Female                      | 122       | 61.0        |
| University | Al-Balqa Applied University | 100       | 50.0        |
|            | Jerash University           | 100       | 50.0        |

### 2.2. Instrument of the study

An online questionnaire that consisted of 21 statements to measure both students' challenges and attitudes towards e-learning was used as an instrument to collect data. 200 students from the 2 universities participated. The universities where participants came from were Al-Balqa Applied University and Jerash University who were taking bachelor's programmes in Education and Engineering. The participants were students who participated in some online courses conducted in the blended mode.

Four sets of questions helped in the analysis and presentation of results. The first set consisted of questions about the challenges students face in e-learning; the second set asked for the gender differences between students in terms of challenges they face in e-learning; the third one was about students' attitudes towards e-learning; and the last question was regarding the gender differences between students in terms of their attitudes towards e-learning.

### 2.3. Data collection and analysis procedures

This study applied a descriptive method employing quantitative data collection and analyses methods through the administration of one instrument: the students' challenges and attitudes towards online teaching questionnaire. 200 students from Al-Balqa Applied University and Jerash University participated in the study. The present study was conducted mainly to identify Jordanian college students' challenges and attitudes towards e-learning during the COVID-19 pandemic. The data collected from students' responses to the questionnaire statements were analysed. Mean scores and standard deviations were computed using the Statistical Package for the Social Sciences.

#### 2.4. Limitations of the study

The generalisability of the findings of the present study, unfortunately, suffers from the following limitations: first, the study is limited to Jordanian college students registered in two universities. Choosing more universities could have yielded more reliable data. Second is the small size of the sample, i.e., the small number of participants. More representative and reliable results could be obtained from a larger sample.

#### 2.5. Reliability and validity of the study instrument

Cronbach's alpha test was conducted to determine the reliability of the study's instruments. Table 2 shows the results.

**Table 2**

*Domain-based Cronbach's Alpha Values*

| Variables  | Cronbach's alpha value |
|------------|------------------------|
| e-Learning | 0.84                   |
| e-Learning | 0.80                   |
| Total      | 0.89                   |

To assure the validity of the questionnaire a jury of university professors in the two universities were asked to give their opinions and recommendations to modify the questionnaire and guarantee its validity.

### 3. Findings and discussion

The present study sought to answer four questions related to the Jordanian college students' challenges and attitudes towards e-learning during the COVID-19 pandemic. The first question the study tried to answer was 'Are there statistically significant differences between students of Al-Balqa Applied University and Jerash University in terms of the challenges they face in e-learning?' To answer this question the researchers analysed the data based on the students' responses to the questionnaire statements related to this question. Table 3 shows the results.

**Table 3**

*A t-test, conducted independently, comparing the challenges faced by students in two universities regarding e-learning*

| University       | N   | Mean | SD   | T    | p     |
|------------------|-----|------|------|------|-------|
| Al-Balqa Applied | 100 | 3.29 | 0.46 | 1.21 | 0.230 |
| Jerash           | 100 | 3.22 | 0.43 |      |       |

The results obtained in Table 3 indicated that there are no statistically significant differences between the challenges that students of Al-Balqa Applied University and Jerash University face in e-learning during the pandemic since  $t = 1.21$  at  $\alpha \leq 0.05$ .

The second question the study pursued was 'Are there statistically significant differences between students of Al-Balqa Applied University and Jerash University in terms of the challenges they face in e-learning that could be attributed to their gender: *male* or *female*?'

An independent sample *t*-test that compared male and female challenges faced in e-learning was used to answer this question as is shown next.

**Table 4**

*A t-test to compare the challenges males and females face in e-learning*

| Gender | N   | Mean | SD   | T     | p     |
|--------|-----|------|------|-------|-------|
| Male   | 78  | 3.04 | 0.45 | -5.90 | 0.000 |
| Female | 122 | 3.39 | 0.39 |       |       |

Data from Table 4 show that there is a statistically significant difference between the challenges that male and female students face in e-learning, in favour of female students, since  $t = -5.90$ .

