The Effects of the Covid-19 Pandemic on the Academic Performance of Interior Design Students in Jordanian Universities

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Abstract

This study assessed the perceived performance of interior design students in Jordan who were engaged in either classroom or online learning during the COVID-19 pandemic lockdown. According to the survey, first-year students showed greater satisfaction than third-year students. Meanwhile, second-year students had moderate expectations and perceptions of both online and in-person learning experiences. Several reasons may explain this difference, including the novelty of online learning for first-year students, the more demanding nature of third-year coursework, and the challenges involved in teaching complex concepts online. Understanding the factors contributing to these differences in satisfaction is essential to ensuring equitable education for all students. Addressing these factors will help in developing targeted strategies to support students in their academic journey. The findings of this research shed light on key elements influencing students' satisfaction with online learning and provide valuable insights for shaping strategies to improve student support during the pandemic.

Keywords: COVID-19 pandemic in Jordan, Online distance learning, Interior design education, Interior design studio, Design performance

Introduction

The outbreak of COVID-19 in 2019, along with the global lockdown measures, significantly altered the functioning of countries. In Jordan, the first confirmed COVID-19 case appeared on January 3, 2020, and by December 12, 2022, there had been 1,746,997 confirmed cases and 14,122 deaths, according to the World Health Organization [1]. As a key tourist destination, Jordan formed a collaborative team of experts to control the virus's spread [2]. Among the measures taken, the National Defence Law was invoked on March 17, 2020, which led to the suspension of in-person classes at educational institutions [3]. Despite limited resources, Jordan's policymakers have made efforts to improve the country's higher education institutions [4].

The closure of educational institutions created significant challenges, including learning inequalities and the risk of increased student dropouts. To address this, the government introduced various e-learning platforms to ensure continued education for students. However, the rapid shift to online learning midway through the semester raised concerns about how students would

adapt to this new learning mode. With the classroom environment moved online, students found themselves separated from classmates, instructors, and the physical learning space. A study conducted by Azmi *et al.* [5] among Saudi university students highlighted the drawbacks of online learning, such as lack of engagement, stress (75%), anxiety over exams (79%), and reduced productivity. Female students reported higher levels of depression compared to male students. In Jordan, a study conducted with parents of students, after they returned to school post-pandemic, found that 86.31% of respondents felt that distance learning had not met its goals. Key reasons for this included low student motivation, lack of access to devices, poor internet connectivity, and economic and lifestyle challenges [6].

A comparative study was carried out to evaluate the experiences of Jordanian and Turkish students regarding the outcomes of online education. The Turkish students rated online learning as excellent, while Jordanian students, particularly those involved in practical courses, expressed dissatisfaction, with dissatisfaction levels being twice as high as those in Turkey [4]. In a separate study conducted among medical students in Jordan, researchers examined their perceptions of e-learning and the challenges they faced during the COVID-19 pandemic. The findings indicated a general lack of satisfaction, with students preferring traditional face-to-face education [7]. Contributing factors to this dissatisfaction included issues such as poor internet connectivity, socio-economic challenges, home distractions, and a lack of motivation.

Similarly, another study found that only 26.8% of Jordanian medical students expressed satisfaction with distance learning, although the authors viewed this as an opportunity for future online learning development [8]. A study on faculty satisfaction with online teaching in Jordanian universities reported low satisfaction levels, with suggestions for intensive faculty training to improve online teaching quality [9]. Further, an assessment of e-learning experiences across 12 governorates in Jordan revealed that many students had no prior experience with online courses before the pandemic [10]. Half of the surveyed students indicated they were spending less time on studies than they did before the pandemic.

A conceptual framework called UTAUT (Unified Theory of Acceptance and Use of Technology) was used to examine students' intentions to use digital learning tools during the lockdown. The study, conducted in private universities in Amman, found that students preferred face-to-face learning due to higher engagement and comprehension [11]. First-year students, in particular, were highly dissatisfied with the online education system compared to their senior counterparts. Yassine *et al.* [12] examined the impact of COVID-19-induced online education on students, faculty, parents, and policymakers from Jordanian universities. The research highlighted negative effects such as disruptions in learning, limited access to education and research, job losses, and mounting student debt.

