

## PAPER

# A Large-Scale Study on the Preferred Learning Mode in Higher Education: Which One Suits Me Better in the New Normal?

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## ABSTRACT

With the end of school closures due to COVID-19, students had to return to school, where they were exposed to various learning pedagogies while adhering to health restrictions. In this era known as the “new normal,” several organizations, such as UNESCO, have urged the investigation of effective learning strategies and methods to ensure positive learning outcomes. This study aims to investigate students’ preferred learning mode in the new normal. A sequential mixed-methods approach was conducted with 3139 university students. The results revealed that students were divided about their preferred learning mode in the new normal. More than half of them believed that blended and online learning were the future of education, while the rest believed that face-to-face learning was more appropriate.

## KEYWORDS

new normal, pandemic, learning mode, COVID-19

## 1 INTRODUCTION

### 1.1 Learning during COVID-19

During the COVID-19 pandemic, online learning became a solution to the disruption in education globally [1] [2]. In many situations, online has become the only available alternative for delivering education [2] [3], as colleges and universities can easily implement this mode of learning [4]. Hussein et al. [2] revealed that learners cited the positive aspects of emergent online learning during the pandemic as being cost-effective, convenient, and safe. On the negative side, learners experienced reduced focus, a heavy workload, a lack of support from instructors, and challenges with the Internet and technology. In another study [5], students perceived the positive aspects of online learning to include increased time with family, personal growth (in terms of self-care, financial management, and more sleep), and

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new activities (such as gaining new skills and practicing hobbies). However, they also faced situational and environmental challenges, online educational challenges (such as increased workload, insufficient academic resources, unfamiliarity with new technology, and an inability to concentrate), and emotional challenges (such as a lack of motivation and negative emotions). Adarkwah [1] further pointed out that online learning during COVID-19 was accompanied by poor internet access and connectivity, limited funds, glitches in learning management systems, and faculty resistance to adopting online learning. Tang et al. [6] pointed out that motivating teachers to adopt online learning is one of the biggest obstacles to the success of online education. Additionally, many students are not accustomed to online platforms. Dhawan [7] believed that the experiences of educational institutions during the COVID-19 pandemic made online learning not just a mere option but a necessity.

Patricia Aguilera-Hermida [5], on the other hand, revealed that during the COVID-19 pandemic, students preferred face-to-face learning over online learning due to the challenges they experienced while learning. This is in line with the assumption that most educators and students consider online learning inferior or a poor substitute for face-to-face learning [2]. Students' perceptions and motivations regarding a mode of instruction influence their learning preferences [8]. That is, the preference for a particular learning type involves the perception and experiences of students regarding the teaching and learning process in terms of the degree of satisfaction obtained, the benefits gained, and how the learning modality affected their motivation [9]. Artino [10] showed that the instructional format of the course determines the learning modality preference. For example, in the same study, it was mentioned that students' preference for face-to-face learning may be related to how they value course content. According to Artino [10], students appreciate the convenience of online learning; however, given the choice, learners would prefer traditional face-to-face learning over online learning. Therefore, Zhang [11] emphasized the significance of investigating student learning behavior during online learning. Paechter and Maier [12] also found that students preferred face-to-face learning over online forms of learning because of communication purposes and the construction of conceptual knowledge or skills in the application of acquired knowledge. However, they appreciated online learning for its ability to provide a clear and coherent structure for learning materials and information distribution.

A study reported that over three-fourths of the teachers preferred online teaching during the pandemic over face-to-face learning, and most preferred a blended form of teaching in the post-pandemic era [13]. In another study involving 526 participants from 56 countries on whether blended meetings in health education will replace online webinars or face-to-face meetings in the post-COVID-19 era, participants favored face-to-face meetings, followed by blended meetings, and only online meetings [14]. Face-to-face meetings were recognized as increasing opportunities for networking; online meetings were considered more cost-effective; and blended meetings were seen as beneficial in reaching a larger audience. Guppy et al. [15] also showed that learners anticipate more blended or hybrid instruction post-pandemic and moderate increases in future online courses. Chen et al. [16] mentioned that some school administrators and faculty members are in favor of the post-COVID-19 blended delivery of education, which integrates digital technologies with interactions using traditional materials. Benito et al. [17] conclude that future education in the post-COVID-19 era should be hybrid. Megahed and Hassan [18] also emphasized the importance of reimagining post-COVID education through the utilization of blended learning strategies. Additionally, numerous studies from diverse fields of education have found that students prefer blended learning courses over face-to-face or online courses for post-pandemic education [19] [20] [21].

