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Learning in a Hybrid Classroom Environment: Students' Opinions and Preferences

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Research Article

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Abstract

Background/purpose. This study aims to determine the preferences and opinions of University of Sharjah students about hybrid learning, taking into account its increasing use globally, especially during and after the pandemic.

Materials/methods. Participants were invited to complete a voluntary web-based questionnaire (Google Form), which was distributed online during the second semester of the 2023–2024 academic year. The initial sample included 450 UOS students. However, only 400 completed the questionnaire, leading to a response rate of 89%. Descriptive analysis and multiple regressions were conducted on data collected from 400 undergraduate students from different majors at the University of Sharjah. Participants had to voluntarily answer an online self-survey questionnaire.

Results. The results revealed positive and negative opinions of students regarding hybrid learning, indicating that although students preferred face-to-face and hybrid learning, they had a stronger preference for face-to-face education, especially when it requires direct interaction, as well as during assessments. The results reflect a clear influence of specialization and year of study, as well as place and type of residence on students' preferences and opinions.

Conclusion. The results indicate the need to improve hybrid learning by addressing communication and direct interaction issues, activating the human element in the learning process, and improving the level of technology training for teachers and learners.

1. Introduction

The pandemic created challenges for higher education internationally, necessitating the implementation of digital technology in day-to-day teaching. Recognizing this need, the European Union (EU) implemented the Digital Education Action Plan (2021–2027) to develop digital competence through education (European Union [EU], 2020). Post-pandemic, there is a need to develop flexible and effective distance learning methods (Organization for Economic Cooperation and Development [OECD], 2022).

Hybrid education is one such method which combines both face-to-face and online teaching in a flexible learning environment (Bower et al., 2015; Raes et al., 2020; Zydney et al., 2019). Previous studies have referred to hybrid learning as "blended learning," that is, the combination of different methods (Saichaie, 2020).

However, blended learning does not involve the simultaneous combination of face-to-face and distance group teaching. In this study, hybrid teaching/ learning is defined as involving the simultaneous teaching of students both in the classroom and online. Students can choose the mode that best suits them to participate in the lesson. This type of learning is also called synchronous hybrid learning (He et al., 2020; Raes et al., 2020) and blended synchronous learning (Bower et al., 2015; Du et al., 2022; Lakhal et al., 2021; Q. Wang & Huang, 2018; Zydney et al., 2019).

Hybrid teaching aims to create flexible connections and interactions between face-to-face and online students by combining different teaching methods and technologies (Du et al., 2022; He et al., 2020; Q. Wang & Huang, 2018). As it includes both benefits and challenges, this field must be further explored and developed (Raes et al., 2020). Previous studies on hybrid education have mainly focused on teaching satisfaction among general university students (Bower et al., 2015; Lakhal et al., 2021; Raes et al., 2020; Q. Wang & Huang, 2018; Q. Wang et al., 2018), revealing that teaching satisfaction among higher education students learning through hybrid methods is influenced by educators' pedagogical competence and technological fluency (Lakhal et al., 2021; Q. Wang & Huang, 2018).

Students are satisfied with the flexible real-time interaction offered by hybrid learning spaces (Bower et al., 2015; Lakhal et al., 2020; Raes et al., 2020; Q. Wang et al., 2018) and learn better in hybrid learning than in distance learning because they can discuss lessons in real-time and participate in exercises and group activities, which helps them engage in deep learning (Du et al., 2022; He et al., 2020; Ma & Lee, 2021; Q. Wang & Huang, 2018). However, implementing hybrid education is challenging (Raes et al., 2020). Students perceive that solving technical problems requires educators to be attentive when implementing hybrid teaching (Q. Wang et al., 2018). It may be difficult for distance students to connect with those in the classroom in the same manner as in face-to-face teaching (Lakhal et al., 2021; Q. Wang et al., 2018).

Distance students experience lower levels of cohesion with other students, which may negatively impact their motivation to study (Butz & Stupnisky, 2016). Providing students with equitable attention is a challenge in hybrid learning (Lakhal et al., 2020; Q. Wang & Huang, 2018).

In addition to implementing hybrid education in higher education, flexible teaching solutions have also been implemented in health sciences (OECD, 2022). The few studies conducted in the health sector have shown that hybrid teaching can be as effective as traditionally delivered classroom education (He et al., 2020), and can improve students' professional competence and satisfaction (Du et al., 2022).

