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Higher education instructors' and students' attitudes toward distance learning

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ABSTRACT

This study aimed at exploring the attitudes of higher education instructors and university students regarding distant learning during the COVID-19 epidemic. It took place at a higher education institution of Jordan. Using a mixed method approach, the researchers developed a two-part questionnaire and a semi-structured interview. The questionnaire was distributed questionnaire to 167 instructors and 349 students from the University of Jordan (UJ). The findings showed that the participants have a moderately favorable attitude toward distant learning. Additionally, the findings revealed no statistically significant differences (α=.05) in the attitudes of UJ instructors and students toward distance learning during the COVID-19 pandemic attributed to the study variables. Furthermore, the interviews revealed several themes that the university instructors and students identified as influencing the general effectiveness of their distance learning experience, including access to online platforms and professional training, offering electronic equipment, and protecting the integrity of exams. The study recommends that higher education institutions reconsider the concept of distance learning, considering lessons acquired from the era of compulsory distance learning.

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1. INTRODUCTION

The COVID-19 virus pandemic, according to Murphy [1], has resulted in a global closure and strict instructions to restrict social interaction among people for public safety. As a result, schools and universities closed their doors and used many different strategies to keep education going. Students and instructors at various learning institutions lacked expertise dealing with contemporary educational styles, which necessitated the deployment of new teaching methods, contemporary technological tools, and modern apps. Furthermore, participation in the educational virtual environment requires qualified teachers and students who are proficient in the use of technology. Therefore, teachers attempted to design and construct interactive activities that encourage students to learn in this virtual environment while satisfying their needs. Several studies [2]–[6] demonstrated the relevance of attitudes in providing a constructive learning experience. Glazier and Bean [7] state that the actions of instructors mirror their knowledge and beliefs. It is no secret that attitude and beliefs critically shape instructors' and students' perspectives and define the level of successful learning experience [2]. Hence, to help guide the direction of education, it is crucial to inquire

instructors' and students' attitudes toward online learning considering the epidemic. According to several research [8]–[10], some teachers are not supportive of online learning. Many university instructors are concerned about the transition in teaching from real to virtual environments [11]–[13]. In the opinion of Zheng *et al*. [14], instructors are concerned about the changing nature of the teaching and learning experience, the loss of anonymity, accessibility, and growing workload. Other instructors would consider virtual teaching the key for education development and would call for full immersion in this pioneering experience [15], [16]. This is achievable considering the present transformation in higher education because of the COVID-19 epidemic. As a result, to improve distant learning in the post-pandemic age, empowering university instructors and students should be a priority.

Using Moodle as a learning management system (LMS), the University of Jordan (UJ) took serious steps to ensure the long-term viability of teaching and learning throughout the pandemic. Moodle is an educational platform that enables teachers to construct personalized learning environments to assist students in achieving their learning objectives. Because UJ began integrating Moodle into its educational process several years ago, to some extent, it has assisted in reducing the consequences of the forced transition to distant learning [17].

Despite the detrimental consequences of COVID-19 on the educational sector, students and instructors should adapt to these drastic changes and endeavor to identify the best ways to improve learning and teaching in new circumstances. One of these strategies is to conduct further studies to improve post-pandemic learning by examining the experiences of both instructors and students throughout the pandemic. As a result, main objective of the current study is to investigate instructors' and students' attitudes toward distance learning at the UJ following the rapid forced change caused by the coronavirus epidemic. The researchers carried out questionnaires as well as interviews with UJ instructors and students during the spring semester of 2021.

The literature review discusses only those research studies that show results related to participants' attitudes toward distance learning. Several researches [18]–[20] reported that both of instructors and students feel positive toward distance learning because it provides opportunities to improve learning and teaching such as giving faculty and students' opportunities to develop their technology, research skills, and working under pressure. Further, Alam [21] reported that students value online classes because of the easy access to study materials, convenient on-time submission for academic assignments, and automatic reach for grades and results across educational platforms. With the same sense, Mansour [22] demonstrated that teachers have positive attitudes toward distance learning due to temporal and spatial flexibility, effective communication between students and teachers, and the ability to improve quality of teaching by using appropriate teaching strategies within virtual educational environments. According to Reyes-Chua *et al*. [23], distance learning allows teachers and students to obtain 21st-century competencies required to flourish in an increasingly digitalizing environment.