Al-Alami *et al.* [13] evaluated the effectiveness of remote teaching for pharmacy students at Jordanian universities, particularly for theoretical courses in anatomy and histology. While students expressed positive views about online learning, they identified challenges such as lack of face-to-face interaction and inadequate internet connectivity. Similarly, a study at the Jordan University of Science and Technology focused on online teaching for architectural design courses. Although both faculty and students were satisfied with theoretical courses, dissatisfaction was noted for design courses [14]. In Saudi Arabia, research on senior interior design students found benefits in terms of cost-effectiveness, enhanced learning outcomes, and ample time for assignments, but challenges included technical issues and changes to projects and grading [15].

While several studies have been conducted at Jordanian universities, the present study specifically targets first- and third-year interior design students at Irbid University College's Department of Interior Design. This study uniquely compares the perceived performance of students participating in classroom-based learning versus online learning during the COVID-19 lockdown. Unlike earlier research, which focused on specific year groups, this study provides a comparative analysis of first- and third-year students' perceptions in the context of a design studio.

Materials and Methods

This study explores the differences in how interior design students perceive their performance in traditional classroom settings compared to online learning during the COVID-19 pandemic lockdown in Jordan. The research was conducted with students in the first, second, and third years of the interior design diploma program at Irbid University College's Department of Interior Design. A custom-designed questionnaire was used to gather data regarding the participants' demographic details, the broader impact of the COVID-19 pandemic, and their experiences with online education. The questionnaire was distributed, and responses were carefully reviewed to exclude incomplete, duplicated, or inaccurate entries. Ultimately, 138 valid responses were included in the analysis. The collected data was analyzed using SPSS version 25.0, and both demographic and frequency analyses were performed across all year groups based on the survey items.

Results and Discussion

This research aimed to assess the differences in how interior design students viewed their academic performance during classroom versus online learning in response to the COVID-19 pandemic. The demographic characteristics of the participants are provided in **Table 1**.

Table 1. Demographics of the respondent

Demographics		Frequency	Percent
Gender	Male	55	39.9
	Female	83	60.1
Age	18-20 years	99	71.7
	21-23 years	37	26.8
	> 23 years	2	1.4
Current study program	Diploma	138	100.0
Year of studies	First-year	43	31.2
	Second year	70	50.7
	Third year	25	18.1

Table 1 presents the demographic breakdown of the study's participants. Among the 138 respondents, 55 were male (39.9%) and 83 were female (60.1%). The majority of participants (71.7%) were aged between eighteen and twenty years, followed by 26.8% in the 21-23 age range, and 1.4% who were older than 23. All participants were enrolled in a diploma program, with 31.2% in their 1st year, 50.7% in their 2nd year, and 18.1% in their 3rd year of study.

Table 2. Descriptive analysis of COVID-19's impact on educational institutions

		Frequency	Percent
COVID-19 affected your interior design studio in the past three years	Yes	134	97.1
	No	4	2.9
Participated in any online learning before COVID-19	Yes	1	.7
	No	137	99.3
The interior design department implemented online learning post-COVID-19	Yes	138	100.0
Received prior instructions from the professor before online teaching began	Yes	128	92.8
	No	10	7.2
Mode of communication from professor during online learning	WhatsApp	12	8.7
	Chat and call options on online platforms	126	91.3
Online learning platforms used by professors during COVID-19 period	MS teams	123	89.1
	E-learning	15	10.9

Table 2 shows that 97.1% of the interior design departments have experienced the effects of COVID-19 in the past three years. Only 0.7% of participants had prior experience with online learning before the pandemic, but 100% of departments transitioned to online learning as a result of COVID-19. Additionally, 92.8% of participants received guidance from their professors before starting online teaching, with 8.7% of these instructions delivered through WhatsApp and 91.3% through online platform chats and calls. Regarding the online platforms used, 89.1% of professors relied on MS Teams for teaching during the pandemic, while 10.9% used E-Learning platforms.

Table 3. Expected learning outcome from online learning during COVID-19

		Expected learning outcome from online learning during COVID-19				Total
		Higher	**Lower**	**No change**	**Do not know**	
Year of studies	First-year	4	35	3	1	43
	Second year	3	57	5	5	70
	Third year	1	23	1	0	25
	Total	8	115	9	6	138

Table 3 outlines the students' expectations regarding their learning outcomes due to the transition to online learning during the COVID-19 pandemic. Among the 138 participants, 8 (6%) believed their learning would improve, 115 (84%) felt it would decrease, 9 (6%) anticipated no change, and 6 (4%) were unsure. When examining responses by year of study, 4 (9%) first-

year students expected an improvement, 35 (81%) anticipated a decline, 3 (7%) foresaw no change, and 1 (2%) did not know. Among second-year students, 3 (4%) expected better learning, 57 (81%) believed it would worsen, 5 (7%) thought there would be no difference, and 5 (7%) were unsure. Third-year students showed the highest expectation of lower outcomes, with 1 (4%) expecting an improvement, 23 (92%) anticipating a decline, 1 (4%) predicting no change, and none uncertain. Overall, most students across all years anticipated a decrease in their learning due to the shift to online education.

