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Perspectives of University Students and Faculty on remote education experiences during COVID-19- a qualitative study

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Abstract

Owing to COVID-19 the Ministry of Education in the United Arab Emirates mandated educational institutions to shift to remote learning. In this study the perspectives on remote learning, of both students and faculty, from the Science major, in a public university in Dubai have been explored. A qualitative research was conducted through focus group discussions using a semi-structured interview guide. All discussions were recorded and transcribed verbatim. Thematic content analysis was carried out following coding and analyzing content using NVivo 12. Recurrent, emerging and diverging views were identified and represented under themes. Participants believed that altered human interaction was a major consideration in remote learning. Assessments were modified to reduce cheating however increasing students' accountability and prudent use of questions was suggested as a more effective strategy. Challenges associated with technology, changes to the learning environment, wellbeing and institutional policies were highlighted. Advantages of remote learning included more inclusivity, flexibility, availability of recorded sessions and time efficiency. Also, remote learning had compelled faculty to enhance their technological skills. Including class participation as a graded component of courses, clear institutional guidelines on assessments, use of recordings and methods of communication were recommended. It was evident that students' stances for learning were based on courses and disciplines, with a preference for synchronous lessons. Culture influenced interaction, assessments, acceptability, and accessibility of remote education. The views from this research will contribute to improving the adoption and outcomes of digital education in higher education in the field of science, while considering the sociocultural influences of the region.

Keywords Remote learning · Online · Synchronous · Culture · Education · Technology · UAE

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1 Introduction

Online education has been around since the 1960s and has been gaining popularity over the years. Many had visualized online education to be the future of education, however the advent of COVID-19 had online education thrust upon the stakeholders much sooner and more abruptly than was anticipated (Dhawan, 2020). Worldwide 1.6 billion students across 190 countries were impacted by the disruption COVID-19 wreaked (Hussein et al., 2020). The United Arab Emirates (UAE) had been preparing for distance education through its smart learning initiatives since 2012, nevertheless the need to ensure online education for 1.2 million pupils overnight was a huge undertaking (Dajani, 2020). On 8th March 2020, the Ministry of Education mandated closure of educational institutions and the UAE switched to remote learning (Hussein et al., 2020). A process that would typically take several years or even decades was commenced within a few days. In 2019, Kopp et al., highlighted five aspects that had an impact on the success and uptake of digital transformation in higher education (Kopp et al., 2019). These aspects were listed as change, pace, technology, competences, and financing (Adedoyin & Soykan, 2020). Not only was the change abrupt, but it also happened very fast. Remote learning requires technology in the form of devices, internet, and facilitative software tools; availability of which could be impacted by socioeconomic status of the stakeholders. Even where technology has been acquired, the competence to use the technology does not always go hand in hand. The UAE was well prepared in terms of financing and provision of technology. In a study conducted in Dubai, 74.5% students agreed to having good internet connection and access to devices for online learning, only 9% disagreed (Almuraqab, 2020). The influence of alteration in pace, sudden change and digital competencies on students, instructors and institutions remain to be analyzed further.

Typically, history has shown that while educators adopt new tools, learning continues in the traditional form. The transition in education is not straightforward (Vrasidas, 2015). Literature has revealed that culture has a significant influence on learning, within or outside the classroom. Strong correlations between online learning and culture have also been discussed while considering Hofstede's cultural dimensions (Hofstede, 2011; Kinasevych, 2010). Of the six dimensions that Hofstede mentioned, several resonate with the culture predominantly seen in UAE. Power distance, where hierarchy exists thus a more teacher-centered education, is typically seen in Nonwestern societies. Where students accept teachers to be more powerful or deem them to be in an exalted position culturally and academically, education tends to become more teacher-centered rather than didactic. Similarly, individualism is more frequently seen in Western countries, where everyone is responsible for oneself. In Eastern cultures, collectivism is more commonly seen, here people belong to extended families and clans, norms are upheld, and relationships are prioritized (Hofstede, 2011; Sathakathulla et al., 2019). The predicament that arises is that most of the software developed for online or remote learning has been done in western countries, considering their own cultural perceptions. It would be prudent to expect that such resources

may not transition seamlessly into other diverse cultures. Given the abruptness with which remote learning substituted traditional in-class learning, nuances such as cultural aptness of the technology and learning environments may have been overlooked (Kinasevych, 2010).

As Pittaway, 2012 explained, learning happens in an environment or context, which is influenced by the faculty responsible for facilitating learning. This holds true regardless of whether online platforms are used, or if on-campus classes are conducted. Student engagement is fundamental to an environment that is conducive to learning. The four principles of the engagement framework are built around five elements of the engagement framework: personal engagement, academic engagement, professional engagement, social engagement and intellectual engagement of staff and students (Pittaway, 2012). These key principles of engagement need to be embedded within teaching and learning styles. The transition to remote and online learning requires educators to reconsider how they teach. Traditional classroom teaching, which is often based on closed systems, is not adequate for digital learning (Reese, 2015). Digital learning should provide students an opportunity to not only participate but also create knowledge, with web resources. Teachers need to change their roles and teaching styles to embrace the change while students too need to adopt new learning styles. Constructivism and connectivism are the approaches that are deemed to be more aligned to learning with technology (Partlow & Gibbs, 2003; Reese, 2015). The social constructivist theory acknowledges the influence of culture on learning. Students are expected to actively construct knowledge based on their socio-cultural influences, prior knowledge, and facilitation through instructors. Whereas connectivism builds networks and connections of ideas between students, instructors, and others (Kinasevych, 2010; Reese, 2015; Zhu et al., 2010). To adopt the social constructivist approach, the teacher needs to adapt to the role of a facilitator or delegator, which requires a shift from previously being the expert or formal authority responsible for transmitting knowledge. Similarly, students also need to take active control of their own learning.

The widespread embracement of online teaching, in a short span of time has opened a greater need for sharing relevant research articles, case studies, success stories and perspectives around the world. Literature on online and remote education is sparse in the UAE, particularly relating to the transition to remote online learning during the pandemic. A study was conducted by Salloum et al, 2018, in a University in Dubai to explore the significance of culture on online learning; however, this quantitative study was carried out in the pre-pandemic times and was not specific to a particular discipline. The study was limited to the students' views and focused entirely on the cultural effects; it highlighted those cultural backgrounds that had an influence on the success of the online learning experience (Salloum et al., 2018). Shuhaiber, 2018, used a quantitative approach in a University in Al Ain, in UAE, College of Business to understand the willingness of students to switch to online learning. Although this study recognized the importance of cultural influences, it reflected mainly on students' willingness to adapt rather than their experiences and perceptions following the adoption of online learning. Faculty views were not considered (Shuhaiber, 2018). Another study carried out by Abou Naaj et al., 2012 in Ajman, UAE evaluated student satisfaction with blended learning. This study

focused on blended learning rather than entirely remote learning. It represented quantitative findings from the College of Information Technology and highlighted comparisons among genders (Abou Naaj et al., 2012). A study conducted at a university in Sharjah UAE explored the importance and efficacy of interaction in an e-Learning environment using data from grades attained, course work and a survey; however not all the participants involved were actually using an e-Learning environment. This study provided important insight into the influence of technology use on student interaction and achievement. What students expected from their instructors was mentioned however faculty views were not explored. This study recommended further exploration through qualitative research methods (Abulibdeh & Hassan, 2011).