Despite the positive attitudes toward distance learning that earlier studies demonstrated, numerous studies showed a decline in this stance. Many graduate students, according to Adnan and Anwar [24], have misgivings about distance learning because of the different problems they confront. Rizun and Strzelecki [25] reported self-efficacy, effectiveness, and productivity as indicators of lower positivity in students' attitudes towards distance learning.

According to Kapasia *et al*. [26], students in both undergraduate and graduate programs indicated an adverse attitude toward online learning due to poor internet services, lack of communication among colleagues, developed cases of depression and anxiety. With the same sense, Alqudah *et al*. [20] reported several reasons behind students and instructors' belief that distance learning is less organized and less efficient than face-to-face learning. Lack of technical support from educational institutions, poor teaching quality and timely interaction between students and instructors, and a lack of the necessary capabilities to sustain learning in the classrooms of a practical nature such as medicine and engineering are plausible reasons.

The extent literature also reports a mixed attitude toward distance learning among students and instructors. According to Mohalik and Sahoo [27], most instructors and students easily accepted distance learning, but some showed negative tendencies because of the numerous challenges they experienced, including feelings of isolation, increased stress, lack of time management, trouble accessing the internet, and lack of electronic tools. Similarly, students have conflicting emotions about distant learning [25]; even though distance learning promotes efficiency in learning, productiveness, and self-confidence, students prefer conventional in-person educational environments. Several studies reported different variables that have no effect on attitudes toward distance learning. Al-Rubaian and Gwer [28], for example, noted that there are differences in students' views toward distance learning at various academic levels, as well as between male and female attitudes toward distance learning. Likewise, Aleisa *et al*. [29] discovered that there are no differences in undergraduate students' responses to distance learning based on gender, educational level, or the general average. On the other hand,

Al-Tarawneh [30] reported gender, teaching experience, and academic qualification as variables that influenced faculty members' views regarding online learning during the epidemic.

The preceding literature revealed several perspectives on distance learning. Some of them emphasized the favorable perceptions of distance learning. Other studies pointed out the unfavorable perceptions of distance learning. To the best of the authors' professional knowledge, this is a preliminary study that examines the attitudes of faculty members and students about distant learning during the COVID-19 epidemic. Additionally, this research is unique in that it employs mixed method approaches in responding to the research questions.

The current study is grounded in is based on the interaction and communication theory. According to Holmberg [31], effective teaching in distant learning situations is heavily influenced by individuals' attitudes toward collaboration, belonging, and desire to engage in interactive classroom dialogues. In consideration of this, this study examined attitudes among university instructors and learners as a crucial component of effectiveness. Further, Holmberg [31] reported that meaningful teaching is what makes learning easier. Distance learning, according to Holmberg [31], is a term that incorporates learning and teaching activities in the psychomotor, affective, and cognitive domains of the individual learner and an accompanying organization. It distinguishes itself through continuous communication and the capacity to be always done everywhere and making it appealing to those with both professional and social obligations.

All Jordanian universities, including UJ, have been forced to shift to distance learning due to the COVID-19 epidemic. The UJ shifted all courses in various faculties and specialties to distance learning as a reaction to the widespread outbreak. This study researchers, who have taught many distance-learning courses, noticed that university instructors and students had opposing views on this type of learning. Some highlighted the need of being in tune with the pandemic and era's requirements, believing that this kind of teaching and learning style will provide a broad range of learning options in today's competitive world. Others do not believe in distance learning because it could not offer true communication; learning in a traditional environment fosters active engagement between the student and the instructor and can achieve the learning objectives.

