

Exploring Sultan Qaboos University Students' Perceptions and Challenges: Unveiling the Realities of Asynchronous Online Learning during the COVID-19 Pandemic

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Abstract: *This study investigates how Sultan Qaboos University (SQU) students view the AOL as a result of the quick shift to the asynchronous online learning (AOL) mode during the COVID-19 dissemination in February 2020. To assess students' perceptions toward AOL, a self-administered questionnaire and 494 students were used. Students were given 9 statements, both favorable and negative. Each statement was graded on a five-point scale (strongly disagree (1), disagree (2), neutral (neither agree nor disapprove) (3), agree (4), and strongly agree (5)). An internet-based survey was created to obtain student feedback on AOL. The majority of student participants disagreed that the AOL was more convenient, flexible, satisfying, or a fantastic learning tool than a face-to-face classroom. The majority of respondents believed that the AOL technique would result in less peer collaboration, lower mood, motivation, and capacity to focus, as well as learning problems. The vast majority of them also stated that the AOL hindered their academic development and knowledge while having little impact over them. The majority of students opposed utilizing AOL at college and favored face-to-face training over AOL mode. Students' opinions, experiences, and preferences on the AOL at SQU were dissatisfying due to a lack of intrinsic and extrinsic academic motivation. As a result, SQU students lack the resources needed to learn the AOL method. Based on these findings, there is a chance to improve students' attitudes, acceptability, and motivation for academic online learning systems by including effective learning techniques and upgrading network and internet access architecture.*

Keywords: Online learning, Perspectives, Classroom, Traditional learning, Oman, University education

1. Introduction

In February 2020, coronavirus disease (COVID-19) was considered a pandemic infectious disease. The newly discovered virus tends to be extremely contagious and has spread rapidly all over the world. The number of people affected by COVID-19 continues to increase due to improper cough etiquette, social distancing, and hand hygiene practices (WHO, 2020). Globally, the COVID-19 had a powerful impact on population health and everyday life activities such as teaching and learning activities. To ensure the safety of children and school staff and to prevent the introduction and spread of COVID-19 in schools and into the community, all countries around the world shut down schools, colleges, and universities. This decision upended traditional education systems and the learning process. According to UNESCO, more than 1.7 billion students are out of school because of this pandemic disease. Because social distance was critical in this environment, and because education is so important in life, most educational institutions transferred the education and learning process to online classrooms (Rothan and Byrareddy, 2020; Cifuentes-Faura et al., 2021).

Online learning can be defined as a type of online learning introduced to the learner by using an interactive, learner-centered electronic environment that provides diverse learning resources that result in knowledge acquisition and skill development through monitoring, evaluation, and feedback. Online learning began as an asynchronous mode

with videos and lectures due to its multiple advantages as well as improvements in technology. Online learning or virtual learning such as through the Internet, audio, and video is now possible across all university disciplines such as language, engineering, dentistry, agriculture, and many others, including nursing (Asiry, 2017; Elbasuony et al., 2018). For instance, asynchronous online learning (AOL) can be utilized by students as supplemental course information as well as to submit course assignments through the use of electronic devices such as television, mobile phones, tablets, desktops, and/or laptops (Al-Khanjari et al., 2005; Back et al., 2016). Another type is blended or hybrid online learning, in which students attend regular classes as well as use online learning in part (Singh et al., 2021).

Academic institutions are increasingly utilizing online learning technology as a result of technological advancements. These institutions have designed classes and courses online in a variety of ways or types over the last decade. Learning management system/platform/ software (LMS) is one type of online learning platform designed to help academic institutions and organizations provide online and distance education. It is used to plan, execute, and assess a specific learning process (Costello, 2013; Back et al., 2016; Singh et al., 2021). These institutions can use LMS to manage course registration, course administration, documentation, skill gap analysis, automation, tracking, reporting, and all other aspects of e-learning training programs. Furthermore, LMS enables teachers to create, manage, and deliver online courses, as well as easily

incorporate quizzes, educational course delivery, and other interactive elements into their courses. It also gives students more control over their studies by allowing them to participate in real-time discussions, chats to ask questions, and constant access to their trainer (Back et al., 2016; Hasan, 2019). For example, Blackboard and WebCT are powerful commercial LMS systems with high licensing fees. On the other hand, Moodle (Modular Object-Oriented Dynamic Learning Environment) is the first open-access free software that was developed in Australia by Martin Dougmias in 2002. Moodle was created and designed using a learning theory known as social constructivism. Moodle has recently become very popular and widely used in schools and universities to assist educators in easily building online courses, adding assignments, creating quizzes, and assessing student progress. As a result, Moodle makes it easier for teachers to interact with their online students. Moreover, Moodle can be utilized in many types of environments, such as blended learning, distance education, the flipped classroom, and other online learning projects in schools, universities, workplaces, training and development, business settings, and other sectors (Costello, 2013; Horvat et al., 2015; Hasan, 2019).