A strategic report on the impact of COVID-19 on education was published in 2020 by Erfuth and Ridge of the Al Qassmi Foundation (Erfurth & Ridge, 2020). This report provided valuable information on the overall challenges and made suggestions based on experiences during the COVID-19 education transition, however, the scope of the report extended only to private and public schools in UAE, not higher education. This report studied the views of students, parents, educators, administrators as well as education experts (Erfurth & Ridge, 2020). Hussein et al, 2020 explored undergraduate attitudes towards online learning at a university in Abu Dhabi during the pandemic. This study was limited to students from the English major and data was collected through semi-guided essays rather than in-depth interviews or focus groups. Once again faculty perceptions and the science discipline were not considered (Hussein et al., 2020). Another study conducted in a Business College in Dubai, reflects on the quantitative areas of some of the aspects discussed in this study. Nevertheless, the study did not explore in-depth perspectives of both students and faculty, particularly in the discipline of science (Almuraqab, 2020).

In this study, we have considered online teaching in its remote format during the COVID-19 pandemic. Through qualitative research methods, we have explored in detail, the perspectives on remote learning, of both students and faculty, from the Science major, in a public university of Dubai. To our knowledge no other qualitative research has been conducted in this area in the UAE, that is discipline-specific and considers in-depth views of both students and faculty in higher education. The views obtained from the research will contribute to improving the adoption and outcomes of digital education in higher education in the field of science, while considering the sociocultural influences of the region.

2 Methodology

For an in-depth exploration of the perspectives on remote education of university students and faculty from the science major in Dubai, we chose a qualitative research approach. Online focus group discussions were conducted via Zoom cloud meetings software, using semi-structured interview guides. Qualitative research methods were employed because they allow researchers to actively engage with the participants

and get a clearer understanding of not only what but also why they see things the way they do (Julien & Dookwah, 2020).

2.1 Recruitment and study participants

Convenience and snowball sampling methods were used to recruit participants for this study. A participant information leaflet was created that was circulated to students and faculty by the researchers and research assistants. Various forms of digital communication, such as WhatsApp, text messages and emails were used to reach out to potential participants to record expression of interest. Participants were encouraged to recruit more people through their own social networks. The inclusion criteria required that students were undergraduate students studying in Dubai, from the Science major, female and above 18 years. Since the study was initiated at a university with only female students, convenience sampling was expected to result in predominantly female students. To maintain homogeneity, any potential male participants were excluded. Participating faculty were expected to belong to the Science major. Interested participants were then asked to select time and date slots that suited them best and focus group sessions were arranged accordingly. The aim was to create homogeneous groups so that shared experiences could be better articulated and understood. Such similar groups are particularly useful when exploring dominating cultural values (Kitzinger, 1995). For the same reason faculty and students were placed in separate focus groups.

2.2 Research instrument

A semi-structured interview guide was prepared and used after being piloted by the researchers. The guide had several open-ended questions such as, 'How do you feel about online learning?', 'What is your opinion on the use of cameras in remote education?' followed by probes based on the discussion that ensued. A benefit of qualitative research is that data analysis starts while data is being collected, thus there was an opportunity to refine questions, explore deeper and follow up any emerging views while the sessions were active (Pope et al., 2000). Both students and faculty were interviewed using the same semi-structured interview guide, however cues that arose from the discussions that ensued may have varied.

2.3 Data collection and analysis

A total of eight focus group sessions were conducted (Table 1), of which two were faculty focus groups and the remaining comprised of student participants. All focus groups were conducted from October- December 2020. The benefit of conducting focus groups over individual interviews is that social and cultural interactions and nuances become evident, which was integral to the nature of this study. Focus groups encourage participation from those who may be overwhelmed by a one-to-one interview. Focus groups tend to generate more critical comments than interviews due to the reinforcement received by other group participants, especially if

Table 1 Focus groups

Session	Participants	Number of participants	Duration
Focus group 1	Students	6	1 h 10 min
Focus group 2	Students	9	1 h 13 min
Focus group 3	Students	5	1 h 4 min
Focus group 4	Students	5	1 h 20 min
Focus group 5	Students	9	1 h 8 min
Focus group 6	Students	11	1 h 1 min
Focus group 7	Faculty	4	1 h 2 min
Focus group 8	Faculty	4	1 h 11 min

friends and colleagues are within a naturally occurring group. Where the aim is to improve experiences based on stakeholder's perceptions, focus group data collection is a valuable method of exploration (Khalil et al., 2020; Kitzinger, 1995). An attempt was made to keep focus groups small to allow ease of communication through electronic means, however participants who appeared unexpectedly were not discouraged from joining. All focus group discussions were recorded using the Zoom video and audio recording features. The automated transcription was utilized as a starting point and followed by careful rechecking and modification. Verbatim transcription was completed by two research assistants. Thematic content analysis was carried out by coding and analyzing content using NVivo version 12. Transcripts were carefully read, and inductive, open codes were assigned. Following refining of codes and categories, creation of themes and sub-themes was finalized by three researchers and research assistants to ensure intercoder reliability and consistency (Julien & Dookwah, 2020). Recurrent, emerging and diverging views were identified and represented under themes and direct quotes from the focus group sessions were used to support the themes. The findings were further discussed in the light of collectivist and social constructivist elements of the society.

2.4 Ethical considerations

A full application for ethical clearance was submitted and approved by the Zayed University Research Ethics Committee (ZU20_122_F). All focus groups were preceded by an explanation of what the study was about, the participant information sheet was reviewed, and the informed consent document was shared on screen, so it was visible to every participant. Verbal consent from each participant was recorded following sharing of the informed consent. The informed consent that was agreed upon included permission to publish the findings that arose from the study. All sessions were recorded through Zoom, participants were made aware and consented for the session to be recorded. Participants were at liberty to choose whether they would like to keep their own cameras on. Confidentiality and anonymity were assured, recordings were viewed only by the researchers and research assistants that were involved in transcription. All data was kept secure, only primary researchers had access to the data collected. Following transcription all recordings were destroyed.