There have been studies that look at instructors' and students' attitudes regarding distance learning [18]–[20], [32]–[35], and their results uncovered positive attitudes among instructors and students. On the other hand, other studies showed negative attitudes among instructors as well as students [20]. The intent of this research was to delve deeper into UJ faculty members' and students' attitudes toward distance learning considering the COVID-19 epidemic. The findings of this investigation may help to clarify both faculty and students' attitudes, as well as advise policymakers at higher education institutions on how to improve this novel experience. Specifically, this research answers the following questions:

i) What are the attitudes of UJ instructors and students toward distance learning during the COVID-19 pandemic?
ii) Are there statistically significant differences (α=.05) in UJ instructors' and students' mean responses of attitudes towards distance learning during the COVID-19 pandemic due to age, gender, subject/major, year of experience/year in the program, and the number of online courses before the COVID-19 pandemic?
iii) What are the other factors that affect the attitudes of UJ instructors and students toward distance learning during the COVID-19 pandemic?

The purpose of this study was to determine the attitudes among UJ instructors and students toward distance learning during the COVID-19 epidemic. Further, it aimed to detect statistically significant differences in the average responses of the participants' attitudes due to different variables. Furthermore, it sought to identify further factors that might influence the attitudes of the participants.

The significance of this study rests in its discussion of a current research topic concerning UJ faculty members' and students' attitudes toward distance learning during the COVID-19 pandemic. The findings of this study would help the university administration and others involved in distance learning design in taking practical steps to develop and improve distance-learning experience in the future to meet faculty members' and students' needs and expectations. This research would inform university faculty members and students on their feelings about distance learning during the COVID-19 pandemic, allowing them to reflect on that experience and establish a positive attitude. Further, this study is important for policymakers to identify and treat the causes behind the negative stances. This study should help scholars to undertake additional research and studies on distance education to inform the future of online learning.

The following are the key definitions related to the study's objectives. Attitudes are defined as the tendency that grows in behavior and gives it negative or positive criteria according to its repulsion or attraction [36]. Procedurally, the attitudes of UJ instructors and students regarding distance learning are defined as the amount of emotional intensity shown by the study sample members toward distance learning by rejecting, accepting, or hesitating to use it, which is measured by the degree to which the respondent obtains the research instrument. Distance learning refers to learning and teaching activities in the cognitive, psychomotor, and emotional domains that can be accomplished at any time and from any location [2].

Procedurally, distance learning is learning and teaching activities practiced by instructors and students of the UJ to achieve learning objectives in various domains anywhere and at any time.

2. METHOD

The researchers used the mixed method approach to explore the participants' attitudes regarding distance learning during the COVID-19 pandemic. They used two main instruments for data collection: the questionnaire and the interview. The mixed method approach gave the research more confidence in its results [37]. Further, the value of mixed methods design lied in its ability to offer a more complete understanding of research questions by integrating qualitative and quantitative approaches, leading to richer insights and more robust conclusions [38].

2.1. Study population and sample

The study's population included all UJ instructors and undergraduate students throughout the 2020-2021 academic year. As an employee in the Admission and Registration Unit at the University of Jordan, during a personal interview, that based on the UJ statistics, the overall number of instructors at UJ was (1,578), and the total number of undergraduate students at UJ was (39,991). The sample of the study included (167) instructors and (349) undergraduate students from the UJ; all of them voluntarily accepted to participate and responded to the online questionnaires. Afterward, the researchers interviewed 10 instructors and 20 students, randomly selected from those who volunteered to respond to the online questionnaires.

2.2. Research instrumentation

2.2.1. Questionnaires

After reviewing several previous literatures [18], [39], [40], the researchers developed two questionnaires; the first questionnaire addressed instructors, while the second questionnaire focused on undergraduate students. A group of experts in curriculum and instruction, as well as educational technology, examined both questionnaires for content validity; they were requested to validate the tools in terms of clarity and relevance to the intended goals. As a result, the researchers altered the items of the two instruments, resulting in each having 13 items. The questionnaire was piloted on a sample of 35 instructors and 50 students to ensure internal consistency. For both questionnaires, the Pearson coefficient showed a positive and statistically significant correlation of (.01). The estimated Cronbach's alpha coefficients for instructors' and students' reliability were (.85) and (.87), respectively, reflecting a reliable instrument and assured study-findings. Age, gender, school subject/major, experiences/years in program, and number of online or hybrid classes they taught/studied before the pandemic were all examined by the questionnaire.