Because of the dynamic nature of technology advancement, online learning is appropriate in a changing educational environment due to its low cost, simplicity of course change, and rapid course upgrading. As a result, education via the internet and technology has become a global reality. Earlier research focused on the many factors that contribute to online learning modules being a good tool for transitional knowledge (Asiry, 2017; Elbasuony et al., 2018; Brockman et al., 2020; Abbasi et al., 2020; Singh et al., 2021). These studies highlighted the benefits of online learning in achieving growth and prosperity in developing nations. They also observed that modules had a positive impact on students and that students enhanced their knowledge after using online learning modules as opposed to traditional methods. They additionally noticed that combining online practice with face-to-face learning methodologies is favored, despite the fact that some students advocate for online learning. Furthermore, they concluded that the effectiveness of online learning and teaching is based on students' and instructors' reactions and acceptance of such a Moodle or learning platform.

Unfortunately, a number of reasons or barriers have limited the efficacy and uptake of online learning in both developed and poor nations. According to a literature review, there are at least six types of barriers: technical issues, individual issues, pedagogical issues, cultural challenges, course challenges and psychological barriers (Back et al., 2016; Hasan, 2019; Ali et al., 2018; Almahasee et al., 2021). They noted that many academic institutions in both developed and developing countries face difficulties in terms of student utilization and online learning implementation. They also reported that the most common hurdles to online learning that students encountered while accessing online courses were a lack of resources, infrastructure problems, technological challenges, organizational leadership, social interaction, and inadequate computer abilities. However, developed countries are more concerned than developing

countries about their students' willingness to embrace and use the e-learning system.

To promote successful and worthwhile learning, it is critical to consider learner preferences, attitudes, performance, and viewpoints when building online courses. Previous research has found that computer self-efficacy, the operation of the online learning platform or system, content characteristics, and interactivity all have a significant impact on performance expectations, whereas learning pleasure is influenced by both the learning climate and performance expectations (Wu et al., 2010; Harandi, 2015; Peacock et al., 2020). Furthermore, the most essential criteria influencing students' active involvement and participation in online learning were sentiments of autonomy and belonging. According to current research, students' motivation and happiness with any online learning system ultimately influences its acceptance, efficacy, and outcomes (Horvat et al., 2015; Ali et al., 2018; Brockman et al., 2020; Almahasee et al., 2021). As a result, students' perspectives, attitudes, interactions, performance, and preferences were identified as the primary problems for any online learning system.

The COVID-19 outbreak struck the Sultanate of Oman, as it did other countries. To combat the outbreak, the Sultanate of Oman closed all schools and institutions across the nation and implemented an online learning system. Unlike Europe and the United States, Oman has just lately adopted the AOL system, especially the Moodle platform. As previously said, students' experiences and perceptions on online learning in higher education varied greatly during the pandemic. Likewise, the study literature on students' perceptions of online compared to traditional face-to-face classrooms is varied. Teachers and university management must thus be aware of their students' learning needs and expectations, as well as how the AOL platform compares to the face-to-face learning that university students are accustomed to. Taken as a whole, this is an important topic that has received little attention in the literature, particularly at higher education institutions in Oman. In addition to these issues, the current study was inspired by a paucity of research on students' opinions and attitudes on using the AOL platform during the COVID-19 epidemic in the Sultanate of Oman. Therefore, the current study sought to ascertain how students at Oman's Sultan Qaboos University (SQU) witnessed, experienced, felt, and approved the AOL process during the COVID-19 epidemic.

