© Journal of Accessibility and Design for All (JACCES), Volume 14, Issue 1, 2024, ISSN: 2013-7087
DOI: https://doi.org/10.17411/jacces.v14i1.374

# The impacts of mental health and psychological well-being on architecture students' performance during distance learning.

## Lessons learnt from the COVID-19 lockdown in Jordan

Deyala Tarawneh
Architecture Department, University of Jordan, Jordan,
ORCID 0000-0002-5364-0189, d.altarawneh@ju.edu.jo

Haneen A. Al Sawalqa
Architecture Department, University of Jordan, Jordan,
ORCID 0000-0003-4580-7572, h.alsawalqah@ju.edu.jo

Maysoleen Al-Adayleh
Department of Architecture, Università degli Studi G. d'Annunzio Chieti e Pescara, Italy,
ORCID 0000-0001-7502-3950, maysoleen@gmail.com

Saleem M. Dahabreh
Architecture Department, University of Jordan, Jordan,
ORCID 0000-0002-1659-2085, saleem.dahabreh@ju.edu.jo

Hasan Isawi
Architecture Department, University of Jordan, Jordan,
ORCID 0000-0002-8666-0231, h.isawi@ju.edu.jo

Received: 2021-11-11 | Accepted: 2024-03-19 | Publication: 2024-05-11

Abstract: Amidst the global COVID-19 pandemic, strict lockdown measures were implemented worldwide to safeguard lives and limit widespread infections. Accordingly, distance learning methods were implemented at educational institutions. This paper critically examines the adaptation of distance learning methods for university students during this crisis, arguing that insufficient attention was given to mental health and mental and emotional well-being. The situation's urgency led to overlooking psychological factors that subsequently impacted students' learning outcomes and academic performance, especially when compared to traditional learning experiences.

This paper focuses on architecture students at the University of Jordan, aiming to reveal to what extent the implementation of distance learning during the COVID-19 lockdown affected their mental health and psychological well-being, thus affecting their overall performance. Using a mixed-method approach, the paper included real-time class observation, reflection exercises conducted during the lockdown, and a survey distributed to architecture undergraduates. The survey aimed to increase our understanding of the intricate connections between mental health, psychological well-being, and the dynamics of online educational environments, thus providing insights for future online learning scenarios.

The paper's findings exposed overlooked dimensions during the rapid transition to online learning. The emphasis on technical aspects such as infrastructure, devices, and software side-tracked the end-users importance and performance within the educational process. Concepts like 'toxic positivity,' intensified by increased social media usage during the lockdown, gained prominence. By examining the impact on architecture students in Jordan, this paper underscores

key findings, identifies critical issues, and advocates for a more comprehensive approach to distance learning.

Keywords: Mental health, psychological well-being, COVID-19, distance learning, toxic positivity, Jordan.

## 1. Introduction

During COVID-19, Jordan enforced a total lockdown as an essential measure to mitigate the pandemic's spread and safeguard lives. In response to this situation and to guarantee the ongoing provision of education across various academic levels, there was a nationwide shift to online teaching. Considerable efforts were invested in bolstering the technical infrastructure crucial for sustaining the educational process. Concurrently, initiatives aimed at enhancing educational service providers' skills, including academic and administrative staff, have been rigorously pursued. Amidst these commendable endeavours, students' mental health and psychological well-being, and their potential impact on learning outcomes and academic performance, have regrettably received less attention and a lower placement in officials' priority lists.

While an extensive body of literature thoroughly explores the impact of mental health on student performance (Rapuano 2019; Baloran 2020; Blankenberger and Williams 2020; Darling-Hammond et al. 2020). A limited amount of research has focused on the effects of the lockdown on the mental health of students; moreover, the unique circumstances presented by the COVID-19 pandemic, along with the unprecedented shift to distance learning, compelled this paper to investigate if and how mental health and psychological well-being were taken into account during the transition from traditional (in-person) to non-traditional (online) learning environments for university students.

During the lockdown, the insistence on maintaining a positive outlook regardless of the severity of one's circumstances, otherwise known as ‘Toxic Positivity’, a concept that potentially hinders the natural expression of emotions and impedes effective emotional coping, imposed an additional burden on university students to elevate their performance in unrealistic measures, often resulting in adverse outcomes such as anxiety and burnout, which this paper also highlights as a potential threat.

By examining the outcomes of a survey distributed to a sample of 84 students from the Architecture Department at the University of Jordan during the online teaching period, which commenced with the initiation of the COVID-19 national lockdown in mid-March for six weeks which later shifted into a strictly-enforced curfew, this paper aims to assess and appraise the level of awareness concerning mental health and psychological well-being among the participants; to shed light on any emerging coping mechanisms that may be observed; and lastly, to pinpoint potential strategies for affording heightened consideration to mental health and psychological well-being in the anticipated permanent shift toward online instruction.