2.2.2. The interview

Following the quantitative data, to gather more detailed and descriptive narratives, the researchers conducted a semi-structured interview. The researchers developed, conducted, and analyzed the interviews using Spradley's classical model [41]. At the beginning of each interview the researchers asked questions that highlighted the participant background and previous experience with online learning. Then, the researchers focused on the targeted questions. Specifically, in the first section, the researchers created a set of questions in advance that fulfil the study's principal objective. The interview prepared questions focused on learning from the participants about the other aspects that were not addressed in the questionnaires but affected the attitudes of UJ instructors and students toward distant learning during the COVID-19 pandemic. In the second section of the interviews, the researchers asked unplanned follow-up questions to obtain further information and clarifications based on the initial responses. Each interview lasted 30 minutes. All interviews were audio recorded and subsequently verbatim transcribed.

2.3. Collecting and analyzing data

The data was gathered and analyzed in two steps. First, the researchers created the research instruments online using Microsoft Forms and emailed them to university instructors and students. Second, the researchers conducted online interviews and recorded the conversations. Next, the researchers used the statistical analysis program (SPSS) to process the questionnaire data and employed Spradley's 'domain analysis' [41] to sift the data, draw out patterns, and uncover emergent topics for the interviews. For the quantitative data, the interval estimations (1–2.33=low, 2.33<–3.67=medium, and 3.67<–5=high) were determined to facilitate the interpretation of the results and judge means values of the study sample responses.

To provide the results for the first and second questions, quantitative data was analyzed using descriptive statistics as well as five-way analysis of variance (ANOVA). However, before analyzing the data, the researchers reversed the response of the negative items (13), resulting in the identical averages for

negative and positive items. The researchers employed thematic analysis [41] to answer the third question, which consists of three steps: data familiarization, theme search, and theme definition and labelling. To respond to the questions, the researchers considered the growing themes as well as the quantitative results.

3. RESULTS AND DISCUSSION

3.1. First question

The first question is: what are the attitudes of UJ instructors and students toward distance learning during the COVID-19 pandemic? Table 1 shows the descriptive analysis used to answer the question. Table 1 shows that overall, the replies of the UJ instructors (M=3.56, SD=.636) and students (M=3.17, SD=.828) were moderate. Furthermore, the table shows that the means related to UJ instructors' attitudes towards distance learning ranged between (4.13-2.80); item 13 "I would rather revert to my conventional mode of teaching"- came in the first rank with a high positive attitude (M=4.13, SD=.926). Further, item 7 "Instead face-to-face classes, I would choose to take classes online" came in the last rank, with a moderate attitude (M=2.80, SD=1.38). That is, UJ instructors favor traditional face-to-face instruction. In the same vein, Table 1 reveals that the means related to students' attitudes towards distance learning ranged between (4.25-2.54); item 13 "I would rather revert to my conventional mode of learning" came in the first rank with a high positive attitude (M=4.25, SD=1.02). The last item on the list was item 7 "Instead face-to-face classes, I would choose to take classes online" with a moderate attitude (M=2.54, SD=1.37). This data suggests that both university instructors and students prefer traditional teaching approaches. They did not favor taking the courses online.

Table 1. Means and standard deviations of UJ instructors' and students' attitudes toward distance learning