Table 4. Expected learning outcome from classroom learning

		Expected learning outcome from classroom learning				Total
		Higher	**Lower**	**No change**	**Do not know**	
	First-year	20	13	5	5	43
Year of studies	Second year	38	16	12	4	70
	Third year	14	5	3	3	25
	Total	72	34	20	12	138

Table 4 illustrates the anticipated learning outcomes from classroom-based learning across 138 students, categorized by their year of study. A total of 72 students (52.2%) expected an improvement in their learning outcomes, 34 students (24.6%) anticipated a decline, 20 students (14.5%) expected no change, and 12 students (8.7%) were uncertain. Breaking this down by year, the majority of first- and second-year students (63%) expected a better learning experience, while most third-year students (56%) anticipated no change. This data suggests that students, regardless of year, generally expect classroom learning to yield better outcomes. Factors such as enhanced comprehension of course material strengthened critical thinking abilities, and improved study habits may contribute to these expectations. Interestingly, third-year students' expectations differ, as a larger proportion of them anticipated no change, possibly reflecting a shift in focus toward practical application rather than further theoretical learning.

Table 5. Perception towards face-to-face and online learning

Perception toward face-to-face learning						
	Strongly disagree	**Disagree**	**Neutral**	**Agree**	**Strongly agree**	**Total**
Decreases the learning quality	95	33	9	1	0	
Causes anxiety and other health issues	106	29	2	1	0	
Limits interaction	107	27	4	0	0	
Restricts mobility	91	42	5	0	0	138
No effect	91	43	2	2	0	
Make me resilient and productive	0	0	5	62	71	
Save money	65	69	4	0	0	
Perception towards online learning						
	Strongly disagree	**Disagree**	**Neutral**	**Agree**	**Strongly agree**	**Total**
Increases my learning quality	59	61	14	4	0	
Causes anxiety and other health issues	7	12	13	65	41	
Higher peer interaction	31	97	5	3	2	138
Restricts mobility	9	2	2	66	59	
No effect	13	29	6	58	32	
Make me resilient and productive	83	49	5	1	0	

Table 5 presents the responses of 138 participants to various statements regarding online learning. A significant majority, 95 participants, strongly disagreed with the statement that online learning decreases learning quality, while 106 participants strongly disagreed that it causes anxiety or other health problems. Similarly, 107 participants strongly disagreed with the notion that online learning limits interaction and 91 participants strongly disagreed that it restricts mobility. Meanwhile, 91 participants neither agreed nor disagreed with the statement that online learning had no effect. Notably, no participants strongly agreed that online learning makes them more resilient and productive; however, 62 participants agreed, and 71 participants strongly agreed with this statement. Finally, 65 participants strongly disagreed and 69 participants disagreed with the claim that online learning saves money.

In terms of the survey results, the majority of respondents indicated a positive view of online learning's impact on learning quality, with 59 participants strongly agreeing and 61 agreeing. Likewise, 31 participants strongly agreed, and 97 participants agreed that increased peer interaction in online learning was beneficial. In contrast, only 7 participants strongly disagreed and 12 disagreed with the claim that online learning leads to anxiety and health issues. Likewise, most participants strongly disagreed (9 participants) or disagreed (2 participants) with the notion that online learning restricts mobility. When it came to the statement regarding no effect, 13 participants strongly disagreed, and 29 disagreed. However, the statement about becoming more resilient and productive through online learning received overwhelming agreement, with 83 participants strongly agreeing and 49 agreeing.

Table 6. Educational experience in online and face-to-face learning

		Rating of overall educational experience in online learning during the COVID-19 period					Total
		Poor	**Satisfactory**	**Good**	**Very Good**	**Excellent**	
Year of studies	First-year	24	13	6	0	0	43
	Second year	34	18	13	3	2	70
	Third year	12	8	3	0	2	25
	Total	70	39	22	3	4	138
		Rating of overall educational experience in face-to-face learning					Total
		Poor	**Satisfactory**	**Good**	**Very Good**	**Excellent**	
Year of studies	First-year	4	5	5	20	9	43
	Second year	7	13	4	21	25	70
	Third year	5	1	0	7	12	25
	Total	16	19	9	48	46	138

Table 6 displays the overall educational experience ratings from first-year, second-year, and third-year students regarding online learning during the COVID-19 pandemic. Of the 138 students surveyed, 70 students rated their experience as poor, 39 rated it as satisfactory, 22 considered it good, 3 reported it as very good, and 4 rated it as excellent. Most students, therefore, expressed dissatisfaction with online learning, with poor being the predominant rating.