## 2. Literature review

The impacts of daily stress and workload on sleep patterns, physical activity, emotional state, sociability, mental well-being, and academic performance of students have been explored in numerous literature discussions. However, discussions highlighting the concerns about the mental health of people impacted by COVID-19 have not been adequately addressed (Chaturvedi

et al. 2021; Dodd et al. 2021). Much research has been published addressing what has been technically done to cope with the COVID-19 lockdown. For instance, post the suspension of face-to-face classes due to COVID-19 in Hong Kong, Moorhouse (2020) describes in detail the adaptations made to one of his courses using a combination of asynchronous and synchronous modes of instruction. With the former, annotated material with tutor voice-over was uploaded to the learning management system, group tasks were changed into individual tasks, and additional instructions and notes were provided for clarity—conversely, the latter involved video conferencing software to deliver real-time live sessions. Interestingly, and similar to the study case, Moorhouse found that few students joined the online video calls; students rarely talked and used the chat features instead. Moreover, office hours and communication with students beyond class time were achieved through an instant messaging platform. Additional practices for implementing remote learning during the pandemic in order to reduce setbacks during school closures in other contexts, such as the United States, also highlighted problematic dimensions similar to the referenced research study. Such challenges encompass insufficient resources within educational institutions to facilitate conducive learning environments for students, as well as a widespread lack of internet access in many households. Evidently, students showed signs of anxiety, such as difficulty concentrating or falling asleep. Moreover, studies show that other students are at risk of developing more severe reactions, such as severe depression and suicidal behaviours (Morgan 2020).

Examining the situation from an alternative perspective, teachers' related challenges also emerged worldwide. In Germany, for example, König, Jäger Biela and Glutsch (2020) analysed the extent to which teachers maintained social contact with students and mastered core teaching challenges. Moreover, their study also identified critical factors influencing the adaptation to online teaching, including school computer technology, teacher competence such as technological pedagogical knowledge, and proficiency in digital teaching and learning. These factors were deemed fundamental for the successful transition to online teaching, both during the immediate response to COVID-19 and for long-term sustainability. Other teacher-related challenges emerging in the COVID-19 pandemic era and adding to its uncertainty and mirroring aspects of the study case include (1) availability of practical online connection and support; (2) educator professional development for online learning; (3) conversion of traditional face-to-face courses into successful online courses, and; (4) the recognition of student teachers' practical experience (Van Nuland et al. 2020).

Furthermore, Teachers faced significant challenges adapting to online teaching and maintaining certain levels of interaction and communication with students. A primary contributing factor to these challenges lies in the pervasive uncertainty surrounding the definitive end of university closures and the resumption of regular pre-COVID-19 campus activities. Teachers are further strained by concerns about potential job losses stemming from the economic ramifications of the COVID-19 lockdown. In addition, the expectation to maintain consistent performance and productivity levels while prioritising well-being and care imposes an impractical demand. Teachers are also expected to become more tentative about students' emotions, special needs, and circumstances, all while grappling with the acquisition of new tools and coping mechanisms and fulfilling administrative responsibilities. (Flores and Swennen 2020; Leacock and Warrican 2020; la Velle et al. 2020).

Apart from the technical issues related to remote learning and student academic performance, recent research demonstrates solid reliability between COVID-19 and dysfunctional anxiety (Irawan et al. 2020; Villani et al. 2021). Associations have also been identified between the proliferation of the pandemic and various adverse outcomes, including impairment, reliance on

alcohol/drugs for coping, negative religious coping, extreme hopelessness, and suicidal ideation (Lee 2020). More recently, the utilisation of tools, including smartphones, has been identified to measure and assess such impacts (Wang et al. 2017). From the academic perspective, Corbera et al. (2020) emphasised that the abrupt transition to home-work, the transition to online teaching and mentoring, and the adjustment of research activities during COVID-19 had a significant toll on academia. They argued that in academia, in order to counter the negative effects of such a transition, should adopt an "ethics of care", which is a more human-centric approach in academia, where the well-being of individuals is prioritised, and an ethics of care becomes integral to the academic ethos, especially in times of unprecedented challenges like the COVID-19 pandemic. This fosters a culture of care, refocuses on what is essential, and redefines excellence in teaching and research, resulting in a more respectful and sustainable academic environment both during and after the pandemic. Instances of modifications implemented to shift originally designed face-to-face courses to online delivery, along with the challenges encountered during the process, have been widely documented. For instance, strategies to respond to the emotional toll of the pandemic and online teaching encompass several key measures. These include cultivating a positive and cheerful disposition among teachers to foster both mental and physical well-being, checking on students regularly, and adopting an approach that refrains from undue emphasis on perfection. Additionally, teachers have found practical strategies such as utilising recording methods to be practical (Bos et al. 2016).