No.	Item	Instructor				Student			
		Mean	SD	Rank	Degree	Mean	SD	Rank	Degree
1	I am interested in teaching/studying online courses	3.60	1.00	8	Medium	3.17	1.24	6	Medium
2	I believe that distant teaching/learning enhances my teaching/learning experiences.	3.82	.859	4	High	2.97	1.29	8	Medium
3	Making courses available on the internet improves the efficiency of teaching/learning.	3.23	1.18	10	Medium	2.66	1.34	12	Medium
4	If accessible, I aim to use distance teaching/learning tools over the semester.	3.71	.946	7	High	3.25	1.24	5	Medium
5	I have confidence in distance teaching/learning.	3.80	.907	5	High	3.10	1.31	7	Medium
6	Distance teaching/learning settings necessitate sophisticated technical knowledge of computer use.	4.01	.843	2	High	3.90	1.00	2	High
7	Instead face-to-face classes, I would choose to take classes online.	2.80	1.38	13	Medium	2.54	1.37	13	Medium
8	I feel more comfortable and love distant teaching/learning.	2.95	1.33	12	Medium	2.80	1.40	10	Medium
9	Distance teaching/learning is an appealing substitute to the pen-and-paper approach.	3.02	1.30	11	Medium	2.75	1.34	11	Medium
10	Distance teaching/learning is an effective teaching method.	3.44	1.05	9	Medium	2.83	1.32	9	Medium
11	It is critical to modify course assignments and requirements to accommodate students' potentially unequal access to distance learning requirements.	3.80	.861	5	High	3.76	1.02	3	High
12	I believe that face-to-face teaching strategies differ from those that should be used in distant teaching/learning.	3.99	.703	3	High	3.37	1.28	4	Medium
13	I would rather revert to my conventional mode of teaching/learning.	4.13	.926	1	High	4.25	1.02	1	High
	Total	3.560	.636		Medium	3.17	.828		Medium

Table 1 demonstrated that all items were similar in terms of the degree of attitude ranging between high and moderate. However, the items that came with a high degree for instructors and a medium degree for students were: 2 "I believe that distant teaching/learning enhances my teaching/learning experiences", 4 "If accessible, I aim to use distance teaching/learning tools over the semester", 5 "I have confidence in distance teaching/learning", and 12 "I believe that face-to-face teaching strategies differ from those that should be used in distant teaching/learning". That is, compared to students, university faculty members are more open to undertaking distance learning experience. Quantitatively, during the COVID-19 pandemic, both instructors and students appear to have a positive attitude (medium) toward distance learning, confirming similar attitudes and beliefs toward distance learning as reported by other studies [18]–[20].

This finding can be linked to the fact that university instructors and students alike greatly respect the distance-learning format that allowed them to continue their work during the pandemic. If were not for this innovative learning, the flow of education would have suffered more. Despite this appreciation, this learning experience was new to the Jordanian universities and required new skills and experiences that both instructors and students should possess to be successful in distance learning. According to both university instructors and students, distance learning needs significant technical expertise and changes in the nature of course delivery and course assignments that account for students' unequal access to distance learning supplies. As a result, both university instructors and students have expressed a strong preference for traditional face-to-face learning while perceiving distance learning as less desirable, less comfortable, and less efficient. Authors assume that the difficulties instructors and students encountered lowered their attitudes toward distance learning. Such results are consistent with the findings of previous studies [20], [25], [26].

Additionally, instructors and students expressed a medium level of agreement about the viability of adopting and using distance learning techniques throughout the regular semester following the pandemic. It is worth noting that university instructors and students disagree on whether they want to use e-learning in the future, with students being unable to agree with instructors on this matter. Students perceive that distance learning is inefficient, so they were less enthusiastic about using it. While the instructors clearly believe that their distance learning instructional strategies should differ, apparently students do not share the same belief. It is possible that students believe that distance learning should use instructional techniques like those used in regular classrooms. This difference in positions reflects instructors' strong belief that distance learning can improve the learning experience, while students posit less confidence.

The qualitative results of the interviews portrayed another discrepancy between instructors and students' attitudes. Students based their attitudes on the style of learning they prefer. Most students prefer face-to-face learning because it is easier to communicate with their instructors; it allows them an efficient contact with colleagues and instructors that is deemed important for their success. Students believe face-to-face learning improves focus and minimizes stress. For example, one student explained:

> "*Face-to-face learning is superior to distance learning because it provides both students and instructors with an interactive learning experience that is not available in distance learning*."

Other students added:

> "*Improving knowledge through face-to-face learning is considerably higher than distance learning, face-to-face interaction with instructors is incomparable to distance learning, and learning is predicated on being face-to-face, and it will remain such*."