Names and identifying features were removed from transcripts to ensure that any information could not be traced back to participants.

3 Results

The data obtained following analysis of the focus group discussions were categorized in to four themes. Direct quotes from focus groups support the emerging themes and subthemes. Where quotes are taken from faculty focus group discussions the abbreviation (FFG) is used and where quotes are from student focus groups discussions the abbreviation (SFG) is used. Key findings of the study have been summarized in Table 2.

The strongly recurring theme throughout the interviews revolved around the changes remote learning has brought about in human interaction.

1. Altered human interaction

Despite having synchronous teaching sessions, faculty felt a disconnect from the students while taking lessons remotely. Not being able to see students and their expressions made it difficult for faculty to gauge their understanding. It was also challenging to remember students and build relationships with them.

> I'm not able to gauge their understanding,…. when I see them physically from the expressions on their faces I can make out if they've understood or if they're paying attention – [FFG]
> so it's just like this black box of of people I don't know –[FFG]

Many students choose not to actively engage in the lessons. In the absence of visual cues and responses faculty often had to slow down the pace of the lesson. They needed to keep checking in with students which ultimately meant loss of teaching time.

> … there are students that I haven't had even one comment from.. so… definitely it's slower because… they don't feel that they have to interact with us- –[FFG]
> we are not able to figure out if they've understood…., we keep asking them have you understood and then we try to explain the same concept using different tools and different activities so ultimately then it takes a lot of time –[FFG]

Lack of student interaction also noticeably dulled the instructors' enthusiasm and pace.

> whenever they see the student they doesn't care… even the instructor khalas (that's it) –[SFG]

While many students refrained from interacting in remote sessions, some students, including students of determination, who were previously hesitant to speak up in class found using the chat boxes less daunting.

Table 2 Summary of key findings

Themes	Subthemes	Summary
Altered Human Interaction	Consequences	Faculty felt disconnected from the students while taking lessons remotely. Lack of engagement slowed down the pace of the lesson
	Use of technology and tools for interacting	Cameras were useful for increasing engagement, yet students were self-conscious about keeping their cameras on, they worried about invasion of privacy and recordings WhatsApp groups were popular with students since they made faculty more easily accessible
	Remote learning- Synchronous and asynchronous learning	Students preferred synchronous remote lessons but felt strongly about having access to the recordings as well Science and mathematics-related courses were not considered suitable for remote learning
Assessments	Assessments modified	Instructors had placed extra measures to mitigate cheating
	Cheating and camera	Students felt these extra measures placed them under increased stress and did not prevent cheating Ensuring answers cannot be found in quick Google searches was considered the best way to prevent cheating
	Responsibilities and expectations	Students needed to actively engage with and be held responsible for their learning to achieve their targets
Challenges with remote learning	Challenges associated with technology	Students and faculty were new to such extensive use of technology and found it stressful to adapt
	Challenges due to the learning environment	The transition from home being a place to relax, to being a work/study place was complicated
	Challenges to wellbeing	Remote learning has been detrimental to general health and wellbeing
	Institutional challenges	There is a lack of institutional guidelines on acceptable means of communication and policies for how recordings are stored and used

Table 2 (continued)

Themes	Subthemes	Summary
Pros of remote learning and suggestions	Benefits	Remote learning offered safety, flexibility, and convenience in education Most faculty had engaged in a high level of professional development to be able to overcome the new challenges and better their technological skills
	Suggestions	Students need to be encouraged and incentivized to participate in class Instructors need more support, material and procedural guidelines to be able to work better

one of them … she has become suddenly active on the chatting she's asking questions… it was like 180 degree change –[FFG]

On the contrary there were some students who dominated the class discussion, these students were often comfortable using the microphone. In such cases, other students were unable to get their word in if they chose to, or relieved of the need to have to interact at all.

I will have students who I would call them the hijackers… that would completely hijack the session… because they have their audio on all the time….–[FFG]
… it definitely affects the participation for the others cause they will think oh as long as she keeps the instructor entertained and busy and she (the instructor) would not notice that none of us is actually paying attention –[FFG]

Most students acknowledge an increased responsibility on them to stay on track with lessons, however without the traditional instructor-student interaction, it was easier for them to slacken.

It put more responsibility on us to focus because no one see me… if I'm playing with my telephone… not listening… no one can see me –[SFG]

Use of technology and tools for interacting

The need for effective interaction between faculty and students has opened doors to the use of different types of technology and tools. The use of cameras for remote synchronous sessions was lauded as a powerful aide to improving interaction. Most instructors kept their cameras on with the intent to make it easier for the students to connect with them, see their expressions and hand gestures.

I keep the camera on to try to at least get them to see who I am and maybe… see my expression and and and how I talk –[FFG]

In general, students also agreed that they preferred that the instructor kept their camera on while teaching.

it's very important to have the instructor opening the camera…. in one classes we have a class that miss don't open the camera… I don't know I… I feel like I cannot get what the miss is saying… or what she's explaining –[SFG]
with the instructor yes because I want to read her face… if she's mad… satisfied… or even whenever she's explaining I can..yaani (I mean) sometimes I remember the expression –[SFG]

Faculty expressed that it was equally important for the faculty to be able to see the students and for the students be able to see each, other to recreate a classroom environment.

It creates a full classroom, and they can see each other it's… for me yes, it's important to see them but also for them to see each other –[FFG]

However, when it came to students turning on their cameras, they were hesitant to comply. Many felt self-conscious while turning on the cameras.

> every one of us is just afraid to open the mic or to open the camera because it is like we just we woke up we don't look good we don't wanna be filmed like this..so it is really awkward –[SFG]

Others felt it violated their privacy since they were attending lessons from their homes. Not everyone had private space to take their lessons.

> people will feel it is invading privacy as well like in our own home –[SFG]
> but I think it's difficult for all of us to switch on the camera because … like some of us don't have their own rooms or … some have their children with them… so it's difficult for them to turn on the camera –[SFG]

There were cultural inhibitions and fears that such sessions would be recorded and circulated.

> some people just don't want to be filmed in front of the whole class like they don't feel comfortable with it. Especially with the class is being recorded and being uploaded on blackboard and everyone seeing it –[SFG]

Despite their reservations with keeping the cameras on, most students agreed that seeing their peers would improve the learning experience.

> I think if we all open the camera and try to communicate with each other through the class it is gonna be even more better and we will understand each other better –[SFG]

Having cameras on during exams was only tolerable to the students since it was mandatory for all. They felt reassured in believing only the instructor would have access to the recordings.