## 3. Methodology

The research utilised a mixed-method approach situated within the qualitative paradigm. It adopts a descriptive and analytical narrative approach grounded in documents, surveys, literature, and reflections. The core findings were primarily drawn from an online survey administered during the lockdown period, targeting university students within the study context. The study encompassed 84 undergraduate students affiliated with the Department of Architecture at the University of Jordan, aged between 18 and 22. The sample composition comprised approximately 26% male and 74% female participants residing in various locations across Jordan and abroad. Notably, nearly 88% hailed from the capital, Amman, while the remaining 12% represented other cities in Jordan and overseas. As per the study's timeline and duration, the study was conducted from March 2020 to May 2020; the research coincided with the lockdown period, during which universities were entirely closed, and education transitioned to online platforms across all disciplines and institutions. Post-lockdown, online teaching persisted in compliance with government defence laws and subsequent regulations from the Ministry of Higher Education, continuing up to the remaining of the academic year, and following, new regulations were launched to endorse more hybrid systems for universities to adapt both online and in-person formats. The Ministry of Higher Education in Jordan also focuses on issued guidelines for the integration of online learning in 2021; the guidelines focused on restructuring the academic programs and reviewing their components and contents to align with the requirements of online learning in addition to reviewing the plan for each course within every program to ensure alignment with the adopted learning modality (Ministry of Higher Education 2021).

The online survey, conducted via Google Forms and accompanied by a consent form, adapted questions from the Royal Institute of British Architects (RIBA) survey on the impact of the pandemic on architecture students. The RIBA survey, which examined 398 architecture students, reveals that these young adults are grappling with significant stress and harbour concerns about

their future careers. The findings underscore the extent of the challenges faced, with 58% of students experiencing mental health struggles and nearly half expressing apprehension about their job prospects (RIBA 2021).

Additional insights were gleaned from similar studies (Shih et al. 2003; Darius et al. 2021)and tailored to the study's context. The questionnaire was compiled of 80 items in all, divided into three sections, each concerning a different dimension—the first section included the demographic information for the participants. The second section focused on living space qualities and online learning. The third section was concerned with the mental health and well-being of the students. The questionnaire was anonymous to ensure the confidentiality and reliability of the data.

The data underwent SPSS analysis, with researchers employing descriptive statistics to illuminate respondent characteristics.

In addition to the survey results, real-time observation was complemented by reflective sessions with students during classes. Specifically, at the conclusion of each lecture, a designated period of 5 minutes (referred to as a "safe space") was allocated. During this time, the recording was turned off, and instructors initiated open dialogues with the students. Instances arose where students, upon unmuting their microphones, expressed frustration due to ambient noise hindering their participation. In response, encouragement was provided, emphasising the collective nature of the learning experience. Students were prompted to express challenges encountered in online learning, fostering a collaborative discussion. The observation process also involved the research team exchanging notes through a focus group format, incorporating input from the instructors.

## 4. Results

The pervasive effects of the COVID-19 pandemic have deeply influenced various facets of students' lives, notably impacting both collective and individual physical and mental health. Given these challenges, a heightened emphasis on students' mental health is deemed essential.

Online learning introduces complexities, with experts underscoring the potential challenges in the mental, emotional, and academic realms. The ramifications of the COVID-19 pandemic present substantial hurdles for architecture students. Analysing these consequences fosters the development of informed solutions and future learning scenarios, which have been proposed in different academic institutions similar to Jordan, where the Ministry of Higher Education issued decisions aimed at enhancing the process of distance education and blended learning.

At the outset, participants provided information on gender, age, living arrangements, and current situations. Predominantly, the respondents were female (n=62, 73.8%) compared to (n=22, 26.2%) males, with most falling within the 21-23 age group (n=40, 47.6%). The majority resided in Amman (n=74, 88.1%), and a significant portion lived with their families (n=75, 89.3%) rather than alone (n=7, 8.3%), as detailed in Table 1.

Through the student's responses and reflections on the survey, the research investigated the factors/challenges in education that contribute to poor mental health and how students are affected by them. In general, during the online learning period, students faced four common issues which this paper argues had the biggest impact on their mental health and wellbeing as follows.

*Table 1: Socio-demographic characteristics of participants. Source: Authors, 2020.*

| Variable | Frequency (n) | Percent (%) |
|---|---|---|
| Gender | | |
| Male | 22 | 26.2 |
| Female | 62 | 73.8 |
| Age | | |
| 18-20 | 12 | 14.3 |
| 21-23 | 40 | 47.6 |
| 23-25 | 25 | 29.8 |
| 26 or above | 7 | 8.3 |
| Living in Amman | | |
| No | 10 | 11.9 |
| Yes | 74 | 88.1 |
| Accommodation | | |
| With parents | 76 | 90.5 |
| Grandma house | 5 | 5.9 |
| Hospital | 1 | 1.2 |
| Out of Jordan | 2 | 2.4 |
| Year of Study | | |
| 01-feb | 26 | 30 |
| 03-abr | 36 | 42 |
| 5 | 17 | 20 |
| Online Learning | | |
| Yes | 80 | 96 |
| No | 4 | 4 |
| Currently staying with | | |
| Family | 75 | 89.3 |
| Alone | 7 | 8.3 |
| Friend | 1 | 1.2 |
| Other | 1 | 1.2 |

## 4.1. Accessibility issues

Accessibility issues were concerned with technical infrastructure, including internet connections, devices, technology and programs, were highly significant. As shown in table 2.

Technological barriers in the online learning environment have an impact on the online learning adaptation process. As revealed from the results, it could be seen that poor technical infrastructure is a significant obstacle in online learning.