Such attitudes may not agree with Alam [21], which claim that online courses foster better communication between students and instructors and help to alleviate students' fears. Still, few UJ students preferred distance learning for one reason: it saves them the hassle of school commuting.

Students' attitudes about increasing their study skills were likewise divided; while most students claimed that distance learning did not enhance their study skills, others disagreed. Students' views of communication and distant engagement, self-reliance, and access to knowledge from different sources, for example, were more positive. One student said, "*distance learning increases communication abilities via the internet*." Several researches [18]–[20] support these findings claiming that distance learning allows students to improve their ICT skills, research abilities, and ability to work under pressure. According to UJ instructors, face-to-face learning is superior to distance learning for a variety of reasons, including the ease of communication, active interaction, and the opportunity to control the educational environment. One instructor explained:

> "*Face-to-face is much better due to the lack of a true social interaction; mere participation in the conversation does not develop emotional social aspects, and the lack of ability to control the evaluation process; there are students whose morals prevent them from cheating, while others cheat and receive a higher rating*."

Other studies do not support these findings. For example, according to Mansour [22], the effectiveness of student-instructor contact, the adaptable nature of the teaching and learning process, and the greater effectiveness of teaching and learning have led university instructors to have an optimistic mindset toward distance learning. Reyes-Chua *et al*. [23] argue that instructors and students may build 21st-century learning skills through distance learning to compete professionally in a constantly changing environment.

In terms of the nature of the courses, there was an attitudinal consensus among instructors and students on the success of distant learning. Many hands-on skills cannot be gained solely by theory; students need to experience with their hands, make mistakes and learn from them, according to one Engineering Faculty member. This is impossible in distance learning. One student stated:

> "*Genuine-world experiences need to be in an actual environment with instructors utilizing real tools in labs and workshops.*"

These findings echo those of Alqudah *et al*. [20] stating that the practical nature of particular courses and specializations, such as medical and engineering, impose certain fundamentals to master essential skills and subject knowledge.

3.2. Second question

The second question is: are there statistically significant differences (α=.05) in UJ instructors' and students' mean responses of attitudes towards distance learning during the COVID-19 pandemic due to age, gender, subject/major, year of experience/year in the program, and the number of online courses before the COVID-19 pandemic? To respond to this question, the researchers calculated means and standard deviations, as shown in Table 2. Table 2 pointed out apparent differences between means considering the study variables. To determine the statistical significance of these differences, a five-way ANOVA test was calculated, as shown in Table 3.

Table 3 shows that there are no statistically significant differences in UJ instructors' mean responses of attitudes due to the following variables: age (F=.318), gender (F=.112), subject (F=3.414), year of experience (F=.000), and the number of online courses before the COVID-19 epidemic (F=2.807). Further, the table shows that there are no statistically significant differences in UJ students' mean responses of attitudes towards distance learning during the COVID-19 pandemic due to the variables: age (F=.503), gender (F=1.307), major (F=.057), year in the program (F=1.463), and the number of online courses before the COVID-19 epidemic (F=.440). That is, attitudes toward distant learning were unaffected by variables including gender, years of experience, and the number of courses taken prior to the COVID-19 epidemic.

Table 2. Means and standard deviations of responses of UJ instructors and students

Variable	Instructor			Student		
	Level	Mean	SD	Level	Mean	SD
Age	Less than 50	3.647	.67749	Less than 20	3.128	.84854
	50 and above	3.515	.61243	20 and above	3.236	.80426
Gender	Male	3.494	.64548	Male	3.638	.77318
	Female	3.630	.62308	Female	3.038	.79420
Subjects/major	Humanities	3.488	.64957	Humanities	3.093	.76555
	Sciences	3.671	.60397	Sciences	3.283	.88981
Teaching experience/year in the program	15 and less	3.636	.63310	Less than 3	3.119	.82167
	More than 15	3.417	.62328	3 and more	3.232	.83280
Number of online or blended classes before COVID-19	None	3.491	.57736	None	3.198	.89239
	1-2	3.713	.61753	1-2	3.365	.77194
	3 and above	3.292	.73268	3 and more	2.994	.77193