2. Method

Sampling site

This research was conducted at SQU in Muscat, Oman. Oman is a nation located in the Middle East. It is situated on the Arabian Peninsula's southeast coast, between the UAE and the Republic of Yemen. SQU was founded in 1986 as a public university with nine colleges and a diverse variety of academic subjects. Colleges of Medicine, Nursing, Science, Education, Engineering, Law, Arts, Agriculture and Marine Sciences, and Economics are among them. This institution had 157 programs under development as of June 2022. As of June 2022, SQU has 157 programs and at least 15 research and support centers, including human resources, staff development, instructional technology, and information

systems centers. Furthermore, all SQU colleges used Moodle for AOL as well as to supplement and enrich conventional learning. The Center for Educational Technology is responsible for offering total Moodle access support.

Study Design and Sampling

The majority of university students were frequently picked based on how well they performed on their high school final examinations. According to the latest recent figures, SQU has 17597 undergraduate and graduate students enrolled (Sultan Qaboos Annual Statistics Book, 2019). SQU offers two traditional semesters: autumn (first) and spring (second), with a third semester (summer) optional. SQU also uses semester credit hours to monitor and assess students' work and effort throughout their Bachelor's degree program. Students must complete 120-130 semester hours of credit at SQU in order to graduate with a Bachelor's Degree. SQU students normally earn their bachelor's degree in four years utilizing the semester system.

We chose to split student levels based on the number of credits each student had completed at the time of the study, using the academic credit hour technique. Freshman: 0-30 credit hours, sophomore: 31-60 credit hours, junior: 60-90 credit hours, and senior: 90-120 credit hours. Undergraduate students enrolled in a full-time degree program at SQU and engaged in online learning were eligible for this study. To investigate students' perceptions of AOL during COVID-19 outbreaks in Oman, 494 students from all nine SQU colleges were volunteered to take part in this cross-sectional descriptive survey.

Constructing survey questionnaires

A self-reported questionnaire was developed to investigate students' perceptions, opinions, and preferences concerning AOL procedures at SQU in Oman during the COVID-19 epidemic, as previously described (Abbasi et al., 2020). Students who consented to take part in this survey were given a single set of nine closed-ended questions. All questions were collated on a Google form so that student participants may respond to them.

Gender, age, college type (College of Medicine, College of Nursing, etc.), and grade level (first, second, third, and fourth years) were gathered for each participant at the start of the survey. Following much study and debate, we decided to focus on nine essential questions in order to elicit the most meaningful replies. An initial set of nine questions was prepared to collect the essential data for the investigation. The following were among the inquiries: (1) The AOL provided me with better learning opportunities than face-to-face learning (I was able to learn new skills and obtain valuable qualifications); (2) The AOL was more convenient and flexible than the traditional face-to-face classroom (felt more comfortable at home, did not get tired like in the classroom, and could learn whenever and wherever); (3) The AOL was a fun and useful learning tool; (4) Universities should adopt AOL for their students; (5) AOL can reduce collaboration with peers as well as mood, concentration, and ability to focus; (6) The AOL lowered the level of knowledge attained, as well as academic achievement and success; (7) It is more enjoyable to attend live lectures than

AOL lectures; (8) Technically, AOL's quality was deplorable (poor internet access and infrastructure); (9) The instructor was well-prepared and capable of organizing and overseeing the AOL process.

Following the preparation of the questionnaires, pre-tests were conducted to assess how well respondents understood the wording of the questions. The original questionnaire was presented to a few nursing faculty colleagues, educational research faculty members, and a few selected students to review. We asked for feedback on the clarity, readability, and appropriateness of the survey statements, and then asked for critical feedback and explanations of how they saw these issues. While rephrasing some of the responses, their views and suggestions were taken into account. This strategy was used to avoid survey mistakes and biases that may upset participants. Based on the responses and opinions we got, we were able to make minor changes to each particular question. As a consequence, the questions were altered and reformatted to fulfill our goal of eliciting the most viable responses.

Data collection procedure and ethical considerations

The online survey was created and run using Google Surveys (<https://surveys.google.com/your-surveys>). All nine statements offered respondents the option of picking one of many replies. Students assessed each statement on a 5-point scale of agreement or disagreement. As a result, a five-point Likert scale was chosen and utilized to measure the student's ideas or agreement with these nine claims. The response options were strongly disagree (1), disagree (2), neutral (neither agree nor disagree) (3), agree (4), and highly agree (5). The questionnaire was translated from English to Arabic and back.