Rajab et al. [22] revealed that students favored blended learning for post-pandemic education due to the challenges they faced with online learning and the constraints of face-to-face learning.

## 2 RESEARCH GAP AND STUDY OBJECTIVES

Huang et al. [23] revealed that the post-COVID-19 era is critical for both students and teachers. New teaching modes and pedagogical approaches are needed to address the needs of students identified during the COVID-19 pandemic. Leal Filho et al. [24] further urged investigation into how to sustain education during crises, especially given the ongoing debate since the 1970s regarding changes in sustainable education, particularly during times of crisis [25]. Wolff [25] further suggested that careful selection of methods, equipment, and technology is necessary to ensure sustainable education and that perceptions towards them are very important [25]. Therefore, it is crucial to investigate how students coped with the new changes in learning, specifically in the post-COVID-19 era, to ensure a sustainable education. This study particularly focuses on education in the Arab region because it has suffered economically and financially compared to the rest of the world, leading to low levels of literacy. This situation has prompted the adoption of new education systems and methods that may enhance learning experiences and outcomes [26]. Therefore, this present study investigates the perception of Arab students towards the teaching methods to be adopted post-COVID-19. The data was specifically collected from Palestinian students. Palestine is an intriguing country in the Arab region to study and analyze due to its 70-year-long occupation, which has significantly affected its education system [27], compounded by the challenges posed by the COVID-19 pandemic. To the best of our knowledge, no study in the literature has conducted a similar analysis. Specifically, this study addresses the following research questions:

*RQ1. What is the preferred learning type for students in the new normal?*

*RQ2. Does gender affect students' preferred learning type in the new normal?*

*RQ3. Does the field of education affect students' preferred learning type in the new normal?*

*RQ4. Does the place of residence affect students' preferred learning type in the new normal?*

## 3 METHODOLOGY

A mixed-method case study design was conducted, in which quantitative and qualitative data collection, results, and integration were used to provide in-depth evidence for the investigated case [28]. Specifically, the researchers of this present study used a sequential design. They started with qualitative data collection, analyzed it, and then constructed the study questionnaire. It was then followed by qualitative data collection to enhance and interpret the results of quantitative data analysis.

## 4 PARTICIPANTS

The population of this study included all the students in the first semester of the academic year 2021–2022. The sample for the quantitative method consisted of 3139 students from all faculties. The questionnaire consisted of 18 items.

The sample for the qualitative approach consisted of 180 students. Tables 1–3 display the distribution of students by gender, field of study, and place of residence.

**Table 1.** Students' gender

Gender	Number	Percentage
Male	1060	33.8
Female	2079	66.2
Total	3139	100.0

**Table 2.** Students' field of education

Field of Education	Number	Percentage
Medicine	1102	35.1
Engineering and IT	838	26.7
Economic and social sciences	315	10.0
Humanities	187	6.0
Law	133	4.2
Agriculture and veterinary medicine	78	2.5
Fine arts	91	2.9
Islamic law	57	1.8
Educational sciences	72	2.3
Sciences	97	3.1
Hisham Hijawi	34	1.1
Graduate studies	135	4.3
Total	3139	100.0

**Table 3.** Students' place of residence

Place of Residence	Number	Percentage
City	1578	50.3
Village	1483	47.2
Camp	78	2.5
Total	3139	100.0

## 5 DATA COLLECTION

The researchers used two instruments to collect data. The first survey consisted of four open-ended questions focused on the students' preference of learning type (face-to-face or online), the challenges that students faced during the two types of learning, and the students' perceptions toward future learning types. The second survey consisted of three parts. The first part is the demographic data of the student. The second part discusses the selection of learning types by students. The third part consists of 18 items divided into three domains. The first domain explores

why students prefer face-to-face learning and consists of nine items, while the second domain investigates why students prefer online learning and also includes nine items. The final domain is an open-ended question where students expressed their opinions about face-to-face learning after experiencing online learning during the pandemic.