> In the exams I agree yes we should open the camera so they can see and all that but at least when we are doing it for exam we know no one will see it except like the professor or the university itself –[SFG]

The use of breakout rooms was considered a good alternative to in-person group work as it allowed students to get to know each other better and create working groups.

> It's like we are a group sitting next to each other.. this is how it feels like –[SFG]

On the other hand, some students felt breakout rooms did not give them sufficient time to achieve much. Faculty had reservations about using breakout rooms since they felt often students would simply disappear from the breakout rooms.

> I've tried having breakout rooms… and then I always have five or six that never go to the breakout room because I think ….they just kind of probably went to have coffee or breakfast –[FFG]

The use of WhatsApp groups for classes came up and several opinions were unearthed. Many faculty and students felt creating class WhatsApp groups helped

with creating a community feeling and gave the opportunity for peers and faculty to support members of the class and possibly get to know each other too.

> One of the purposes of creating WhatsApp groups was to create a kind of community as well because we were not in a physical classroom…–[FFG]

Students were keen on maintaining WhatsApp groups since it gave them easy access to the faculty, with a faster response time. Where they would be hesitant to send multiple emails to the instructor, they felt more comfortable communicating via WhatsApp.

> Yes it helps a lot, we can ask students or the professor and they can reply fast [SFG]
> because emailing professors it is not the same as contacting from WhatsApp like for example I won't just email a professor to double-check my work [SFG]

The downside to WhatsApp groups for students was that sometimes important information would be relayed on WhatsApp rather than through official channels and potentially be missed.

> there is a con to it as well…… some professors just use the WhatsApp group for everything and it becomes hard to keep track of uhh their announcements and their assignments the… like you can't just give the assignment details on the WhatsApp group… because it gets lost within the chat and then you have to go look for it [SFG]

Similarly, several faculty felt that conversation on WhatsApp was undocumented thus unofficial. Such conversation could be misconstrued and was also not acknowledged as part of the workload.

> … I send so many messages on WhatsApp and… and suddenly I think, and I say to myself if I want to prove something… I cannot prove it because all is done through WhatsApp [FFG]

Despite the convenience of WhatsApp messaging faculty also felt that having to share their personal phone numbers blurred lines of social etiquettes; students would continue to send messages at all times of the day and night.

> I find WhatsApp groups are convenient… but they can be a headache too when students message you at midnight… … that they can call and they can message whenever they want to and they expect a response too… so you know that that is pretty inconvenient [FFG]

Remote learning- Synchronous versus asynchronous learning

While students were not against remote learning, they felt that remote learning worked well for some disciplines and not as well with others. Most students highlighted courses with calculations as the ones that did not work well for remote learning. Laboratory-based courses and sciences were preferred as on-campus courses.

> To be honest, it was a very hard experience, especially since our major which is Environmental Science, it has a lot of scientific courses, a lot of mathematical courses –[SFG]

Faculty on the other hand felt it was not just about the discipline but also the level of education. Remote learning requires a level of maturity and responsibility from the students.

> … but this for a bachelor student… this is not the right way… I think that this could be perfect for a graduate or a PhD student because they are responsible they really care about their degree they are not just here to have a degree at the university… they are willing to increase their knowledge… while our student are here just to get a degree –[FFG]

The validity of faculty concern resonated in students' voice as well, they needed to be monitored and supervised.

> with online classes we are being careless, and no is checking up on us like how we solve and are we understanding or not –[SFG]

There was a general preference for synchronous lessons. Some students realized that remote learning needed more self-discipline, having synchronous lessons kept them on a schedule.

> I feel it's better for the student to have specific time to attend the lecture…. because if they have unlimited time I feel.. they will keep on postponing and then.. they should have a schedule.. –[SFG]

Some other benefits of synchronous classes revolved around the accessibility to interact with the faculty in real-time.

> What if you have a question? How are you gonna ask?.. it makes it complex.. the live it's easy.. you can unmute and you can ask –[SFG]

Asynchronous classes were compared to watching You tube videos. Being in an asynchronous session did not feel like a true learning experience for most students.

> At least we will feel like we're studying… instead of like watching a video –[SFG]

The general preference for synchronous sessions was evident, nevertheless students felt strongly about being provided recordings of those live sessions. Most felt the recordings helped them if they had missed out on something during the class, served as a backup for poor internet connection, many referred to recordings to decipher areas of difficulty and some found recordings helpful for revising before assessments.

> in class I don't have enough time for my notes… like I rush so much… and then I tend to skip some things but… uhh in… but when I watch the recording, I have more time to take notes and then repeat some ideas –[SFG]

Students acknowledged that the recordings were of added value but not a replacement for the live sessions. However, it was accepted that the availability of recordings made it easier for students to miss classes.

> Some people actually when they see like there is a recording in the class they actually go and cook them breakfast… during the class time… so I feel like uhh they don't really take it seriously which is really bad thing –[SFG]

Faculty had similar concerns about recording sessions and felt it decreased student engagement, attendance, and interaction in class.

> for some classes that was just not a good idea purely because the students were relying on the recording…… there is no consequences for not attending –[FFG]

2. Assessments

With the shift to remote teaching and learning it was inevitable that the way assessments were conducted would also be altered. Faculty opined that high stake assessments should be conducted in person to maintain rigor and integrity.

> … I feel like it's part of the glory of assessments were taken away –[FFG]

When exams were held in person, faculty could provide support to students in terms of clarifying vocabulary, or a question when needed This ensured that they did not lose out due to poor language comprehension and also allayed unnecessary anxiety.

> during live exams sometimes if they are stuck somewhere or they have a problem with a word… they can usually ask… maybe you can help them –[FFG]

To accommodate for remote assessments faculty suggested transitioning from multiple choice and other objective questions to more short answer questions that required critical thinking or an explanation rather than selecting correct options. However not all students agreed with such a change.

> students generally do not want short questions… they want to stick to the multiple-choice and the ones that are quick to do –[FFG]
> because I don't like writing… sometimes I can remember the answer … when I have it uhh on the on the choices –[SFG]

With English being a second language, some students found it easier to select correct options rather than having to explain a concept. Short answers were also more time consuming which posed challenges during limited time assessments.

There seemed to be mixed views on whether cheating had increased due to remote assessments, however most faculty had incorporated extra measures to mitigate cheating. Along with adapting question styles, other measures included limiting time, prohibiting backtracking, the use of cheating monitoring tools and remote monitoring cameras.

> I prohibited backtracking … … if I'm using multiple-choice… then I would randomize the answers as well… and randomized the questions… I would calculate that each question would need one minute one minute and a half so students didn't have enough time to go through the material if they would like to cheat and then answer –[FFG]

Faculty recognized that students who truly wanted to cheat would not be dissuaded by the measures put in place. Many attributed cheating to poor work ethics among students.