Factors such as student attitudes, learning styles, course difficulty, design, and content are important to students' online learning and success (Cimermanová, 2018; Debattista, 2018; Diseth, 2013; Khan et al., 2021; Zhang et al., 2021). Means and platforms for delivering instructions outside the classroom, blended learning, a combination of e-learning and conventional classroom learning,

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and provision for student to control their learning process have gained popularity as promising options. As illustrated in Figure 1, providing multimodal practice with feedback, addressing individuals' needs and goals in a crowded class, offering a variety of resources and real-life skill-building in computer use that includes motivational fun elements, allowing peer collaboration, and facilitating self-reflection and learner autonomy are some of the benefits of complementing traditional classroom teaching with e-learning (Karatay, 2016; Tang & Chaw, 2013).

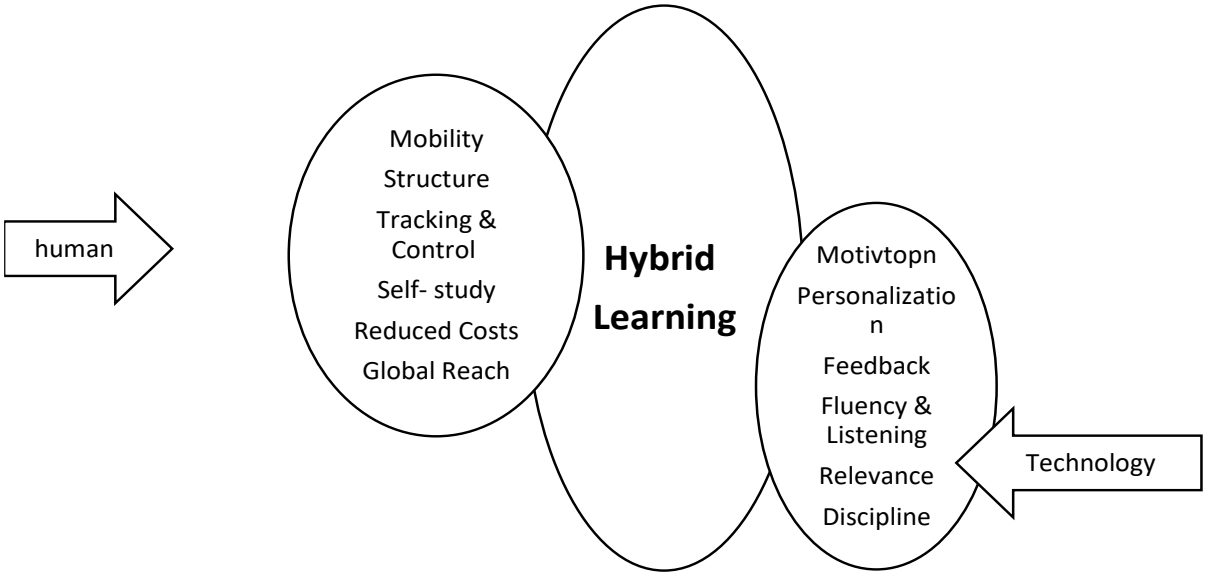

Figure 1. Elements of blended learning (Source: https://tinyurl.com/ydecxyzp)

2. Study Aims

As hybrid learning/ teaching is being increasingly used in education, globally, it should be studied and developed to meet students' competence needs. Therefore, this study aims to describe the hybrid learning experiences of University of Sharjah (UOS) students in different specializations. The following research questions are addressed in this study:

1. What are the positive and negative opinions of students studying in various specialization at the UOS towards hybrid education?

2. Do students prefer hybrid or face-to-face education at the UOS?

3. specialization, academic year, residential area, and residence type related to students' preferences and opinions for type of education?

3. Literature Review

Hybrid learning offers several advantages for both students and teachers. It facilitates the efficient use of resources, improves students' communication abilities, and positively impacts students' satisfaction and academic performance (Boyle et al., 2003; Dziuban et al., 2004; Garnham & Kaleta, 2002; Lim & Morris, 2009; López-Pérez et al., 2011; O'Toole & Absalom, 2003). According to Promsurin and Vitayapirak (2015), hybrid learning positively impacts both academic results and student satisfaction. Blankson and Kyei-Blankson (2008) reached a similar conclusion. Multiple empirical studies reveal that hybrid courses are most effective (Means et al., 2010), with several researchers believing that hybrid learning is the most widely utilized method in universities (Norberg et al., 2011).