According to a study by Zolghadri and Mallahi (2013), and similar to the study findings, the most relevant themes connected to infrastructure hurdles to e-learning were low-speed internet networks, communication challenges, and difficulty accessing the Internet.

*Table 2: Accessibility Issues. Source: Authors, 2020.*

| Variable | Frequency (n) | Percent (%) |
|---|---|---|
| a. Digital tools | | |
| The used digital tools | | |
| Laptop | 41 | 49.1 |
| Portable tablet | 13 | 1.6 |
| Mobile phone | 36 | 43.3 |
| PC | 5 | 6 |
| Time spent on digital tools/Number of lectures per week | | |
| 1 - 2 | 32 | 38.1 |
| 3 - 4 | 35 | 41.7 |
| More than 5 | 17 | 20.2 |
| The level of online effectivity | | |
| Extremely low | 16 | 19 |
| Low | 25 | 29.7 |
| Moderate | 26 | 31 |
| High | 12 | 14.3 |
| Extremely high | 2 | 2.3 |
| b. Internet connections | | |
| Availability of internet connection | | |
| Intermittent connection | 34 | 41 |
| Constant connection | 50 | 59 |
| Online classes attendance | | |
| No | 4 | 4.8 |
| Yes | 80 | 95.2 |
| Full lecture attendance | | |
| Yes | 66 | 78.6 |
| No | 18 | 21.4 |
| c. Used software's/ programs (most effective platform) | | |
| Used online meeting apps | | |
| Zoom | 22 | 26.1 |
| Microsoft teams | 12 | 14.2 |
| Facebook | 12 | 14.2 |
| Nothing | 17 | 20.3 |
| Other | 7 | 8.3 |
| Level of app's effectivity (Does it suit the architectural teaching requirements?) | | |
| Extremely low | 38 | 45.2 |
| Low | 19 | 22.6 |
| Moderate | 24 | 28.5 |
| High | 3 | 3.5 |
| Extremely high | 0 | 0 |

According to a study by Zolghadri and Mallahi (2013), and similar to the study findings, the most relevant themes connected to infrastructure hurdles to e-learning were low-speed internet networks, communication challenges, and difficulty accessing the Internet.

The online learning infrastructure consists of a variety of tools and equipment, including: internet connection, devices (pcs and laptops devices, portable tablets and mobile phones), in addition to technologies and programs. If all of these factors were sufficiently effective, online learning may be successfully implemented.

#### 4.1.1. Internet connection

According to the survey results, many students were not provided with the high bandwidth or the robust internet connection that online courses require and thus failed to catch up with their online classrooms. The survey showed that about 95% of the respondents attended online classes. However, 66% of the students had internet connections problems, and 39% of the students could not complete the lectures due to the weak internet connection, which required extra effort from the student to follow up on the lessons they missed.

#### 4.1.2. Devices

The main tools used in the online classrooms were pcs and laptops devices, in addition to portable tablets and mobile phones. About 32% of students reported that they did not own computers and shared the available devices with their family members. This leads them to seek help in learning resources for technical assistance.

#### 4.1.3. Technologies and programs (Computer Literacy)

Architecture students need special tools and programs due to the specific nature of the field, and in-person feedbacks are constantly needed especially in design subjects. In the online classroom, the video conferencing applications did not support this type of learning.

About 51% of the students complained that the services offered by these videoconferencing applications such as Zoom, Facebook, and Microsoft teams, were not efficient with architecture modules. As a result, 21% of the students recommended cancelling the online teaching or improving the used programs and technologies to satisfy the online teaching process.

### 4.2. Academic performance issues

Academic performance issues were concerned with the readiness and qualification of instructors, level of communication skills, excellence and experience, learning process and used methods. As mentioned earlier, the nature of architecture modules is a mix of theoretical and practical subjects which requires much practical work, group meetings and face-to-face interactions with others, as shown in Table 3.

During the study period, all subjects were given online, which led to a much more challenging and less effective learning process, that in return negatively affected the students' performance. The survey revealed that students were not well-prepared and had adaptability struggles with online learning. Students were used to traditional teaching methods, so they could not adapt to the new situation. 44% of the students said that the online classes were of low efficiency in contrast with the physical classroom, which can be referred to many factors:

© Journal of Accessibility and Design for All (JACCES), Volume 14, Issue 1, 2024, ISSN: 2013-7087
DOI: https://doi.org/10.17411/jacces.v14i1.374