> they are relying more on cheating than on studying even if we put all the techniques… because there's no …I'm sorry to say that there's no ethics –[FFG]

Faculty also highlighted a cultural connotation to cheating, where they felt that students did not consider cheating in the same light as faculty do.

> when we say cheating to them it's not cheating… to them it's like helping their friends… so there's … there's no violation of any ethical concern –[FFG]

Students argued with most of the measures taken to mitigate cheating. They believed that students who set out to cheat would manage to cheat regardless of the measures implemented.

> I will tell you something honestly, if a student wants to cheat they will cheat –[SFG]

Students felt the methods implemented to prevent cheating put them at a disadvantage; they were particularly vocal about not being able to backtrack questions once solved.

> Ok, reduce the time but backtracking is really awful because sometimes you just stuck and you can't like solve another questions and go back to it later. You just stuck –[SFG]

Faculty believed prohibition of backtracking to be effective in preventing cheating and more stoic in terms of assessing what students had learnt.

> they don't like backtracking either because sometimes a previous question gives you the answer to a subsequent question… or they got a friend to give them the answer to a question that out that's out of sequence then they have to go back and forth to fill in the questions –[FFG]

Another dominant theme was the students' distaste for using cameras for remote proctoring during exams. Students believed the camera proctoring added to the stress of exams. Some felt it violated their privacy, some felt uncomfortable being watched and others were concerned for the privacy of their homes and people at home who may be heard or seen through the camera.

> I feel like a criminal –[SFG]

Students claimed cheating could continue even with the camera on, where students could vocalize the questions for others to respond to, or hide earphones under their head scarfs, or with the use of multiple devices at hand.

> So It is not gonna make any difference and especially we wearing our hijab (head covering) and then other people wear headphones or AirPods so no one is gonna know if we are cheating or not. –[SFG]

Students highlighted that the easiest way to cheat was through googles searches and if instructors ensured that answers were not readily available from web searches, cheating could be prevented.

> … those like who cheat… all of them … they actually don't study so they don't know what's in the slides… so they use google… so I think the… the most important thing is to make sure that the questions are not in google –[SFG]

Generally, neither the students nor faculty showed any consensus on how remote learning had impacted the grades attained. Some felt the grades were better, some felt the extra measures placed to reduce cheating had negatively impacted their grades, some had not seen any real difference.

However, the faculty believed that the onus was on students rather than the added rigor of assessment. Students who were committed to remote learning, attended classes regularly seemed to do well whereas students who were consistently away from class underperformed.

> who are not punctual who don't participate in class.. you look at their grades… they don't do well… so it's a question of student motivation, if they're motivated to do well… they will –[FFG]

Instructors felt that students needed to be held responsible for their learning. Empathizing excessively for the sudden shift to remote learning, lowering academic standards and expectations had made students more complacent in learning, which would more likely be the reason for those who are not doing as well as previously expected.

> … we've already disadvantaged them by… allowing them to choose a pass/fail… so you know if you get 60 it's not gonna impact your GPA…… a higher expectation than what we have now in terms of… the students' efforts that needs to be put in in terms of learning and seeking knowledge… if we're not going to do that… why would they … put more effort in making it better –[FFG]

3. Challenges with remote learning

Challenges associated with technology

COVID-19 mandated a sudden shift to remote learning. Both faculty and students were caught unaware and ill-prepared, and these posed challenges associated with technological competence and preparedness.

> we had all been thrusted to… learn all of these different platforms and… master them and deliver and so we are learning in in the process of delivering and and some of us… are better at adapting to technology than others and… so we're all at a different levels… and I think our students are probably the same… [FFG]

While students were inherently more agile when it comes to technology, not all instructors were as adept at embracing the new mode of teaching and learning.

> … because some professors are not really used to technology so… they struggle to try to find a way to explain… like for mathematics [SFG]

The complete dependence on technology made technological failures and inadequacies a source of stress for students and faculty.

> what if the lockdown freezes? What if the zoom? What if, what if? [SFG]

Many participants upgraded their Wi-Fi connections and adapted to the requirements, yet the fear of disruptions and glitches in technology were mentioned by most participants.

> the wifi connection was a big challenge in my house as we all transitioned to online work.. online studying... the wifi was like lagging and freezing we literally had to buy extensions and make the wifi even stronger [SFG]

Most participants recognized that technology per se was not entirely to blame, everyone struggled with the newness of things. Being thrown into new platforms, new modes of teaching, a new learning environment amidst uncertainties had posed a challenge in itself.

> because professors aren't used to teaching on online courses and students aren't used to just take online classes, so it's even new to both of them, so both of them are just learning while going through it as well [SFG]

Students admitted that preferences aside, they got more accustomed and comfortable with remote learning as time passed.

> I was worried if I would be able to get used to it… which I feel I have gotten kind of used to it by now [SFG]

Challenges due to the learning environment

Participants had opted for and were used to traditional on-campus teaching and learning. The university campus was a place of education, they were conditioned to learn in that environment. Once students were studying from home, it was difficult for them to overcome the seamlessness of home and university.

> In the university we get used, it is the place for working and learning and now we shift to home which is a place of relaxing, so I think this transition is difficult [SFG]

Students found it difficult to concentrate while studying remotely and felt they had to deal with more distractions.

it's difficult to concentrate at home compared to concentrating in classes there are too many distractions around [SFG]

For some students, distractions were more tangible than others. Living in large households or small houses raised concerns of high noise levels, lack of privacy, inadequate internet bandwidth as well as responsibilities to contribute to household activities.

there's multiple people who are… brothers and sisters and mom and whoever else in the house that has to be online… and it makes their connections some days worse than others [SFG]
Sometimes they don't really take it like seriously like I'm in the middle of the class and they ask me to bring something and I feel like I'll miss a really important thing at the lecture but when it's mom or like dad I can't say anything I have to do it… [SFG]

Challenges to well being
COVID-19 and the shift to remote learning had a toll on the general well-being of students and faculty. Both students and faculty felt that since they started working remotely, work and home time seems to merge into one another, and workload had increased. Previously work would be at campus and home would be a place to relax

For me to be honest I feel like I'm studying all the day… [SFG]

Faculty seemed to be more affected by the higher workload. As expressed earlier, teaching itself took longer but preparing for lessons, and responding to emails made it feel as if faculty needed to be accessible and working round the clock.

I feel like it… it significantly increases the number of hours that you are working so instead of now working for eight hours you are almost working for… 18 h a day cause… you're responding to messages [FFG]
I'm getting like 200 e-mails a day now -[FFG]

The move to remote learning as well as social distancing mandated by COVID-19 has resulted in a more sedentary lifestyle.