Regarding students' preferences for different modes of education, recent studies indicate strong preferences towards in-person learning (Iqbal et al., 2022; Pongkendek et al., 2021; Zapata-Cuervo

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et al., 2023) followed by blended (Finlay et al., 2022), rather than online learning. Many students perceive blended learning as an alternative to online learning (Li, 2022). More specifically, a study across the United States, South Korea, and Colombia (Zapata-Cuervo et al., 2023) revealed that although students were highly engaged in online learning, they perceived it to be less effective and rigorous than face-to-face learning. Iqbal et al. (2022) found that post the pandemic, most Pakistani students did not favor online classes. Similarly, Greek students indicated their preference for face-to-face education, stating that it cannot be replaced by online education, especially, practical classes requiring laboratory work/training (Zagkos et al., 2022) In the United Kingdon, sports science students perceived blended learning as superior to online/virtual learning (Finlay et al., 2022). Students prefer blended learning as compared to online learning owing to academic support, as well as better organization and management, learning resources and community, and assessment and feedback.

4. Methodology

4.1. Sample

Convenience sampling was used to choose the sample, which is made up of second-year students and those who only learned online while attending college (post-pandemic, first-year university students experienced online). Descriptive analysis was performed on the sample. It was determined that the questionnaire's internal consistency was excellent ($\alpha = 0.79$). Being present throughout the pandemic and completing several years of research are two crucial requirements that the sample must fulfill.

4.2. Research instrument

A questionnaire based on student learning styles and perceptions of hybrid learning makes up the study tool (Fleming, 1995). General student information is included in the first section, followed by a 5-point Likert scale with the options "strongly disagree" and "strongly agree." During the second semester of the school year 2023–2024, participants were given access to an optional online survey (Google Form) to fill out. There were 450 UOS students in the original sample. Only 400 people, however, finished the survey, yielding an 89% response rate.

Participation is voluntary, as indicated by the two choices in the first section of the web-based questionnaire: "I agree to participate in the study" and "I do not want to participate in the study." Informed consent was gained from the remaining participants, while those who chose the latter option were eliminated. While conducting the survey, general data protection regulations and ethical considerations were considered. Every participant received information about the study's purpose and a guarantee that their answers would remain anonymous. The identities of the participants were hidden using codes to maintain confidentiality and anonymity.

4.3. Data analysis

Standard deviations and mean scores were reported using descriptive statistics. Participants' perceptions of the learning components of hybrid learning are based on the following ranges: Very low is defined as 1.00–1.50, low as 1.51–2.50, moderate as 2.51–3.50, high as 3.51–4.50, and very high as 4.51–5.00.

IBM's statistical package for the social sciences (SPSS) version 28 software, which has UOS approval, was used to examine the data. To ascertain the association between student characteristics, their perceptions of blended learning, and their preferences for it, multiple regressions were performed. This is since traits are crucial in identifying the broad patterns and beliefs of both male and female students.

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4.4. Temporal and spatial limits of the study

The study was conducted at the University of Sharjah, with specializations in Medicine, Humanities and social Studies, Sharia and law, and Media and communication. Data collection took place from May to July.

4.5. Axes stability

It was calculated using the internal consistency coefficient (Cronbach's alpha coefficient) and when calculating the stability coefficient in this way, the stability value was (0.76). These values were considered a positive indicator of the stability of individuals' responses to the questionnaire.

Table 1. Cronbach's alpha coefficient

N	Domain	Correlation coefficient
1	Positive opinions towards hybrid learning	0.75
2	Negative opinions towards hybrid learning	0.79
3	Comparison between types of education at the University of Sharjah	0.74

According to table 1, it can be said that the measurement tool has acceptable validity and stability indications when compared according to an absolute criterion that justifies its use for the purposes of this study.

5. Results

Table 2. The demographic characteristics of the sample

		N	%
Gender	Male	105	26.25
	Female	295	73.75
Year of Study	Second	138	34.5
	Third	112	28
	Fourth	65	16.25
	Fifth	48	12.5
	Postgraduate	14	3.5
Field of study	Medicine	123	30.75
	Humanities & Social Studies	179	44.75
	Sharia & Law	71	17.75
	Media & Communication	27	6.75
Residence Area	Abu Dhabi	87	21.75
	Dubai	102	25.5
	Sharjah	161	40.25
	Ajman	50	12.5
Type of Accommodation	Villa	177	44.25
	Conventional house	155	38.75
	Flat	68	17

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Table 2 shows that more than half of the participants are female (74%); the largest group consists of second-year (35%) students, followed by third-year (28%) students. The smallest group of participants are graduate students (4%). Most of the participants are from the humanities and social sciences (45%) specialization, followed by medicine (31%). Most of the participants are from Sharjah (40%) and Dubai (26%). Housing areas varied between villas (44%), conventional houses (39%), and apartments (17%). Table 2 presents the results of students' positive opinions toward hybrid education.