Table 3. Five-way ANOVA attributed to the study variables

Source	Instructors					Students				
	Type III sum of squares	df	Mean square	F	Sig.	Type III sum of squares	df	Mean square	F	Sig.
Age	.124	1	.124	.318	.574	.298	1	.298	.503	.479
Gender	.044	1	.044	.112	.738	.776	1	.776	1.307	.254
Subjects/major	1.336	1	1.336	3.414	.067	.034	1	.034	.057	.812
Year of experience/year in the program	.000	1	.000	.000	.985	.868	1	.868	1.463	.227
Number of online courses before the COVID-19 epidemic	2.197	2	1.099	2.807	.064	.522	2	.261	.440	.644

*Statistically significant at the (α=.05)

The findings of the second question revealed no statistically significant differences in UJ students' mean responses of attitudes towards distance learning during the COVID-19 pandemic due to age, gender, subject/major, experience/year in program and number of online courses before the COVID-19 pandemic.

This result agrees with the findings of several researches [28], [29] which reported various variables as having no effect on attitudes toward distance learning, such as students' academic levels and gender. However, the results of this study disagree with Al-Tarawneh [30] who found that instructors' attitudes toward distance learning could be affected by factors like gender and teaching experience.

This result can be attributed to the fact that the instructors and students were following the face-to-face learning pattern in the university. Thus, age, gender, subject/specialty, experience/year in the program, and the number of online courses differed prior to the COVID-19 pandemic, did not influence the attitudes of instructors and students toward distance learning. Although a few instructors and students had experience with blended learning prior to the COVID-19 pandemic, and a few instructors and students had personal experience with distance learning, these experiences were ineffective because most instructors and students began with a similar experience in distance erudition application. This indicates that both university instructors and students experienced the same extraordinary emergency situations during the COVID-19 epidemic, which forced the university to close its gates. Both instructors and students benefited from going through the distance learning experience without any preparation for the new emergency learning style. As a result, there is no effect of any variable on the attitudes toward this new learning pattern.

3.3. Third question

The third question is: what are the other factors that affect the attitudes of UJ instructors and students toward distance learning during the COVID-19 pandemic? To detect whether the previous factors are not enough to affect the attitudes of UJ instructors and students, the regression analysis was calculated as shown in Table 4. Table 4 shows that the results of the regression analysis (R2) for the attitudes of UJ instructors and students towards distance learning according to the five variables (age, gender, subject/major, years of experience/in program, numbers of online courses before epidemic) are .060 (6%) and .13 (13%) respectively. That is, the study variables can only predict 6% and 13% of UJ instructors' and students' attitudes, respectively, toward distance learning. Based on this finding, the researchers conducted interviews to find more factors that might have a more significant impact on instructors' and students' attitudes about distant learning.

Table 4. Regression test for UJ instructors and students

Variable	Model	R	R square	Adjusted R square	Std. Error of the estimate
Instructors	1	.245a	.060	.031	.6265
Students	1	.362a	.131	.119	.77763

It is worth noting that this question changed over time because of the emerging themes from the interviews. Fundamentally, through the interviews the instructors identified numerous factors that influenced the overall success of their distance learning experience, which influenced their attitudes toward distance learning. Access to online platforms, internet connectivity, electronic device access, and professional training, for instance, all had a significant impact on whether UJ instructors had positive or negative attitudes. Further, maintaining communication with students, using distance learning-appropriate teaching strategies, offering electronic equipment, securing internet services and applications, training students and instructors on mobile apps, and protecting the trustworthiness of exams are among the factors mentioned by students as influencing the success or failure of their distance learning experience. Specifically, when asked what additional factors of the COVID-19 pandemic would affect university instructors' and students' attitudes of distance learning, the instructors mentioned several factors. Accessibility to online sources, connectivity to the internet, availability of technological equipment, and professional training, for instance, all had a big impact on whether university instructors had a favorable or negative attitude. One of the instructors said:

> "*The potential for distance learning, given that instructors are better aware of how to cope with distance learning, are well-trained on how to use electronic exams, and are not under time limitations.*"

Other instructors mentioned factors that may influence student communication and participation during distance learning, such as providing consistent quizzes, planning constructive activities based on students' needs, and employing modern teaching strategies that are compatible with the nature of distance learning. Another instructor stated:

> "*One of the most important reasons why students are always present and interactive is the variety of evaluation methods available; for example, conducting short periodic exams, increasing the number of duties that require attention in lectures, and increasing the number of oral questions for students in each lecture*."