*Table 3: Academic performance issues. Source: Authors, 2020.*

| Variable | Frequency (n) | Percent (%) |
|---|---|---|
| Use of digital learning tools is responsible for student's low academic performance | | |
| Yes | 65 | 78 |
| No | 18 | 22 |
| The tasks, exams required by e-learning led to confusion and poor performance | | |
| Yes | 59 | 69.7 |
| No | 20 | 20.2 |
| Used teaching methods | | |
| Classic (recorded lectures and presentations) | 72 | 85.7 |
| Modern (suits the current situation) | 12 | 14.2 |
| The modules that were more effective in online teaching during the lockdown period (ranking the modules according to their effectiveness) | | |
| Architectural theoretical modules | 43 | 51.2 |
| Architectural practical modules | 20 | 23.8 |
| General theoretical modules | 36 | 42.8 |
| General practical modules | 18 | 21.4 |
| Instructors Readiness | | |
| Well-prepared (improved teaching methods) | 48 | 57.1 |
| Not prepared/ not organized | 11 | 13.1 |
| Don't interact with students | 25 | 29.7 |
| Taking any design online classes during the lockdown period | | |
| No | 15 | 17.9 |
| Yes | 69 | 82.1 |

a. Using recorded lectures: although recorded lectures offered the flexibility of replying them at any time desired, the missing interaction whether between students themselves or between students and instructors, made understanding practical subjects more challenging. And while theoretical topics such as history of architecture, housing issues, architecture and psychology, architectural criticism, were easier to comprehend, practical subjects had the most problems. About 52% of the responses pointed that the online classes, especially the practical subjects, were ineffective due to their different teaching methods such as design studios, technical drawings, freehand, building constructions, and graduation projects.

b. Instructors Readiness: Although universities moved to online classes, most instructors still used the same curricula and learning outcomes meant for face-to-face teaching. Student's reflection revealed that some instructors were unprepared and struggled with unfamiliar teaching methods, forcing them to resort to trial-and-error approaches. The experience of the instructors with online education was minimal, so they could not cope with the students in a seamless way that fits with distance learning. This affected the level of communication skills excellence between students and instructors. In other words, not having well-planned teaching strategies and methods that fit the new situation of education made the communication process more complicated. Moreover, 34% of responses noted that more

time is needed for the online classes than physical classes. And almost half of the responses showed that there was not enough interaction while having recorded lessons, reading pdf files or copied books, and PowerPoint slides. Some instructors did not follow up with students as they used to in the physical classroom.

c. The study revealed that the students of the first and second year were the most affected by online learning because most of the modules during the first and second year are given manually, not computerised; for example, basic design, freehand sketching, architectural drawings and building constructions. Therefore, having feedback on manual drawings through the computer screen was very difficult and inefficient. The third-year students become less affected than the fourth-year students and the fifth-year students were the least affected because they almost finished the required modules and only have the graduation project.

## 4.3. Social issues

Social issues were concerned with social interaction, privacy/level of confidence with online classrooms, and home environment, as shown in Table 4.

The survey results showed that social issues such as: student confidence with online classrooms, privacy, and family corporation widely affected the online learning process.

a. Student confidence with online classrooms: Students' comfort with online classrooms was notably affected by the use of cameras during lectures, proving to be an uneasy and challenging adjustment for many. The survey responses indicated that a significant 69% of students, particularly females, opted not to activate their cameras. Among those who did use the camera (constituting 77% of the respondents), a substantial portion expressed discomfort for various reasons. Some students cited a lack of trust in online platforms and concerns about privacy breaches within their homes, fearing the inadvertent appearance of family members during the sessions. Additionally, others hesitated to use the camera due to feeling unprepared or unequipped for its use.
b. Privacy: Architectural students encountered a significant challenge related to the insufficiency of privacy during their online learning experiences. Given the unique study requirements of architecture, which involve the use of drawing tables and tools, students found their homes to be inadequate compared to the dedicated physical classrooms in the university. The survey findings underscored that the online learning environment at home did not provide a satisfactory level of privacy for students during their lessons. A substantial 84.5% of the respondents expressed that the deficiency in privacy had a detrimental impact on the overall quality of their lives.
c. Family corporation: during the lockdown and online learning, the family environment played a significant role in providing support and a healthy environment for students. Considering that this is a sudden and unfamiliar situation, students faced difficulties with their families. 90% of the responses spent the lockdown with their families. However, there was a lack of cooperation between parents and students during their online education. 79% of the students were forced to interrupt their lectures because of family's daily activity and requirements. That causes distraction, lack of focus and leads them to spend extra time following up with the missing lessons.

*Table 4: Social issues. Source: Authors, 2020*

| Variable | Frequency (n) | Percent (%) |
|---|---|---|
| **Social interaction** | | |
| Interacting with instructors | | |
| Low | 35 | 42 |
| Moderate | 30 | 44 |
| High | 11 | 13 |
| Face-to-face interaction contributes significantly to boosting students' academic achievement | | |
| Yes | 74 | 90 |
| No | 10 | 10 |
| Using camera | | |
| No | 58 | 69.0 |
| Yes | 26 | 31.0 |
| Feeling comfortable when opening the camera during online class | | |
| No | 65 | 77.4 |
| Yes | 19 | 22.6 |
| Feeling of privacy (positive or negative impact) | | |
| No | 28 | 33.3 |
| Yes, Positive | 30 | 35.7 |
| Yes, Negative | 26 | 30.9 |
| Reason of feeling unsecure | | |
| The situation was unfamiliar | 10 | 11.9 |
| The lectures were recorded | 7 | 8 |
| The sudden problems with Internet connections | 24 | 28.5 |
| Lack of motivation | 43 | 40.4 |
| **Family Corporation** | | |
| Have an obstacle with family | | |
| Yes | 40 | 44 |
| No | 44 | 56 |
| Obstructed by family everyday life activities during online classes | | |
| No | 18 | 21.4 |
| Yes | 66 | 78.6 |

## 4.4. Spatial issues

Spatial issues were concerned with the living space qualities and equipment available that aid the online learning process, as shown in Table 5.