Table 3. Positive opinions toward hybrid education

Construct	Mean	Standard Deviation	t	sig
unlimited access to lecture materials	.83	3.43	-2.867	.004
In hybrid learning, I decide where I want to study.	.86	3.39	-2.609	.009
Hybrid learning allows for social interaction	.97	3.17	-3.509	.001
I believe the hybrid is a useful platform for learning.	1.13	2.78	15.869	.001
appreciate easy online access to my lecturer.	1.17	2.59	2.45	.003
In Hybrid learning, the lecturers share extensive information (e.g., resources' links) for online learning	0.99	3.07	3.153	.002
The structure of the environment in hybrid learning helps me focus on learning	.65	3.62	3.225	.001
The organization of each lesson in hybrid learning is easy to	.77	3.49	2.656	.008
Hybrid learning can improve communication with the lecturer, not only face-to-face.	.84	3.46	-3.216	.001
With the Hybrid learning method, I can finish my tasks anywhere and at any time	.79	3.32	15.338	.001
Total main	0.9			

5.1. Ease of access and shortened time

Statistically significant differences were found in the phrases that meant fast and unlimited access to lectures in hybrid learning in general, with values corresponding to unlimited access being -2.867 and sig= .004 and those of ease of accessing sessions being t= 2.45 and sig= .003. The value

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for shortened the time for learning and finishing tasks is t= 15.338 and sig= .001. There is no statistically significant relationship with access that is not limited to time and place (t= -2.609 sig= 009).

5.2. Quality of education

Statistically significant differences were observed regarding the quality and level of education in general, with the belief that hybrid learning is a very useful platform (t= 15.869 and sig = .001) that can help students learn large quantities of information owing to its flexibility (t= 3.153 and sig = .002) and enable them to focus on learning.

5.3. Social interaction

There were statistically significant differences concerning the strength of social interaction through hybrid learning and its implications: Students believe that hybrid learning allows social interaction (t= -3.509 and sig =.001) and increases their ability to communicate with lecturers in general (t= -3.216 and sig = .001). Table 3 presents the results of students' negative opinions towards hybrid education.

Table 4. Negative opinions towards hybrid education

Construct	Mean	Standard Deviation	t	sig
I can't develop my critical, analytical, creative, or practical sense of	.93	3.53	3.909	.001
I am unable to focus on hybrid education.	.92	3.48	4.044	.001
I do not attend regularly because there is no direct supervision as in face-to-face learning	.91	3.46	2.658	.008
The lessons in hybrid learning provide doesn't interesting and motivating learning environment	.90	3.18	2.497	.003
Hybrid learning creates a student-centered learning environment with no importance to the teacher Students can find the information themselves.	.95	2.96	2.989	.001
Inefficiency Learners and students on how to use e-learning systems.	.99	2.43	2.785	.005
I get an Unfair evaluation due to a lack of direct interaction with the professor.	.90	3.17	2.037	.002
Total main	5.7			

Statistically significant differences were observed in the quality of hybrid education, in terms of the inability to interact, create, and criticize due to the absence of direct classroom interaction (t= 3.909 and sig= .001), lack of focus (t=4.044 and sig=.001), absence of motivation and interest (t=2.497 and sig=.003), and the feeling of lack of importance of the educational process in contrast to self-

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learning, which is the source of learning for the students. (t=2.989 and sig=.001). A feeling of not being sufficiently competent in various aspects of hybrid learning was also revealed.

5.4. Social interaction

Statistically significant differences were found in hybrid learning's negative aspects from students' perspectives. Owing to the absence of direct interaction with the educational environment in general and professors in particular, students do not feel motivated by science and learning in the hybrid learning environment (t= 2.037 sig= .002). They also feel that they receive unfair grades because professors do not know their nature because of the absence of direct interaction and emotional dialogue in the classroom (t= 2.037 and sig = .002). Additionally, there is no statistically significant relationship between absenteeism from lectures and their nature, whether "hybrid or face-to-face" (t= 2.658 and sig = .008). Table 5 presents the UOS student's preferences between hybrid and face-to-face learning.