Prior to data collection, SQU's Research Ethics Committee granted the ethical permission. A research information leaflet and consent form were created and approved by the Deanship of Scientific Research. The study's objectives and relevance were disclosed to all students through email. They were told that the survey would last 20 minutes and that their participation was entirely optional. Furthermore, participants were guaranteed that both their participation in the study and the confidentiality and privacy of their comments would be completely anonymous. They also informed that their course marks, studies, or academic credentials would not be affected. Those who accepted to participate in the survey were asked to fill out a consent form before accessing the online questionnaire through the URL provided. All data were saved in password-protected folders on the investigator's computer, and their replies were kept secret. All replies were entered into an excel spreadsheet and displayed as needed. Each response was given a number, which was then averaged across all topics to get a score reflecting the respondent's opinions and attitudes about the statements.

Data analysis

All responses were reviewed, assessed, and scored. The data was analyzed using descriptive and inferential statistics. The statistical application SPSS 20 (Statistical Package for the Social Sciences) was utilized. To investigate the relationship between demographics and student attitudes, the t-test and

ANOVA were used. P-values of 0.05 or less were considered statistically significant. The interpretation outlines the fundamental cause of the obtained result, as well as future projections and suggestions.

3. Results

This study surveyed current full-time undergraduate students at SQU to investigate students' perceptions and attitudes concerning the AOL during COVID-19 outbreaks that impacted their preparedness to learn online. Table 1 depicts the demographic characteristics of SQU students in Oman. According to the statistics, there were 494 participants with a mean age of 20.8 years (standard deviation = 3.5, range = 18 to 35 years). All participants were full-time undergraduate students at SQU who were exposed to primarily AOL method. There were 284 females (57.5%) and 210 males (42.5%) among the 494 students that took part. Because SQU's bachelor's degree program lasted four years, students were classified based on their period of enrollment. The majority of participants (193: 39.1%) were in their third year, followed by the second year (136: 27.5%), and finally the first year (100: 20.2%). The fourth year had the lowest percentage of students enrolled (65: 13.2%).

Table 1: Demographic characteristics of the participating students (N=494) of Sultan Qaboos University in Oman

Variable	Frequency	Percentage
Age (years)		
18 – 24	414	83.8
25 – 35	80	16.2
Gender		
Male	210	42.5
Female	284	57.5
Year of Study		
First year	100	20.2
Second year	136	27.5
Third year	193	39.1
Fourth year	65	13.2

Table 2 illustrates the percentages of student participants who agreed or disagreed with nine statements about the teaching and learning processes, as evaluated using the AOL approach. According to the findings, the majority of undergraduate students (61.1%) disagreed that AOL provided them with more learning opportunities than traditional learning methods, while just 23.5% agreed. Around 15% of students picked the neutral option (neither agree nor disagree). Similarly, 61.3% of students opposed statement (2), while 22.5% agreed. Only 16.2% of students stated that they were unconcerned.

In answer to statement (3), 326 students (66.0%) disagreed that AOL was a pleasant and fantastic instrument for learning, while 103 students (20.8%) agreed. Only 13.2% of students were neutral. In this survey, 68% of student respondents opposed statement (4), which said that schools should utilize the AOL technique for their students. Only 21.1% of student participants, however, would suggest the AOL strategy to their university. In addition, just 10.9% of students labeled themselves impartial.

In response to statement (5), 78.8% agreed that the AOL technique could lead to less collaboration with peers, lower mood, motivation, and capacity to focus, as well as learning issues, while 11.1% disagreed. In comparison, 10.1% of respondents picked neutral. In response to statement (6), the AOL process lowered the quality of information obtained and academic accomplishment, 318 students (64.4%) agreed, while just 80 students (16.2%) disagreed. Furthermore, just 19.4% of respondents indicated neutrality.

In response to statement (8), 77 respondents (15.6%) disagreed that AOL's technical quality was poor due to poor internet connectivity and infrastructure. While 66.4% of students said the AOL's quality was inadequate. Only 89 students (18.0%) were unsure. When asked if the teacher was properly prepared and capable of organizing and administering the AOL process, 318 students disagreed, while 22.1% agreed. Only 13.6% (67) of the students chose the neutral option.