Because when we go to campus, we move our body and walk around a little like here online we always like laying down always tired always feeling a sleepy like that but on campus I feel like I have a life [SFG]

Increased screen time and being seated during lessons was labeled strenuous to eyes and posture

.. it affected like my health in everything I mean my back my head it is now it is my head really hurts really really almost everyday everyday –[SFG]

Most importantly, remote learning affected students' emotional and social well-being. The university was not just a place of study for students, but also a place that shaped their personality through the range of experiences and opportunities it offered

> What is good about university and being on campus it teaches you how to be interactive, it breaks the boundaries of being shy, for example before going to the university I was shy presenting but right now I love presentations, I don't feel shy anymore to present in front of everyone [SFG]
> I feel like I'm losing half of my personality… with online… because … whenever I go to the university I think university shapes my personality [SFG]

For some students the university was a place that allowed them to be themselves and get away from the responsibilities of home.

> I go to campus I have more my my time alone… so I miss my time alone I can't… like at home I can't have this time… and like I can sit for long hours like without anyone interrupting me… but at home I don't get to feel this [SFG]

For others being on campus gave them an opportunity to make friends, socialize and relax.

> on campus we meet our friend we talk to them ..seeing our friends just hypes us in the morning it just gives us more energy …and now we are just waking up and all depressed and gloomy …it is black and I am just sitting on the laptop so I look like zombie [SFG]

Institutional challenges

Many instructors pointed out the need for clarity in rules and regulations set by the academic institutions. The shift to remote learning for students who were previously used to communicating frequently with their instructors translated into a large volume of digital communication. Some faculty created WhatsApp groups for classes to ease communication, however that meant sharing personal phone numbers with students. This resulted in students taking the liberty of contacting their instructor's day and night.

Not only was this cumbersome, but also meant that conversation was not documented, official or regulated. Also, students began to expect all faculty to share their phone numbers. A work-provided phone could have assisted instructors if the institution preferred to have informal means of dialogue open between students and instructors. Acceptable means of communications needed to be clearly highlighted for all.

> the phone number in the WhatsApp group because other faculty are using it… but I've been clear from day one and I was like no… that's my phone the university does not provide me with a work phone and therefore you can only reach me through the e-mail [FFG]
> … I feel since it is a personal number it should remain personal… we have many other channels of communication with the students we have blackboard we have the e-mail … … students again are not encouraged to check their e-mail …..formal ways of communication should be considered for teaching [FFG]

There was a general agreement among faculty that students were being coddled to reduce the stress of remote learning. Attendance rules were relaxed, options of taking pass/no pass instead of actual grades, availability of recordings for sessions, keeping cameras on during lessons was optional, all these measures had made students more complacent about education and were detrimental to their learning.

> The whole approach needs to be changed… so that the learning process is taken seriously from the students … factors that are beyond our control needs to be changed such as the … attendance policy the pass and fail policy the camera and more issues regarding academic integrity [FFG]
> I really feel that we are not doing any favor to our students by pampering them… actually we are spoiling them to the extreme [FFG]

Recording synchronous sessions for student use was a grey area where no clear institutional guidelines had been provided. Since some faculty were making recordings available, students were disappointed with faculty who did not do the same. While faculty understood the use of recordings as an aide for revision, most felt that with relaxed attendance policies, students were missing out on live interaction knowing they could watch recordings later.

> if they don't attend there's no consequences for not attending… and they you know that they can have the recording of the lecture to to go… I don't know what is the policy or what should or should not be done [FFG]

Other concerns were related to privacy regulations; students and faculty were concerned about who would have access to the recordings and feared in the wrong hands, things could be misconstrued or taken out of context.

> Yeah I believe clear guidelines and training for students is also important students… have not been taught the ethics of accessing recordings either [FFG]
> … I don't understand how the university treats that recording… unless there are some clear guidelines of… what is expected from recordings etc. … I feel very conscious whenever I publish a recording because... I talk in my classes and in many cases we touch upon sensitive issues so that makes us… feel little bit guarded in what we say [FFG]

Concerns of intellectual property were also discussed.

> faculty who has worked on developing the material will they be compensated on that? or will it be done once and for all and there will be nothing for the faculty as an acknowledgement for their work at least? It is like patent rights [FFG]

4. Pros of remote learning and suggestions

Benefits

There was a clear preference for in-person teaching and learning from both faculty and students; nevertheless, some benefits of remote learning were

acknowledged. Students agreed that with such unprecedented times of a pandemic they were fortunate to have the option to continue their education from the safety of their homes.

> I feel like the positive thing about online learning is at least we're studying safely… without like getting infected or something [SFG]

Remote learning was deemed more flexible, particularly for those students who were unable to attend physical classes. Married women with greater responsibilities towards their home, pregnant and nursing girls could have the option to continue their education despite their constraints.

> I think online courses will be a good solution for breastfeeding … pregnant even those who … just give a birth … because my friend stopped last semester because she just gave birth…[SFG]

Several participants pointed out that remote classes saved time and effort. Some students had long commutes to come to campus and were relieved of the stress of traffic, waking up early in the mornings and cost of petrol.

> We have more time like we don't waste time in traffic… so we have more time to study and do other things [SFG]

Even faculty agreed that it was convenient to be able to teach from home, particularly on days when they had fewer lessons.

> I feel that wow this is more convenient you know I can just get up from bed sit on the laptop deliver a lesson and then I'm done..I don't have to… drive to work and then spend a whole day for one lesson [FFG]

Another benefit of the sudden shift to remote learning that was resonated by several faculty was that they were forced to come out of their comfort zones and embrace technology that they may never have considered earlier. Remote learning became an opportunity for professional development and enhanced portfolios.

> They said necessity is the mother of invention so now when you're forced to do online learning you you try to be creative so I I feel my teaching has changed… I've tried to learn more things, I've tried to make better assessments, … so definitely I think I've learned more and I've improved as an instructor after online learning [FFG]
> I think it helped build my skill ..I've got out of my comfort zone in terms of technology and using different set of softwares and stuff to get the class a little bit more interactive, things that I would've not really tried when I was doing in-person class [FFG]

As faculty got used to enhancing their technological expertise, students found the availability of class recordings a very useful support aide.

> I think this is the advantage of the online courses… yaani (I mean) this is one of the best advantage of this online… cause I can see whenever I don't understand [FFG]

Suggestions

Faculty had several suggestions which would make remote learning more successful. Many of these suggestions revolved around the need for clear institutional guidelines such as those mentioned earlier, regarding the use of recordings, intellectual property, privacy, assessments, and attendance policies.

It was also suggested that students be held more responsible. And one way to do that would be to include class participation as a graded component of the course.