The survey was developed based on students' open-ended responses. The survey used a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The reliability coefficient of the questionnaire was calculated using the Gutman equation, resulting in a value of 0.816. The validity of the questionnaire was verified by calculating the Pearson correlation coefficient ( $r$ ) between the mean of each item and the total mean of its domain. Table 4 displays significant positive correlation coefficients.

**Table 4.** The correlation coefficients between each item and its domain

The Preference of Face-to-Face Learning		The Preference of Face-to-Face Learning	
Q	R	Q	R
Q1	0.682**	Q10	0.636**
Q2	0.771**	Q11	0.599**
Q3	0.752**	Q12	0.617**
Q4	0.803**	Q13	0.679**
Q5	0.798**	Q14	0.584**
Q6	0.787**	Q15	0.587**
Q7	0.706**	Q16	0.128**
Q8	0.677**	Q17	0.118**
Q9	0.716**	Q18	0.193**

Note: \*\*Correlation is significant at the 0.01 level (2-tailed).

## 6 FINDINGS

The obtained results are presented according to each research question.

### **RQ1. What is the preferred learning type in the new normal?**

To answer the first question, frequencies and percentages were used to calculate students' responses, as illustrated in Table 5.

**Table 5.** The preferable type of learning

Preferable Type of Learning	Frequency	Percentage
Distance (online)	898	28.6
Face to face	1543	49.2
Blended	698	22.2
Total	100.0	3139

Table 5 indicates that approximately half of the students preferred face-to-face learning. The researchers used the Chi-square technique to support their descriptive conclusion. Table 6 presents the results.

**Table 6.** Chi square test to compare the types of learning

Type of Learning	Observed N	Expected N	Residual	Chi-Square	D.F	Sig.
Distance (online)	898	1046.3	-148.3	372.74	2	0.0001**
Face to face	1543	1046.3	496.7			
Blended	698	1046.3	-348.3			

To support the findings related to the type of learning, the authors classified the students' responses collected from the open questions. It was found that 60% of students preferred online learning, while 40% preferred face-to-face instruction. On the contrary, when asked about their preferences for future learning, 50% favored face-to-face learning, 30% preferred online learning, and 20% recommended blended learning. It is evident that there is a discrepancy in students' opinions. Although they enjoy online learning, they do not recommend it to the same extent.

Many students believe that online learning saves time and effort and costs less. Students do not have to travel from home to university campuses and vice versa, which saves transportation costs and reduces the burden of meal expenses. Several students prefer online learning for graduate studies for various reasons. Students come from various locations after long hours of work. Online learning saves time, money, and effort.

One student said:

*"I can go to my work and still continue learning online so I can save my money."*

Students argue that their evaluation of online learning is often unfair due to the implementation of new assessment methods, such as project-based assessments and case studies. Conversely, the use of closed-end questions has resulted in numerous instances of cheating among students. This led to the fact that well-achieving students felt unfairness and viewed online learning as a means of cheating. Teachers were forced to make exams more difficult, which in turn affected well-achieving students as their grades dropped due to the high level of exam difficulty. One student stated:

*"Online assessment is a failure, untrusted and unfair."*

It was recommended to have online lectures and face-to-face exams, as one student mentioned:

*"Please let us have virtual recorded lectures but keep our tests on campus as usual."*

Recorded lectures are considered one of the vital advantages of online learning because students can access them after the lecture itself. One student mentioned:

*"I can listen to the lecture multiple times and take notes, which is very accurate. I can pause the recording and revisit any part as often as I want, something I can't do in a traditional classroom setting."*

Students attend the meetings while also being able to work on other tasks simultaneously. These tasks include listening to music, chatting with friends, child care, and family household chores. One student expressed his anger by saying:

*“I am addicted to social media. I spend all my time online for a few minutes, then I switch to Facebook and neglect the lecture. However, in face-to-face classes, I can’t use my phone.” He added, “It is like a poison.”*

Many students prefer face-to-face learning and consider it essential for their understanding, peer communication, cognitive development, social interaction, and building their social skills. They also mentioned their rights to access the university’s extracurricular facilities and the university’s extracurricular curriculum. As one student mentioned:

*“It is not just about attending classes, we learn on our way to and from the university, with our colleagues, we participate in sports activities, and university competitions.”*

While another student considered face to face learning as “life itself.”