Table 5. Comparison of types of education at the University of Sharjah

	mean	sd	T-value	sig
Blended learning	2.66	1.13	-3.63	0.00
face-to-face learning	3.17	.91		
In-person education for practical courses and online for theoretical lessons	3.53	.93		

Table 5 indicates that students prefer face-to-face learning over hybrid learning, which is evident from the higher standard deviation and mean scores (3.17 and .91, respectively). The t-test results also indicate a statistically significant difference between the two groups (t = -3.58, at alpha < 0.05). Additionally, students prefer mixed learning to face-to-face and hybrid learning (3.53 and .93, respectively).

Table 6. Association between the student's specialization, academic year, residence area, and residence type and their opinion

Independent variable	Dependent Variable	B	T	Sig	R2
specialization	Students' opinions	.479	2.160	.003	0.352
academic year		.811	3.393	.001	
Residence Area		-.815	-6.106	.001	
Type of Accommodation		.863	3.541	.001	

A statistically significant relationship is observed between students' negative and positive opinions and between specialization, academic year, residential area and residence type, with a value of 0.03 for specialization and 0.01 for academic year, residential area and residence type. This indicates the importance of the nature and impact of specialization on students' approaches to learning. The extent of students' experiences and backgrounds in terms of their specialization and university influence their negative and positive opinions owing to the accumulation of impressions that vary according to their academic year, in addition to their residential area (Dubai, Sharjah, or Ajman). The extent of their residential area's proximity and distance from the university, the size of their residence (villa or apartment), and their ability to practice different types of learning according to the nature of their residential space impact their opinion.

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6. Discussion

This study analyzes the preferences and opinions of 400 male and female UOS students towards hybrid education, collated using an electronic questionnaire. The demographic characteristics reveal that most of the participants are female and in the second or third year of university (63%), indicating that their opinions and perceptions towards education and its nature have been formed after a year of university education. Additionally, most are from the theoretical specializations of humanities and social sciences and medical sciences, in which the first and second years focus on preparatory theoretical subjects. Most of the participants are from Sharjah or Dubai, that is, they are geographically close to the university, and live in large "villas," guaranteeing freedom in interaction through hybrid learning. A preference is seen for combining face-to-face and hybrid education, as imposed by the nature of theoretical specializations, especially in the first and second years of medicine, depending on the requirements of universities and colleges. However, it is also revealed that students prefer face-to-face learning compared with hybrid learning, especially when direct interaction and teacher assessment is required.

The results reveal a variety of benefits and disadvantages, several of which are consistent with those of earlier studies. The perceived pros of face-to-face education include immediacy with teachers, socialization and interactions, active student participation, and better communication and collaboration, while the perceived cons include more demanding timetables, minimal/no use of technology from teachers, and less free time. Parallelly, online classes are associated with benefits such as time and space flexibility and familiarity with digital technology. These perceived benefits have also been documented in recent studies (Iqbal et al., 2022; Khan et al., 2021; Paudel, 2021; Stewart & Lowenthal, 2021), as have the perceived disadvantages, which include technical problems and poor Internet connectivity (e.g., Iqbal et al., 2022; Khan et al., 2022; Paudel, 2021), as well as lack of laboratory/practical sessions as indicated by Finlay et al. (2022). With regard to hybrid education, the participants note benefiting from combining face-to-face and online learning, while approximately half believe that hybrid education is a practical solution for specific circumstances. This finding aligns with recent research on Singaporean (Lee et al., 2022) and Chinese (Li, 2022) students who perceive the benefits of hybrid learning approaches as a combination of the benefits/advantages of face-to-face and online education.

The pandemic and its aftermath have led to hybrid learning being adopted in universities. Understanding students' views on different learning modes may contribute to evaluating and developing educational policies at universities. (Hapke et al.. 2020) study indicates the importance of this type of education in refining students' personalities and creating a space of freedom in dealing with the educational process and its organization. Continuous learning is integral to education and requires organization and coordination to ensure success. This is consistent with the perceptions of students at the UOS, where one of the most important positive aspects is the ability to coordinate and organize lectures individually. The general character of the current generation, which prefers freedom and independence, confirms these results as in this type of teaching, there is a private and personal space for each student.

No educational process can satisfy the cognitive and perceptual levels of all students, some of whom are sensual, visual, or expressive learners. Many students prefer interacting through virtual platforms and hybrid learning, away from confrontation and interaction.