Table 2: Students' perspectives toward online learning during COVID-19 at Sultan Qaboos University in Oman

Statements	Number of responses		
	Disagree, N (%)	Neutral, N (%)	Agree, N (%)
1) The asynchronous online learning provided me with better learning opportunities than a face-to-face learning (learn new skills and gain valuable qualifications).	302 (61.1)	76 (15.4)	116 (23.5)
2) The asynchronous online learning was more convenient and flexible than traditional face-face classroom (feel more comfortable at home, do not get tired as in the classroom and learning anytime and anywhere).	303 (61.3)	80 (16.2)	111 (22.5)
3) The asynchronous online learning process was a fun and great tool for learning.	326 (66.0)	65 (13.2)	103 (20.8)
4) Universities should adopt the asynchronous online learning for their students.	336 (68.0)	54 (10.9)	104 (21.1)
5) The asynchronous online learning can lead to a reduction in collaboration with peers and a decrease in mood and ability to focus as well as lead to learning difficulties.	55 (11.1)	50 (10.1)	389 (78.8)
6) The asynchronous online learning reduced the quality of knowledge attained and academic achievement and success.	80 (16.2)	96 (19.4)	318 (64.4)
7) More pleasant to attend live lectures than the asynchronous online learning lectures.	83 (16.8)	73 (14.8)	338 (68.4)
8) Technically, the quality of the asynchronous e-lecture was unsatisfactory (poor internet access and poor infrastructure).	77 (15.6)	89 (18.0)	328 (66.4)
9) The instructor was fully prepared and capable to organize and monitor the asynchronous online learning process.	318 (64.3)	67 (13.6)	109 (22.1)

Data are presented as the number (percentage) of responses for each statement. Agree indicates 'strongly agree' and 'agree' while disagree indicates 'strongly disagree' and 'disagree'

4. Discussion

Prior to the COVID-19 outbreaks, SQU administration only gave a few online courses. When the WHO declared COVID-19 a pandemic in early 2020, SQU were obliged to switch to online learning and teaching as a substitute to conventional learning (WHO, 2020). During the pandemic time, AOL was the only accessible and approved alternative for educational institutions to enable access to and delivery of interactive education/training courses and resources to students and teachers. As a result, the current survey was designed to investigate the perceptions, experiences, preferences and efficacy of SQU students who received AOL at SQU during the COVID-19 outbreak using nine specific statements. According to the data, only 2.81% of 17597 full-time students freely chose to participate in this poll and answered all survey questions. Seniors were also shown to be less likely to participate in this survey than freshmen, sophomores, and juniors.

The present survey revealed that just a tiny percentage of students believed that AOL courses were more convenient and flexible than traditional courses. Likewise, just a minority of respondents believed that the AOL technique provided them with new skills and valuable qualifications. Furthermore, just a few students indicated that AOL was an entertaining and great tool for learning. Similarly, just a tiny number of participating students thought online learning was more effective, convenient, and flexible than traditional classroom learning. These findings might be explained by the fact that students' negative experiences and attitudes about online learning were impacted by a range of online learning side effects on students. For instance, most SQU students are unfamiliar with AOL style. Previous studies also reported that students expected to struggle with the abrupt and quick transition from face-to-face to AOL teaching and learning style due to the lack of presence of a teacher, feeling socially isolated, greater workloads, and other negative consequences (Back et al., 2016; Hasan, 2019; Ali et al., 2018; Almahasee et al., 2021). As a result of analyzing these comments, we may infer that we were able to identify some of the limitations in AOL as seen by SQU students. Based on these negative effects, students may be unable to embrace and love AOL style, as well as acquire the essential communication skills for academic accomplishment. To change students' perceptions of the AOL approach, SQU students must first acclimatize to their new learning environment.

According to the survey, the majority of the participating students tended to favor face-to-face environments over AOL classes owing to a lack of motivation, interest, and pleasure. Similarly, the majority of respondents in this survey was opposed to the implementation of AOL mode in their university and had unfavorable impressions of this sort of learning mode. Our findings were consistent with previous studies conducted to investigate students' perceptions of online learning during the COVID-19 pandemic, which documented that students have negative perspectives and attitudes toward the AOL process due to a lack of extrinsic and intrinsic academic motivations (Ali et al., 2018; Abbasi et al., 2020). Our findings, however, contradicted previous research findings that students had

favorable views about online learning during the COVID-19 outbreak (Indriani and Widiastuti, 2021; Singh et al., 2021; Muthuprasad et al., 2021). The disparities between these surveys might be related to differences in the characteristics of individuals surveyed as well as differences in the country's background. The differences between our study and other studies might also be attributed to the organization's culture, infrastructure, and resource availability, which influence student perception and acceptance of AOL method as well as adaption to new technology. Indeed, past research has demonstrated that student perception and acceptance of online learning systems are the most important barriers and/or variables that directly impact the long-term success or failure of online learning systems (Nennig and Idárraga, 2020; Muthuprasad et al., 2021). Furthermore, it may be argued that during and after the spread of COVID-19, student acceptance and perception of AOL may vary over time and between geographic areas.