Social interaction was mentioned as an important advantage of face-to-face learning, where students meet their colleagues and teachers and build friendships that enhance their 21st-century skills. One student said:

*“I prefer to learn on campus and meet my teacher in person. His body language and voice are crucial for effective communication. Human interaction and facial expressions play a vital role in our development, which is lacking in online platforms like Zoom, where video, presentations, polls, and screen sharing are common.” It is just running and audio.*

Another student said:

*“In online learning, it often feels like no one is there just someone is speaking to themselves. Many teachers engage in rote online teaching without utilizing online tools or interactive strategies.”*

One student stated that motivation for learning is higher in face-to-face learning than in online learning, while another one said:

*“I feel that it is more serious than learning online, where you can’t guarantee that learning is actually happening.”*

### **RQ2. Does gender affect students’ preferred learning type in the new normal?**

There was no statistically significant relationship at  $\alpha = 0.05$  between gender and type of learning.

To answer the second research question, the researchers conducted a Chi-square test. Table 7 presents the obtained results.

**Table 7.** Chi square test to examine the relation between gender and type of learning

Gender \ Type of Learning	Online	F2F	Blended	D.F	Chi-Sq.	Sig.
Male	370 (34.9)	441 (41.6)	249 (23.5)	2	41.890	0.001*
Female	528 (25.4)	1102 (53.4)	449 (21.6)			

Table 7 shows a statistically significant relationship at  $\alpha = 0.05$  between gender and the preferred type of learning.

However, many female students prefer face-to-face learning over online and blended learning. Many female students mentioned that online learning enables them to take care of their children while attending their MA classes from home. Closing the camera and muting the voice will allow them to continue running their families as usual. For instance, a female student said:

*“I have four children, I used to open Zoom and at the same time teach my children and answer their needs and after I put them in bed, I go back to listen to the recorded lecture several times.”*

Another female student said:

*“If there was no online learning, I will not be able to continue my MA and I might have to drop out.”*

While another female student mentioned the health issue:

*“Face-to-face learning is better because online learning requires us to sit for long hours, which can cause body aches. On the other hand, being on campus and moving between classrooms makes learning healthier and more engaging.”*

*“My motivation for learning is better when I am learning face-to-face because since I can ask questions, receive immediate feedback, and have a social life.”*

### **RQ3. Does the field of education affect students' preferred learning type in the new normal?**

To answer the third research question, Chi-square test was used, where Table 8 presents the results

**Table 8.** Chi-square test to examine the relation between field of study and type of learning

Type of Learning Field of Study	Online	F2F	Blended	D.F	Chi-Sq.	Sig.
Medicine	290 (26.3)	549 (49.8)	263 (23.9)	22	105.904	0.0001*
Engineering and IT	237 (28.3)	420 (50.1)	181 (21.6)			
Economic and social sciences	97 (30.8)	164 (52.1)	54 (17.1)			
Humanities	44 (23.5)	110 (58.8)	33 (17.6)			
Law	26 (19.5)	90 (67.7)	17 (12.8)			
Agriculture and veterinary medicine	27 (34.6)	28 (35.9)	23 (29.5)			
Fine arts	33 (36.3)	29 (31.9)	29 (31.9)			
Islamic law	21 (36.8)	27 (47.4)	9 (15.8)			
Educational sciences	20 (27.8)	33 (45.8)	19 (26.4)			
Sciences	37 (38.1)	50 (51.5)	10 (10.3)			
Hisham Hijawi	17 (50.0)	8 (23.5)	9 (26.5)			
Graduate studies	48 (36.3)	35 (25.9)	51 (37.8)			



Table 8 revealed a statistically significant relationship at  $\alpha = 0.05$  between the field of study and type of learning. Students in the Fine Arts and Hisham Hijawi colleges prefer online learning over face-to-face instruction, while graduate studies students prefer blended learning.

***RQ4. Does the place of residence affect students' preferred learning type in the new normal?***

The Chi-square test was used, and Table 9 displays the results. It is observed that there is no statistically significant relationship at  $\alpha = 0.05$  between place of residence and type of learning.