The characteristic of limitlessness in virtual classrooms makes it an advantage not available in direct education, which may cost time and effort, especially for students with widely spaced lectures, for whom hybrid learning represents an opportunity to shorten time and space, enabling them to receive the required knowledge effectively and comfortably, which is the same context in society, where the importance of condensing time and space is emphasized.

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In the current study, students revealed their preference for both face-to-face and hybrid education. Although their preference for face-to-face education is stronger (consistent with the results of the studies by Iqbal et al., 2022; Pongkendek et al., 2021; Zapata-Cuervo et al., 2023), they expressed a preference for hybrid education under certain circumstances, for example, in-person education for practical/laboratory courses and online education for theoretical courses. Students' preference towards the hybrid blended mode can be attributed to the affordances of combining the benefits of online and face-to-face classes. This study's results are in line with those of Zagkos et al. (2022), who revealed that Greek students prefer face-to-face education for practical classes that require laboratory work or training. The results are also consistent with those of Li (2022), who found that most Chinese students believe that classroom and online classes complement one another and are both important for future education. Similarly, Vital López et al. (2022) reported that although 52% of Mexican students believe that in-person classes are the best approach to learning, 25% believe in the effectiveness of hybrid education.

The results reflect a clear influence of academic specialization and year, as well as residential area and residence type on students' preferences and opinions regarding the educational process. The nature of the specialty, its type, the need for laboratories, attendance, interaction, and use of direct tools in disciplines such as engineering and fine arts determine the extent of students' tendency towards hybrid or face-to-face learning or their combination.

Residences in narrow spaces that do not allow students to study or have their own space determine students' inclinations and preferences for face-to-face or online education, and are directly linked to the place of residence. Spaces represent a decisive factor in students' desires and preferences. Some students come from areas two hours away from the university, which directly and positively affects their preferences for face-to-face or hybrid learning. Additionally, the academic year, students' experience on campus, regulations, and education mechanisms play an important role in students' preferences and perceptions.

7. Conclusion

This study aimed to describe the hybrid learning experiences of UOS students from different specializations. Previous studies indicate positive opinions towards hybrid education in terms of educational quality, ease of access, and unlimitedness. Although the results of this study provide clear evidence of the success of the UOS in providing an integrated environment for hybrid education, there are several negative aspects, such as lack of direct interaction, which affects social relationships with professors, and the evaluation of students' grades. In general, the students reflect a high level of preference for combining hybrid with face-to-face education, especially for general, non-specialized courses that are likely to lack direct interaction, unlike specialized and practical courses that require multiple tools, experience and skills among the students.

Students' preferences and opinions relate to the style of education followed by the university, the proximity and distance of their homes to the university, the size of their home, the possibility of an educational environment within this space, the nature of their specializations, and their need for multiple modes of education. The results of this study have implications for universities and can help them establish high-quality, flexible, and student-centered education.

In any case, the study sample consists of students from the University of Sharjah and the United Arab Emirates; This sample may not be representative in countries with different educational policies and legislation. There must be research around the world to investigate changes and preferences among students in the educational process.

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8. Suggestion

The following suggestions are made considering the outcomes of this study and the earlier discussion on integrating blended learning in English classrooms: To enhance students' four skills and overall performance, it is advised that stakeholders in higher education institutions embrace and apply blended learning methodologies for all courses. It is advised that interested parties support teachers in implementing blended learning techniques. It is advised that teachers support their students' participation in online activities and attendance at virtual classes. It is advised that educators develop activities that encourage interaction between students and between students and teachers, extending the boundaries of the classroom and broadening students' knowledge.

Declarations

Author Contributions. Conceptualization, F. Algharbawi & A. AL-Taii.; methodology, F. Algharbawi.; software. Algharbawi & A. AL-Taii.; validation, A. AL-Taii; formal analysis, F. Algharbawi; investigation, F. Algharbawi & A. AL-Taii; resources, A. AL-Taii; data curation F. Algharbawi & A. AL-Taii; writing—original draft preparation F. Algharbawi; writing—review and editing, F. Algharbawi & A. AL-Taii; visualization, F. Algharbawi & A. AL-Taii; supervision, A. AL-Taii;
All authors have read and agreed to the published version of the manuscript.
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Ethical Approval. At the end of the first part of the electronic questionnaire, participants were presented with two options: 'I agree to participate in the study' and 'I do not wish to participate in the study'. Participants who chose the latter option were excluded from the study. Thus, informed consent was obtained from all participants. The University of Sharjah Ethics Committee approved this study (grant number: 2025-2024\8). An information page that explained the study objectives and research procedures was provided along with the questionnaire.
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