In addition, instructors can convey their course information more dynamically by diversifying their teaching styles and incorporating technology.

Students, on the other hand, identified several factors that can inspire the attitudes of their distance learning experience, including keeping in touch with students, employing effective teaching techniques, providing electronic equipment, safeguarding internet services and applications, and guiding both students and instructors in how to take advantage of online resources. One student stated that a lack of university preparation, instructors' incompatible digital abilities, and lack of connection and attentiveness during online sessions all harmed the quality of their distant learning experience, negatively affected rating their experience. One student remarked:

> "*I don't believe my university's distant learning program has been effective since present educational systems still need to be expanded to fit the expanding demands of both students and instructors*."

Another student commented:

> "*My experience with distant learning at my institution has been a disaster because I feel the university was not appropriately prepared for the move.*"

According to one of the students, the reasons behind the failure in this new experience may lie in "*the absence of hands-on experience, lack of control over cheating during online examinations, stress, and the difficulty to focus on home*." These results are consistent with Kapasia *et al*. [26] who found that sadness, anxiety, insufficient internet access, and an unpleasant study environment at home all contributed to undergraduate and graduate students' negative attitudes about distance learning.

4. CONCLUSION

The purpose of this study was to investigate how university professors and students perceived their online learning experience during the COVID-19 pandemic in one of the higher education institutions in Jordan. Quantitative data revealed that both instructors and students have a good attitude (medium) toward distance learning. However, the qualitative findings of the interviews revealed that most university students prefer face-to-face learning. Consequently, the Jordanian higher education systems need more efforts in preparation to be ready for the shift to distance learning. The questionnaire findings suggested that both instructors and students have generally positive attitudes toward online learning experience, however participants' interviews revealed more negative attitudes. Specifically, the interviews indicated a lack of preparation for online learning, deficits in digital and technological capabilities, reduced communication between students and their instructors; all are key causes behind participants' negative attitudes. The major encountered obstacles included the administrative, academic, and logistical flaws. Detecting these obstacles can help policy makers and stakeholders identify the gaps and find adequate solutions. This can help to improve the experience of online learning at Jordanian higher education institutions.

The study advises that conventional HEIs reconsider the notion of distance learning, considering lessons learned during the era of forced distance learning. This study also emphasizes the importance of responding carefully to the instructor/student attitudes to facilitate the transitioning to new learning environments. As online teaching continues to transform the educational environment in higher education institutions, university instructors and students will have to rethink what it means to participate, learn, and grow in a digitally networked world, building new avenues to knowledge and exploration.

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AUTHOR CONTRIBUTIONS STATEMENT

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C : **C**onceptualization
M : **M**ethodology
So : **So**ftware
Va : **Va**lidation
Fo : **Fo**rmal analysis
I : **I**nvestigation
R : **R**esources
D : **D**ata Curation
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Vi : **Vi**sualization
Su : **Su**pervision
P : **P**roject administration
Fu : **Fu**nding acquisition

CONFLICT OF INTEREST STATEMENT

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

INFORMED CONSENT

The researchers ensured informed consent by clearly explaining the study's purpose, data usage, withdrawal rights, and potential risks or benefits. Participation was voluntary, with no negative consequences for non-participation. To protect privacy, all data were anonymized, and participants were informed about storage and retention. The survey minimized bias through anonymity and a representative sample. An expert review enhanced its validity and reliability.

DATA AVAILABILITY

The data that supports the findings of this study are available from the corresponding author [YMA], upon reasonable request.

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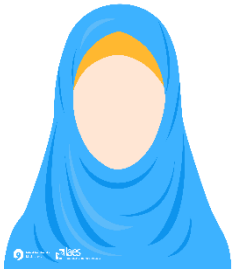

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