The survey results showed that the living space qualities and the available equipment were not adequate for students to study. Having a private place encouraged the student to improve their skills and offer flexibility to learn new skills and work efficiently. Most of the participants spend the lockdown period in their original living place (n=76, 90.5%) with their family. They shared the

same room with brothers and sisters, which prevented them from getting their own space to do their work compared with the students with a private room. About half of the participants did not have a private room (n=43, 51.2%) and shared their room with 1 to 2 more people.

To sum up, living space design did not support online learning as the physical learning rooms. More than half of the participants lacked privacy, impacting their learning quality (n=55, 65.5%). This impact negatively affected 58.4% compared to 7.1% that were positively affected. Furthermore, the lack of enough space to get the privacy they need in the living place caused a distraction for the students; simultaneously, being alone in front of the computer screen for a long time every day with no interactions harmed students' mental health.

*Table 5: Spatial issues. Source: Authors, 2020.*

| Variable | Frequency (n) | Percent (%) |
|---|---|---|
| Private room during lockdown | | |
| No | 43 | 51.2 |
| Yes | 41 | 48.8 |
| If NO, Number of people you share your room with | | |
| 0 | 36 | 42.9 |
| 01-feb | 40 | 53.6 |
| 03-abr | 3 | 3.6 |
| If student does not have a private room, does privacy concern have an impact on learning? | | |
| No | 28 | 33.3 |
| Yes | 56 | 66.7 |
| The design of student's lockdown space supports online learning | | |
| Yes | 34 | 40.5 |
| No | 50 | 59.5 |
| The negative impact of having a lockdown space that doesn't support online learning | | |
| Very low | 8 | 9.5 |
| Low | 13 | 15.5 |
| Medium | 30 | 35.7 |
| High | 18 | 21.4 |
| Very high | 3 | 3.6 |
| A proper desk is available during online classes | | |
| No | 48 | 57.1 |
| Yes | 36 | 42.9 |
| Dressing up for online classes | | |
| Yes, only the upper part | 32 | 38.1 |
| No | 35 | 41.7 |
| Yes, fully dressed | 17 | 20.2 |

## 5. Discussion

The study investigated the influence of online learning on the mental health of architecture students, revealing four major issues throughout this time. First, accessibility difficulties involving technological infrastructure arose as a key concern. Technical obstacles, particularly low-speed internet networks and issues accessing the internet, hampered successful online learning. The lack of reliable internet connections, shared equipment, and inefficient video conferencing apps were cited as important inhibitions, highlighting the need for improved online learning infrastructure.

Second, academic performance difficulties were identified, emphasising the need for teacher preparedness, improving online communication skills, and the provision of flexible learning techniques. The switch to online classrooms revealed gaps in instructor preparation and a challenge with different teaching styles. Students reported a preference for in-person interactions and hands-on work, noting the inefficiency of recorded lectures and the necessity for professors to modify teaching methodologies to meet the online setting. According to the study, students in the first and second years were more negatively affected, particularly those participating in manual modules, while the impact decreased for third and fourth-year students.

Third, social concerns appeared as a major component influencing students' online learning experiences. Concerns regarding privacy, trust in online classes, and family collaboration were prevalent. The reluctance to utilise cameras during lectures, which was linked to privacy concerns and discomfort, had a detrimental influence on student involvement. The absence of quiet locations and family disruptions during online lectures exacerbated distraction and created a less favourable study environment.

In conclusion, the study discovered that the living environment design had a substantial impact on the quality of online learning. The majority of participants had limited privacy, with more than half sharing rooms with others. This impaired their capacity to concentrate and had a detrimental influence on their mental well-being. The study emphasised the need for enhanced online learning infrastructure and instructor readiness, and attention to social factors to enhance the overall well-being of architecture students during periods of online learning.

## 6. Conclusions

This study examined the effects of distance learning on architecture students at the University of Jordan, with an emphasis on their mental health and overall well-being. The paper utilizing survey as a research method, which included structured and open-ended questions, found issues that prevented students from meeting intended learning objectives, resulting in inferior academic accomplishment as compared to traditional teaching methods.

The findings revealed that, while online education environments are beneficial for certain students, they may not always benefit their mental health due to a number of factors. Mainly, the unique nature of architectural courses, along with the abrupt shift from physical to online sessions, led in heightened stress, worry, depression, and concentration. As a recommended option, converting each course's curriculum to an online base course improves the learning experience for both students and teachers. The study highlighted the psychological repercussions stemming from the unanticipated switch to online learning, emphasizing the need for a well-planned teaching approach that includes training for both students and instructors. Training

sessions on various applications and software stand recommended to improve the teaching process and foster a more effective learning environment.