> there is a strong justification now to bring back participation… because if one student is making the effort to you know to follow up to tell you that I can hear you I can see you … and making sure that she's there on time I feel like those students need to be… somehow rewarded or incentivized… we need an incentive to make the student participate… so bring back some participation 5% 3% 2% anything would would be an encouragement and incentive to students [FFG]

Another wish was for support to the faculty who were overwhelmed with extra work. Provision of work phones that could be switched off after hours would help faculty unwind after a day's work.

> I should be provided a work phone which I can switch off after hours but having my personal phone number with students has really drained me more than I feel it should have under normal circumstances [FFG]
>
> As instructors we are doing our bit, but we need more support we need more support from the college… they need to see our point of view [FFG]

4 Discussion

This paper explores the perspectives of students and faculty, in higher education, regarding online/remote learning during the COVID-19 pandemic. The most frequent discussion was related to alterations in human interactions. Feelings of disconnect, lack of enthusiasm, and the slower pace of classes complicated means of communication in online learning. As a result, students' interactions and engagement during classes declined. Online classes harbored feelings of isolation (Song et al., 2004), were devoid of body language and visual cues (Khalil et al., 2020; Liu et al., 2010), and were less motivating than face to face classes (Adnan, 2020). While Reese, 2015 argued that online synchronous face-to-face interactions helped overcome communication barriers (Reese, 2015), in this study face-to-face interactions were seldom seen despite having synchronous classes. Self-consciousness, privacy concerns, and UAE's conservative culture were the main factors explaining this behavior. A study conducted in the UAE revealed that female students were reluctant to participate actively online because they did not want males hearing their voice (Abou Naaj et al., 2012). Despite being in female-only classes, participants in this study refrained from being heard or seen. Nevertheless, students still favored the synchronous mode of lessons as it helped them maintain self-discipline, allowed for real-time interactions, which is akin to the views shared by O'Shea et al. (2015).

Even though there was a general decrease in class participation, faculty realized that some students who were previously quiet in class, including students of determinations showed increased participation during online classes. This is a finding that merits further investigation on increased inclusivity in online learning.

Both students and faculty agreed that undergraduate students lack the maturity needed to take online courses. Faculty suggested that online learning was more successful with graduate students as they were considerably more ready. A study showed that Chinese instructors, who were inclined towards the authoritative role, also believed that facilitation and delegation worked only for the more advanced level undergraduate students or at the Masters level. Undergraduate students in their first years were ill equipped to work independently and required more support from their instructors (Zhu et al., 2010). Literature suggests that constructivist and student-centered approaches are the most suitable pedagogical approaches for online learning (Partlow & Gibbs, 2003). These approaches require high levels of autonomy from students while instructors follow a facilitator role, providing support and feedback to students. However, these approaches are new to students and faculty in the UAE. One of the 6 dimensions of Hofstede's model, *power distance* refers to the extent that people in a society accept unequal distribution of power (Hofstede, 2011). In the UAE, hierarchy is naturally inherent within the society. In such hierarchical societies, education tends to be instructor-centered and typically exam-oriented. In Eastern cultures, instructors give lectures and students memorize the information to pass their exams (Liu et al., 2010). This explains why the transition from instructor-centered to student-centered education requires more than just technology and infrastructure, it needs a change of innate dispositions. Such changes require gradual acculturation to be embraced.

Students' belief that online learning was suitable only for some courses was resonated by students in other science-based majors as well. A study conducted in Saudi Arabia revealed that medical students believed that online learning was possible only for some courses; they preferred to take clinical labs and practical courses on campus (Khalil et al., 2020). The students in this study also faced difficulties with mathematics-based online courses. Julien and Dookwah (2020) supported this finding in their paper and stressed that face-to-face learning was necessary for mathematics oriented courses (Julien & Dookwah, 2020).

As in this study, online learning students often created groups on social media platforms to create a sense of community and to interact with each other (Dutta, 2020; Shea et al., 2015). However, as a result some students expected instructors to be constantly available to respond to them instantly (Kebritchi et al., 2017; Reese, 2015). In our study, faculty lamented that students did not understand the boundaries of personal time and professional etiquettes when it came to instant messaging. Other concerns included the possibility of missing important information, lack of instructors' work documentation, in addition to students having access to personal phone numbers (and vice versa). Clear policies on acceptable means of communication and the provision of work phones to faculty could provide a viable solution to these issues.

The results of the study are consistent with literature that suggests class recordings are very helpful to online students (Khalil et al., 2020; Mukhtar et al., 2020).

But faculty in this study were concerned that the provision of recordings facilitated students in missing classes and allowed them to slacken in classes, as also noticed by Mukhtar et al. (2020). A clear institutional policy could help allay concerns about privacy and misuse of recordings.

Faculty believed on-campus exams maintained the integrity of the assessments and reduced the chances of academic dishonesty. Furthermore, on-campus exams reduced students' anxiety because they had access to faculty support in an unforeseen emergency or simply to clarify difficulties in comprehending a question. It was unclear whether cheating had actually increased during online exams, but the absence of in-person proctoring encouraged instructors to design exams to reduce the possibility of cheating. The changes included preventing backtracking, replacing multiple-choice questions to short answer questions, tighter time limits, and the use of a proctoring software requiring students to keep their cameras on. Students considered these modifications stressful and intrusive to their privacy. Students also believed cheating would continue despite such measures. While the religious and moral constituents of the Emirati culture do not accept cheating, there are other cultural factors that seem to have a bigger influence on students' attitudes. UAE has a predominantly collectivist culture, where people value relationships over tasks (Hofstede, 2011).Thus some students could view cheating as a way of helping, and not as an academic violation. The exam-oriented culture also incentivized cheating, since good grades are akin to proof of success (Abou-Zeid, 2015). Interestingly, students suggested using questions that were not easily available from the internet as a more effective means of preventing cheating than the methods that were being employed. Faculty and students had mixed views on grade attainment in remote learning. Nevertheless, faculty noticed that students who were more responsible with their learning and attended classes consistently performed better than those who did not. This supports the argument of Partlow and Gibbs (2003) that the online learning experience can be improved when constructivist and student-centered approaches are followed. Faculty highlighted that some policies aiming to support students during the pandemic inadvertently encouraged them to be less accountable for their learning. Including stakeholders in such decision-making may support more successful policies being deployed.