The third question this study aimed to look into was 'Are there statistically significant differences between students of Al-Balqa Applied University and Jerash University in terms of attitudes towards e-learning?' To answer this question, the researchers computed the *t*-test for equality to compare students' responses regarding the e-learning attitudes towards e-learning in the two universities as declared next.

**Table 5**

*Comparison of E-Learning Attitudes in Two Universities by Independent Sample T-Test*

| University       | N   | Mean | SD   | T     | p     |
|------------------|-----|------|------|-------|-------|
| Al-Balqa Applied | 100 | 3.21 | 0.80 | -2.25 | 0.026 |
| Jerash           | 100 | 3.44 | 0.69 |       |       |

The results from Table 5 indicated that there are statistically significant differences between students' attitudes towards e-learning, in favour of Jerash University, since  $t = -2.25$  ( $\alpha < 0.05$ ).

The fourth question the study tried to answer was 'Are there statistically significant differences between male and female students of Al-Balqa Applied University and Jerash University in terms of attitudes towards e-learning?' Male and female students' attitudes towards e-learning were compared using a *t*-test of equality to provide a proper answer.

**Table 6**

*A t-test to compare the attitudes males and females face in e-learning*

| Gender | N   | Mean | SD   | T    | p     |
|--------|-----|------|------|------|-------|
| Male   | 78  | 3.48 | 0.71 | 2.42 | 0.017 |
| Female | 122 | 3.22 | 0.76 |      |       |

Data from Table 6 shows that there is a statistically significant difference between the attitudes of the students from the two universities that could be attributed to the difference in their gender, in favour of male students, since  $t = 2.42$  ( $\alpha < 0.05$ ). Based on the statistics provided in Table 7, we can gain a better understanding of how the participants viewed e-learning during this study.

**Table 7**

*Means and Standard Deviations for Students' Attitudes towards E-Learning*

| Item   | Al-Balqa |      | Jerash |      |
|--|----------|------|--------|------|
|  | Mean     | SD   | Mean   | SD   |
| I prefer traditional (face-to-face learning) | 3.51     | 1.39 | 3.29   | 1.52 |
| I prefer blended learning                    | 2.95     | 1.43 | 3.03   | 1.33 |
| I prefer e-learning                          | 3.34     | 1.42 | 3.64   | 1.27 |
| e-learning is suitable for all subjects      | 2.47     | 1.38 | 2.97   | 1.34 |

|   |      |      |      |      |
|---|------|------|------|------|
| e-learning develops individual learning skills                              | 3.37 | 1.35 | 3.69 | 1.08 |
| e-learning develops self-confidence   | 2.97 | 1.51 | 3.21 | 1.42 |
| e-learning cannot replace traditional learning                              | 2.91 | 1.63 | 3.11 | 1.65 |
| Teachers interact effectively in e-learning                                 | 3.52 | 1.30 | 3.83 | 1.12 |
| e-learning improves the skills in dealing with teachers and colleagues      | 3.23 | 1.42 | 3.72 | 1.21 |
| e-learning improves digital skills in dealing with computers and technology | 4.09 | 1.03 | 4.36 | 0.64 |
| Once the epidemic crisis has passed, I would like to keep using e-learning  | 2.98 | 1.52 | 3.11 | 1.52 |
| e-learning is suitable only in the circumstances of the COVID-19 crisis     | 3.13 | 1.31 | 3.35 | 1.21 |
| Total   | 3.21 | 0.80 | 3.44 | 0.69 |

Students in Table 7 strongly believe that e-learning improves their digital skills, their knowledge of computers, and their ability to learn independently. They also believe that it strengthens their relationships with their teachers. However, they consider e-learning unsuitable for all university subjects and cannot replace traditional learning (face-to-face) altogether.

To give a clear picture of the challenges the participants have in e-learning, Table 8 shows the statistics regarding this aspect.