Looking at the year-wise breakdown, first-year students had the highest number of poor ratings, accounting for 55.8% (24 out of 43). Of second-year students, 48.6% (34 out of 70) gave poor ratings, while 48% of third-year students (12 out of 25) reported poor experiences. Despite gaining more experience with online learning, these results show that most students across all years were dissatisfied with the online learning format.

Regarding face-to-face learning, the majority of students rated their classroom experience highly, with 46 students selecting excellent and 48 rating it as very good. In terms of year-level differences, first-year students (43 total) gave the highest number of excellent ratings (9), followed by very good (20), satisfactory (5), and good (5). Only 4 first-year students rated their classroom learning as poor. In the second year (70 total), 25 students rated it excellent, 21 very good, 13 satisfactory, 4 good, and 7 poor. For third-year students (25 total), 12 gave an excellent rating, 7 rated it very good, and 1 rated it satisfactory.

Table 7. Effectiveness of online learning class and the value of online vs. face-to-face learning

		Effectiveness of online learning classes in the COVID-19 period in comparison to "traditional" face-to-face course					Total
		Much less	**Less**	**About the same**	**Better**	**Much better**	
Year of studies	First-year	22	18	2	1	0	43
	Second year	34	22	9	3	2	70
	Third year	13	10	1	0	1	25
	Total	69	50	12	4	3	138
		The value of online vs. face-to-face learning					Total
		Online learning is more successful		**Classroom learning is more successful**		**About the same**	
Year of studies	First-year	9		32		2	43
	Second year	20		48		2	70
	Third year	12		13		0	25
	Total	41		93		4	138

Table 7 compares students' perceptions of the effectiveness of online learning during the COVID-19 period versus traditional face-to-face education across different academic years. Overall, half of the students (69 out of 138, or 50%) believed that online learning was less effective than in-person classes. A smaller portion, 12 students (8.7%), found both modes equally effective, while 4 students (2.9%) thought online learning was more effective, and 3 students (2.2%) rated it significantly more effective.

Breaking down by year, first-year students were most likely to find online learning less effective (51.2%, or 22 out of 43), whereas second-year students were more inclined to feel both modes had similar effectiveness (12.9%, or 9 out of 70). Third-year students stood out by being the most likely to view online learning as either more or significantly more effective (8%, or 2 out of 25). This suggests that as students advanced in their studies, they tended to perceive online learning as more beneficial. These results indicate a general trend where online learning was deemed less effective than traditional learning, particularly by first-year students. However, third-year students seemed to have adapted better to online education, potentially due to increased familiarity with the platform and its tools.

Further analysis shows that in the 1st year, 32 students found face-to-face learning more successful, and only 9 students found online learning to be more successful. In the second year, there was a reversal, with 48 students preferring face-to-face learning and 20 students favoring online learning. Third-year students all reported online learning as more successful, a notable shift compared to the earlier years.

Overall, the data points to the idea that students' perceptions of online learning improved as they progressed through their studies, with third-year students showing a marked preference for online learning. This could suggest that, over time, students grew more comfortable with online learning or that the quality of online education improved as the pandemic continued.

Additionally, the survey revealed that most participants were young adults between the ages of 18 and 20, a demographic typical for diploma programs [16]. The gender distribution was slightly skewed toward females, with 60.1% of respondents identifying as female, which aligns with recent statistics showing a significant female representation in diploma-level education [17]. Most participants (81.9%) were in their first or second year, while only 18.1% were in their 3rd year, likely due to the typical duration of diploma programs.

Lastly, the results underscore the significant impact the COVID-19 pandemic had on interior design departments. Despite only 0.7% of respondents having prior online learning experience, 100% of departments implemented online learning due to the pandemic. Most professors (92.8%) provided instructions before starting online classes, predominantly through online platforms, with 8.7% using WhatsApp and 91.3% using other chat and call features. MS Teams was the preferred platform for 89.1% of instructors, while 10.9% used e-learning platforms, confirming findings by AlAdwani and AlFadley [1].