Notably, this study drew attention to the essential need of providing adequate internet bandwidth where vast areas across the primarily rural regions across Jordan does not have sufficient reliable broadband and cellular service to ensure the connectivity needed for both students and teachers. Fast and reliable internet remains critical for the sustainability of online learning especially in rural, particularly in remote and underserved areas across Jordan, to ensure seamless connectivity for students and teachers.

The challenges identified in this research underscored that for a successful transition to online teaching necessitates, not only adequate technology and infrastructure but also a comprehensive understanding of the required technology by academics. For example, the study found that academics are often unfamiliar with the technology required to conduct online courses or develop webinars and resource material for student learning unless it falls in their particular area of expertise. Thus, the results advocated for a nuanced approach, suggesting that blended courses, combining online and in-class elements, could offer a more effective solution, particularly for design studio courses.

In conclusion, this paper examined the various challenges students faced in during transition from face to face to online learning. The paper highlights the importance of considering the negative psychological and emotional consequences of online learning in addition to the need for addressing technology requirements. While technology .is important for distance learning, it is equally important to address students' psychological, emotional, and mental challenges. Findings emphasize the need to recognize the limitations of the virtual environment, acknowledge the human dimension in education, and develop strategies to minimize adverse effects that occur on student well-being and academic achievement.

It is crucial to note that the study's findings may not be universally applicable, given its specific context within Jordan and the University of Jordan. The sudden shift to online learning, while essential during the pandemic, had profound effects on students' mental health and well-being. As the study concludes, the impact of COVID-19 on students' mental and physical health calls for attention and support, echoing the sentiment of encouraging those struggling to seek help as needed.

## 7. Bibliography

Baloran, E. T. (2020). Knowledge, attitudes, anxiety, and coping strategies of students during COVID-19 pandemic. Journal of loss and trauma, 25(8), 635-642. https://doi.org/10.1080/15325024.2020.1769300

Blankenberger B, Williams AM. 2020. COVID and the impact on higher education: The essential role of integrity and accountability. Adm Theory Prax [Internet]. 42(3):404–423. https://doi.org/10.1080/10841806.2020.1771907

Bos, N., Groeneveld, C., Van Bruggen, J., & Brand-Gruwel, S. (2016). The use of recorded lectures in education and the impact on lecture attendance and exam performance. British Journal of Educational Technology, 47(5), 906-917. https://doi.org/10.1111/bjet.12300

Chaturvedi, K., Vishwakarma, D. K., & Singh, N. (2021). COVID-19 and its impact on education, social life and mental health of students: A survey. Children and youth services review, 121, 105866. https://doi.org/10.1016/j.childyouth.2020.105866

Corbera, E., Anguelovski, I., Honey-Rosés, J., & Ruiz-Mallén, I. (2020). Academia in the Time of COVID-19: Towards an Ethics of Care. Planning Theory & Practice, 21(2), 191-199. https://doi.org/10.1080/14649357.2020.1757891

Darius PSH, Gundabattini E, Solomon DG. 2021. A Survey on the Effectiveness of Online Teaching–Learning Methods for University and College Students. J Inst Eng Ser B [Internet]. 102(6):1325–1334. https://doi.org/10.1007/s40031-021-00581-x

Darling-Hammond, L., Flook, L., Cook-Harvey, C., Barron, B., & Osher, D. (2020). Implications for educational practice of the science of learning and development. Applied developmental science, 24(2), 97-140. https://doi.org/10.1080/10888691.2018.1537791

Dodd, R. H., Dadaczynski, K., Okan, O., McCaffery, K. J., & Pickles, K. (2021). Psychological wellbeing and academic experience of university students in Australia during COVID-19. International Journal of Environmental Research and Public Health, 18(3), 866. https://doi.org/10.3390/ijerph18030866

Flores, M. A., & Swennen, A. (2020). The COVID-19 pandemic and its effects on teacher education. European Journal of Teacher Education, 43(4), 453-456. https://doi.org/10.1080/02619768.2020.1824253

Irawan, A. W., Dwisona, D., & Lestari, M. (2020). Psychological impacts of students on online learning during the pandemic COVID-19. KONSELI: Jurnal Bimbingan dan Konseling (E-Journal), 7(1), 53-60. http://dx.doi.org/10.24042/kons.v7i1.6389

König, J., Jäger-Biela, D. J., & Glutsch, N. (2020). Adapting to online teaching during COVID-19 school closure: teacher education and teacher competence effects among early career teachers in Germany. European journal of teacher education, 43(4), 608-622. https://doi.org/10.1080/02619768.2020.1809650

Leacock, C. J., & Warrican, S. J. (2020). Helping teachers to respond to COVID-19 in the Eastern Caribbean: issues of readiness, equity and care. Journal of Education for Teaching, 46(4), 576-585. https://doi.org/10.1080/02607476.2020.1803733

Lee, S. A. (2020). Coronavirus Anxiety Scale: A brief mental health screener for COVID-19 related anxiety. Death studies, 44(7), 393-401. https://doi.org/10.1080/07481187.2020.1748481