**Table 9.** Chi-square test to examine the relation between place of residence and type of learning

Place of Residence \ Type of Learning	Online	F2F	Blended	D.F	Chi-Sq.	Sig.
City	454 (28.2)	782 (49.6)	351 (22.2)	4	0.975	0.914
Village	430 (29.0)	726 (49.0)	327 (22.0)			
Camp	23 (28.5)	35 (44.9)	20 (25.6)			

## 7 DISCUSSION

The findings of this study show that learners are in favor of face-to-face learning, as nearly half of the respondents preferred it. However, there is a good indication that the rest have a different view and have considered other types of learning, such as online learning and blended learning. This means that their experiences during the COVID-19 pandemic have changed their thoughts and beliefs [29]. However, they still need more evidence regarding the online and blended modes. Female students are in favor of face-to-face learning, which is understandable. Female students have the opportunity to socialize and meet others during their university days. They view the university as a place to interact with their peers and friends. Moreover, students feel more comfortable and secure when they are with their peers and professors [30], whereas online learning confines them to their homes.

The qualitative and quantitative data of this research support the above results, where students' opinions and views are still unclear and differ among the three types of learning: face-to-face, online, and blended. This indicates that learners are ready for a change in mindset as they belong to the digital generation, but the method for implementing this change is still unclear. The learners were able to express their thoughts verbally more effectively through the qualitative aspect of the research. They shaped a new perspective on the "new normal," focusing on blended learning for the summer semester, mandatory courses, and more theoretical university courses.

Learners in fine arts and vocational education prefer online learning, which is a surprising finding considering that these two sectors typically require practical learning. However, this preference could be attributed to the abundance of open resources available for simulations and VR solutions [31]. Learners could practice using online resources multiple times. Graduate students prefer blended learning. This preference could be explained by the fact that it supports adult learning and accommodates their busy schedules. Many graduate students work while studying,

so they can reap the benefits of both online and face-to-face learning. Many female students in graduate studies have expressed positive attitudes toward online learning because it allows them to access MA programs while managing all their family responsibilities, such as childcare, housekeeping, and other chores.

There was no significant difference among learners based on their place of residence. This could be explained by the fact that Palestine is a small country where all areas experience the same circumstances and share the same culture [26]. Therefore, this does not significantly impact their opinions and thoughts. Many learners are aware of the impact of new technologies on their learning but are still hesitant to consider them as a vital option for their education. They are aware of the social aspect of learning and its importance to their development and life skills, while also recognizing the benefits of online learning in terms of saving time, effort, and the cost of attending university.

Uncertainty characterizes higher education now. Therefore, learners, teachers, and policymakers must step out of their comfort zones and prepare for significant changes in their learning, teaching strategies, assessment, and evaluation tools. They need more time to reduce resistance and build confidence in the online learning approach. The restructuring of higher education will be more challenging now, requiring additional time and effort [32].

Technology is shaping the future of education and will play a vital role in higher education. Blended learning will become the new normal after the COVID-19 pandemic. Learners are aware of the rapid changes in learning styles, but they still hold onto their old practices with attention while approaching new ones with care and concern. The new normal is a hub for innovation, providing a space for creativity in higher education to achieve some of the sustainable development goals. For example, quality education, poverty reduction, and gender equity can be achieved through a combination of three types of education: face-to-face, blended, and online learning. These different types of courses will equip learners with soft skills, new knowledge, and a combination of communication skills, norms, and values.

## 8 CONCLUSION, LIMITATIONS AND FUTURE WORK

Learners have moved out of their comfort zone, but many are still unaware and distracted about the future learning methods that will suit them after the pandemic. There were various challenges and choices when addressing students' learning modes. Students were divided between social life and financial costs, but it is clear that students, after COVID-19, prefer to have more time to socialize and enjoy themselves. Maybe it is time to consider the socialization aspect of online and blended learning, especially after a challenging year of social distancing. Online learning environments would be more preferable if they simulated traditional learning environments to meet students' needs and stimulate them to have more social and intellectual engagement.

New changes will affect higher education institutions, and a new era is emerging. Higher education institutions should be prepared for future challenges and opportunities, and they should offer students a wider range of learning options. Technology is shaping the future, and the blended learning mode is highly recommended because it enables students to be engaged and active.

It should be noted that this study has several limitations. For instance, the sample is large, but it represents only one university in Palestine. Future research should involve collaborating with universities in different countries to compare differences

and similarities. This study surveyed the opinions of learners, and it is also important to consider the perspectives of faculty members, policymakers, and leaders in higher education.

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