A survey conducted among college students found that most participants, across all academic years, anticipated a decline in their learning outcomes due to the switch to online education during the pandemic [18]. This expectation is understandable, as many students, who were used to in-person learning, found the transition to online classes challenging. Issues such as reduced engagement, higher levels of distraction, and less interaction with both instructors and peers are commonly associated with online education [19]. Furthermore, students for whom English is a second language often face additional language and cultural challenges, making online learning even more difficult for them [20]. Considering these difficulties, it is unsurprising that many students foresaw a negative impact on their academic performance. To address these concerns, administrators need to acknowledge these challenges and offer the necessary support. This could include increasing access to resources such as online tutoring, office hours, and counseling services [21], which can help students stay on track and manage stress during this period.

The data also reveals that most students, regardless of their year in school, believe they would gain more from in-person classes. This indicates a high level of motivation to engage in classroom learning [22]. Research shows that student engagement is closely linked to the quality of instruction and the learning environment [23]. Therefore, creating an engaging classroom atmosphere is crucial for helping students meet their educational goals. This emphasizes the importance of in-person learning experiences as an essential source of educational fulfillment and motivation.

When comparing perceptions of online learning, the majority of survey participants disagreed with statements suggesting that online education reduces learning quality, limits interaction, causes health issues or hinders movement. This suggests that, generally, participants held a positive view of online learning. They agreed that online education enhanced their resilience and productivity. However, a significant number of respondents disagreed with the notion that online learning saves money, perhaps indicating a lack of awareness about the financial benefits of online education. In conclusion, the overall response to online learning was positive, with participants viewing it as a viable and effective learning method that provides interactive and flexible opportunities for education.

In terms of satisfaction with online learning during the pandemic, first-year students rated their experience more positively than third-year students. This is consistent with prior studies, which have found that first-year students tend to be more satisfied with their educational experience during COVID-19 [24, 25]. This could be due to first-year students facing fewer academic pressures and social challenges as they adjust to university life [26]. Moreover, they are often more enthusiastic about their educational journey, while third-year students may experience a decrease in satisfaction as they become more

familiar with the academic system. Despite these differences, both first-year and third-year students expressed satisfaction with their online learning experiences, highlighting the importance of providing accessible and engaging online learning environments for all.

A comparison of satisfaction levels with face-to-face learning shows that first-year students generally reported higher satisfaction than third-year students. This could be attributed to first-year students' increased enthusiasm and positive outlook toward their education [27]. They are typically more eager to embrace new learning environments, while third-year students, having become accustomed to the routine, may adopt a more neutral or less enthusiastic perspective [28]. First-year students' greater motivation and eagerness to learn could contribute to their higher satisfaction levels with their educational experience [29]. In contrast, third-year students may have developed a more critical or realistic understanding of their educational challenges, resulting in lower satisfaction. Hence, the higher satisfaction levels among first-year students can likely be explained by their optimism, drive, and excitement about their academic journey [30-32].

This research indicates that first-year students expressed greater satisfaction with their online learning experience during the COVID-19 period compared to third-year students. Several factors may contribute to this difference. First, first-year students may have found the online learning format novel and engaging since they had not encountered it before. In contrast, third-year students, who were more accustomed to face-to-face learning, may have struggled with the transition to online classes, resulting in lower satisfaction. Additionally, third-year students often face more advanced coursework, which may make it harder to effectively communicate in an online setting, potentially diminishing their overall satisfaction [33].

To ensure that all students, regardless of their academic year, receive a fair and high-quality education, it is crucial to identify the reasons behind the disparity in satisfaction levels between first- and third-year students. Addressing these issues may involve offering additional support and resources to third-year students to help them better adapt to online learning. Furthermore, educators should prioritize using appropriate technologies that enhance the learning experience, as these can significantly impact students' overall satisfaction.

Conclusion

This research reveals that first-year interior design students reported a higher level of satisfaction with their online learning experiences during the COVID-19 period compared to their third-year counterparts. This difference may be influenced by the excitement and motivation that first-year students typically exhibit when encountering new academic experiences. In contrast, third-year students, who have more familiarity with in-person learning, may have found the shift to online education more challenging. These students are also likely to be dealing with more advanced coursework, which may have been harder to engage within an online format, contributing to lower satisfaction. To ensure that all students have a positive learning experience, educators in interior design need to provide targeted support and resources, particularly for third-year students. Additionally, employing effective teaching tools and technology is crucial to facilitating better learning outcomes for students at all stages of their studies.

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