**Table 8**  
*Means and Standard Deviations for Students' Challenges towards E-Learning*

| Item  | Al-Balqa |      | Jerash |      |
|---|----------|------|--------|------|
|   | Mean     | SD   | Mean   | SD   |
| e-learning reduces anxiety during the lectures  | 3.39     | 1.44 | 3.83   | 1.27 |
| e-learning is expensive   | 2.68     | 1.28 | 2.48   | 1.02 |
| e-learning is less expensive(cheaper) than the traditional one                                | 3.89     | 1.21 | 4.07   | 1.04 |
| I face technical problems in e-learning   | 3.09     | 1.33 | 2.70   | 1.17 |
| All teachers enjoy excellent digital skills and can manage e-learning effectively             | 3.17     | 1.44 | 3.54   | 1.23 |
| e-learning deprived people of social life and making friendships                              | 3.38     | 1.47 | 3.12   | 1.30 |
| e-learning does not cater to individual differences   | 3.46     | 1.24 | 3.11   | 1.28 |
| e-learning causes health problems as a result of spending hours using computers/tabs/mobiles. | 3.27     | 1.41 | 2.87   | 1.47 |
| Total   | 3.29     | 0.46 | 3.21   | 0.43 |

Participants in the present study found the cost of e-learning to be the greatest challenge to e-learning in comparison to traditional learning. The insufficient knowledge of some teachers of the skills of e-learning, either in preparing electronic materials or dealing with the computer programmes and apps that are used for e-learning, is in line with Kamal and Illiyen (2021), who found that teachers lack proper technical training to teach virtual classes and they need such training as it is considered a prerequisite for effective online teaching. In addition, it is difficult for teachers to pinpoint the individual differences between students because of the lack of interaction between them. Students also suffer from the deprivation of social life and relationships between students in the university as they do not see each other or share the normal campus life which gives them experience and creates friendships that may last forever.

#### 4. Recommendations and final thoughts

Taking into account the findings of this study, which attempted to shed light on the challenges and attitudes of Jordanian college students in the wake of the epidemic, the following conclusions were drawn: First, there are no statistically significant differences between the challenges that students of Al-Balqa Applied University and Jerash University face in e-learning during the pandemic. This conclusion is in agreement with Tsegay et al. (2022, p. 1), who investigated the challenges Chinese teachers encountered during the COVID-19 pandemic, like the insufficient knowledge and experience in ICT and pedagogical training to engage in online teaching and learning. The Chinese teachers used their limited knowledge to create videos to gradually maintain the teaching process in online classes, with assistance from family members who were more knowledgeable in this domain. This challenge is common in many teaching contexts around the world since most universities were not prepared for this transformation in teaching and most university teachers are not well equipped with the skills for this transformation.

Second, during the pandemic, female students were more affected by the challenges they faced in e-learning as compared to male students. This conclusion is in agreement with Leong et al. (2021), who concluded that female learners suffer from inadequate Internet self-efficacy skills. They recommended that university administrators need help and guide them to overcome such problems in learning.

Third, data proved that there are significant differences between students' attitudes towards e-learning, in favour of Jerash University. This finding could be attributed to the fact that Jerash students are educational majors, while Al-Balqa students are engineering majors. The engineering courses need more face-to-face interaction than the educational major courses. The scientific courses are different from the liberal ones.

Fourth, Female students are less likely to adopt e-learning than male students are. The conclusion of this study is consistent with Nistor (2013), who claims that online learning is more stable among men. It also agrees with Yu (2021), who concluded that male students tend to use learning strategies and enjoy better technical skills than female students.

In light of the conclusions drawn from the present study, the researchers recommend that universities train the instructors and teachers with the skills needed to utilise online teaching appropriately and effectively. Moreover, more attention should be given to female students to improve their skills in dealing with online teaching methods as they suffer more than their male counterparts. Also, they recommend that such a study could be repeated with the participation of other universities for more reliable results.

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