Faculty and students were rushed in to experience a new mode of education, without being adequately prepared. Lack of training and insufficient technology-related skills are a hindrance to the successful implementation of online learning (Zhu et al., 2010). The UAE has a strong technological infrastructure (Almuraqab, 2020) yet, issues such as lagging internet connections, and declining quality of audio and video was a source of stress for faculty and students. Family members worked and studied at the same time which increased the load on internet utility. Other concerns were the lack of private spaces to study, frequent disruptions, and expectations of fulfilling familial responsibilities while at home. Similar challenges were reported by other studies conducted in the UAE and Saudi Arabia (Adedoyin & Soykan, 2020; Erfurth & Ridge, 2020; Hussein et al., 2020; Khalil et al., 2020). Regardless of these challenges faculty and students explained that with time they were able to accept and adapt. As mentioned in several studies, an increasingly heavy workload was a major challenge in online learning (Adedoyin & Soykan, 2020; Erfurth & Ridge,

2020; Hussein et al., 2020; Khalil et al., 2020). Due to the heavy workload, faculty felt unable to separate worktime from home-time. Faculty spent more time preparing for classes and responding to their students than when teaching on campus. Students revealed that online learning came in the way of them socializing and enjoying the actual campus experience. Günüç and Kuzu (2014) demonstrate that the university campus can influence the students learning experience. Proper campus facilities can improve the mental state of the students, participation in campus activities induce feelings of belonging and attachment to the university, and campus interactions strengthen the bonds between students and faculty (Günüç & Kuzu, 2014). Those factors together contribute to having an overall positive learning experience. Faculty and students also mentioned that their lifestyles had become more sedentary; postural strain, strain on eyes and headaches were frequently highlighted.

The lack of clear institutional guidelines on acceptable modes of communication between faculty and students made it difficult to set boundaries. Faculty felt pressured to give out their personal phone numbers to students, as resisting would be considered being unhelpful. Time spent responding to students' messages was unaccounted and undocumented work. According to Zhu et al. (2010), Chinese instructors were reluctant to spend more time communicating with students because it was an effort overlooked by the institution and was not included in the instructor's performance evaluation. To support students during the pandemic, attendance was not taken, pass/no pass option instead of letter grading was made possible, recordings were provided to students, and turning cameras on was not mandatory. Many felt these policies encouraged students to become less responsible about their learning. As mentioned earlier, concerns about misused recordings, and privacy requires clear institutional policies and guidelines. Instructors pointed out losing ownership of their courses due to the requirement of sharing recordings, which they felt was an encroachment of intellectual property (Reese, 2015).

Despite preferring face-to-face learning over online learning, the faculty and students explained that online learning did have some benefits. Our findings are consistent with the findings of (Hussein et al., 2020) who pointed out that online learning saved time and money spent on transportation, offerd a safe alternative to continue education during emergency times such as the pandemic, and provided a convenient option of learning for some. The availability of recordings was considered another major advantage of online learning, which could also offset some of the hindrances faced due to technological issues and internet connections. Moreover, the faculty considered online learning as a professional development opportunity to greatly improve their technological and pedagogical skills. These findings are also in line with Dhawan's (2020) and Dutta's (2020) who highlighted that online learning encouraged instructors to practice using technology, to utilize new online platforms, and to come up with creative pedagogical approaches.

Faculty suggestions to improve online learning included development of clear institutional guidelines to encourage students to be more responsible for their learning and streamline instructions related to issues of usage of recordings, intellectual property, attendance, grading, and assessments (Kebritchi et al., 2017). Thorough guidelines can help manage unreasonable expectations, mitigate problems from occurring in the first place and ensure fairness all over. The faculty

also suggested that class participation should be a graded component of remote learning, to encourage students' engagement in online classes. This suggestion has been successfully applied in the United States, where instructors assess the level of students' participation to ensure that they are consistently engaging in class discussions (Liu et al., 2010). Providing instructors with work phones was suggested by the faculty to support instructors as it could help them separate their personal and professional lives. Addressing the concerns of the faculty and involving them in decision-making can aid in overcoming barriers to acceptance of online learning. Vrasidas, 2015 found that not involving teachers in decision-making regarding development of online courses resembled a barrier to the use of technology in classrooms (Vrasidas, 2015).

4.1 Limitations and strengths

The study should be considered in the light of some strengths and limitations. Qualitative studies do not aim to be generalizable, therefore do not necessitate random or representative sampling. Convenience and snowball sampling methods for this study cannot ensure that the findings of the study are generalizable to all university students in UAE. The focus was on a population of students from a particular discipline in a single University in Dubai. A homogeneous group of participants aimed to provide more valuable insight into the sociocultural influences on remote learning (Leung, 2015). Efforts were made to ensure transferability of the study by providing thick descriptions of how the study was carried out at every step. Reliability and credibility of the study entailed that there was prolonged engagement with the participants and direct quotations from the discussions add trustworthiness to the findings. Data was collected until saturation was reached, constant comparison was carried out, conforming and variant views were considered and reported. Triangulation per se in terms of different research instruments was not employed, however, all findings were triangulated and analyzed in relation to similar qualitative and quantitative studies in the region. Multiple researchers analyzed the codes and themes that emerged from the data to confirm intercoder reliability, peer debriefing and consistency (Barusch et al., 2011). Data for this study was collected from only one university in Dubai. Institutional policies of the university could have influenced the remote learning experiences, however since it was a public university governed by the Ministry of Education, we assume all other public universities of the region would have similar education policies. The data was collected within the first year of transition to remote learning. A longitudinal study would be useful to follow up to see if perspectives on remote education evolved or changed with time and experience. It is prudent to acknowledge that the study was carried out under circumstances and settings unique to COVID-19. Comparison of views between male and female students and faculty and based on varying disciplines could be considerations for future studies. The study hints that remote/online education may aid people of determination. Further exploration of how remote education may facilitate such students could be of extreme value.

5 Conclusion

This paper explores the perceptions of higher education students and faculty in the UAE towards online/remote learning during the COVID-19 pandemic. This qualitative study clearly shows that the move from face-to-face learning to remote/online learning has multiple areas of complexity worthy of consideration. Of utmost importance is the need to consider sociocultural influences on social interaction, learning environments, acceptability, and availability of education. One size does not fit all, when considering remote and online education. Synchronous sessions seemed to be the preference; however, the level of education and discipline was also a significant concern while assessing appropriateness for online mode of delivery. The views from this research will contribute to improving the adoption and outcomes of digital education in higher education in the field of science while considering the sociocultural influences of the region. This study also indicates the potential value of remote education in making education more accessible and inclusive for atypical students.

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Availability of data and material Available on request.

Code availability Not applicable.

Declarations

Ethics approval Ethical clearance for the study was obtained from Zayed University's Research Ethics Committee (UAE) (Ethics application number ZU20_122_F). No data that can be linked to individuals has been used or analyzed.

Consent to participate Informed consent was taken prior to focus group discussions.

Consent for publication Was included in informed consent and taken during the focus group discussions.

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