Ministry of Higher Education. 2021. Instructions for integrating e-learning into higher education institutions for the year 2021 Issued based on the provisions of Article (6) of the system for integrating e-learning into institutions Higher Education No. (69) of 2021. Off News. https://www.mohe.gov.jo/ebv4.0/root_storage/ar/eb_list_page/%D8%AA%D8%B9%D9%84%DB%8C%D9%85%D8%A7%D8%AA_%D8%A5%D8%AF%D9%85%D8%A7%D8%AC_%D8%A7%D9%84%D8%AA%D8%B9%D9%84%D9%85_%D8%A7%D9%84%D8%A5%D9%84%D9%83%D8%AA%D8%B1%D9%88%D9%86%D9%8A_%D9%81%D9%8A_%D9%85%D8%A4%D8%B3%D8%B3%D8%A7%D8%AA_%D8%A7%D9%84%D8%AA%D8%B9%D9%84%DB%8C%D9%85_%D8%A7%D9%84%D8%B9%D8%A7%D9%84%D9%8A_%D9%84%D8%B3%D9%86%D8%A9_%D9%A2%D9%A0%D9%A2%D9%A1-0.pdf (in Arabian).

Moorhouse, B. L. (2020). Adaptations to a face-to-face initial teacher education course 'forced'online due to the COVID-19 pandemic. Journal of education for teaching, 46(4), 609-611.https://doi.org/10.1080/02607476.2020.1755205

Morgan, H. (2020). Best practices for implementing remote learning during a pandemic. The clearing house: A journal of educational strategies, issues and ideas, 93(3), 135-141. https://doi.org/10.1080/00098655.2020.1751480

Van Nuland, S., Mandzuk, D., Tucker Petrick, K., & Cooper, T. (2020). COVID-19 and its effects on teacher education in Ontario: a complex adaptive systems perspective. Journal of Education for Teaching, 46(4), 442-451. https://doi.org/10.1080/02607476.2020.1803050

RIBA. 2021. RIBA publishes results of COVID-19 student survey. COVID-19 student Survey [Internet]. [accessed 2024 Mar 10]. https://www.architecture.com/knowledge-and-resources/knowledge-landing-page/riba-covid-19-survey-executive-summary

Shih, T. K., Antoni, G. D., Arndt, T., Asirvatham, A., Chang, C. T., Chee, Y. S., ... & Wang, Y. H. (2003). A survey of distance education challenges and technologies. International Journal of Distance Education Technologies (IJDET), 1(1), 1-20. http://dx.doi.org/10.4018/jdet.2003010101

La Velle, L., Newman, S., Montgomery, C., & Hyatt, D. (2020). Initial teacher education in England and the Covid-19 pandemic: Challenges and opportunities. Journal of Education for Teaching, 46(4), 596-608. https://doi.org/10.1080/02607476.2020.1803051

Villani, L., Pastorino, R., Molinari, E., Anelli, F., Ricciardi, W., Graffigna, G., & Boccia, S. (2021). Impact of the COVID-19 pandemic on psychological well-being of students in an Italian university: a web-based cross-sectional survey. Globalization and health, 17, 1-14. https://doi.org/10.1186/s12992-021-00680-w

Wang, R., Chen, F., Chen, Z., Li, T., Harari, G., Tignor, S., ... & Campbell, A. T. (2017). StudentLife: Using smartphones to assess mental health and academic performance of college students. Mobile Health: Sensors, Analytic Methods, and Applications, 7-33. https://doi.org/10.1007/978-3-319-51394-2_2

Zolghadri, S., & Mallahi, K. (2013). Research Article A Study on Barriers of E-learning from Viewpoint of University Staff and Students; Iranian Case Study, Islamic Azad University's Branches, Region I (Fars). Research Journal of Applied Sciences, Engineering and Technology, 6(10), 1768-1773. https://doi.org/10.19026/rjaset.6.3901

© Journal of Accessibility and Design for All (JACCES), Volume 14, Issue 1, 2024, ISSN: 2013-7087
DOI: https://doi.org/10.17411/jacces.v14i1.374

## How to cite this article

Tarawneh, D., Al Sawalqa, H., Al-Adayleh, M., Dahabreh , S. . M., & Isawi, H. (2024).The impacts of mental health and psychological wellbeing on students' performance during distance learning; Lessons learnt from the COVID-19 lockdown in Jordan. Journal of Accessibility and Design for All, 14(1), 69-84. https://doi.org/10.17411/jacces.v14i1.374

© Journal of Accessibility and Design for All (JACCES), ISSN 2013-7087, is published by the Universitat Politècnica de Catalunya, Barcelona Tech, with the sponsoring of ONCE Foundation for Cooperation and Social Inclusion of People with Disabilities. This issue is free of charge and is available in electronic format.



JACCES is committed to providing accessible publication to all, regardless of technology or ability. The present document grants vital accessibility since it applies to WCAG 2.2 and PDF/UA recommendations. The evaluation tool used has been Adobe Acrobat® Accessibility Checker. If you encounter problems accessing the content of this document, you can contact us at jacces@catac.upc.edu.