The majority of respondents stated that AOL impeded peer collaboration, decreased mood and ability to focus, and made it harder to absorb things presented. Furthermore, the majority of students indicated that AOL lowered the quality of knowledge obtained as well as academic accomplishment and success. The majority of students stated that live lectures are more enjoyable than AOL lectures. Our findings were clearly consistent with previous research that found a lack of both human interaction and peer engagement to be a barrier to learning course content using AOL approaches (Ali et al., 2018; Dos et al., 2020; Abbasi et al., 2020; Indriani and Widiastuti, 2021; Maheshwari et al., 2022). This can be difficult for many of our students who have grown accustomed to having a teacher in the classroom. Without this, students are more likely to be lonely, divided, or uninterested. Without a doubt, AOL has resulted in a complete absence of social connection between teachers and students, which may lead to diminished mood and capacity to focus, as well as making it more difficult to assimilate information offered and limit academic performance and success. These findings emphasize the need of faculty members examining their teaching methods in order to evaluate their performance and suitability for the students they educate.

Furthermore, based on results of this survey, numerous SQU participants stated that the AOL quality was insufficient due to low Internet connectivity and infrastructure. It might imply that SQU students had negative opinions of AOL owing to poor or non-existent network connections, equipment, software, and programming. Because of these factors, SQU students are disappointed, frustrated, and unable to study using the AOL technique. This might account for the student's poor academic performance during the outbreak of COVID-19. This conclusion supported the findings of Ali et al. [19], who documented that poor Internet connectivity, infrastructure, and pedagogical challenges all led to the failure of online learning systems and unsatisfactory academic performance for students. The study's findings emphasize the need of providing students with inexpensive and consistent internet access, as well as improving internet quality.

According to the findings of this survey, many of the participating students believed the teacher was unprepared and incapable of arranging and overseeing the AOL. These findings might be one of the reasons why most students dislike and resist online learning. According to past surveys, effective instructor facilitation, teacher presence and contact with students, and well-organized lecture-based instruction all have a substantial impact on students' perceptions of online learning (Abbasi et al., 2020; Indriani and Widiastuti, 2021; Cifuentes-Faura, 2021; Maheshwari et al., 2022). These surveys also revealed that excellent lesson planning, evaluation criteria and assessments by instructors or teachers are critical factors in promoting students' motivation, enthusiasm, and learning, as well as engaging students and increasing their productivity while learning online. Indeed, extraordinarily well-planned courses provide amazing learning results, whereas poorly designed courses produce poor learning outcomes (Shariq et al., 2022). Furthermore, teachers or educators must be proficient with online learning technologies in order to pick the tools that will help them reach their educational objectives. In fact, a lack of professional skills may be a significant barrier, particularly for instructors who started their careers when technological expertise was not required. Regardless, teachers or professors must aim to encourage and integrate all of their students in the online learning process, as well as hold themselves accountable for their students' and their own professional advancement. If taken more seriously, these findings will be significant in providing university decision-makers and faculty members with information that will allow them to respond to the AOL challenge and encourage them to remove the barriers that impede student success with online environments and hinder the online learning process.

It is also worth noting that interaction between students and instructors was limited to the internet in order to minimize the spread of COVID-19 throughout the Oman community. As a result, psychological factors can have substantial influences on students' attitudes, behavior, and acceptance of the AOL system. Examining and comprehending these psychosocial components is thus critical for building an efficient online learning plan. To enhance students' perceptions and acceptance of the AOL system, as well as to create this inviting environment, institutions and regulators must work together to address important psychological and socioeconomic structural impediments.

Even after the COVID-19 epidemic was over, SQU continued to use internet materials for specific subjects. All challenges and difficulties raised by students should be considered when building new online courses at SQU to improve the learning experience on the AOL platform. Recognizing AOL challenges may also aid with the transition from conventional face-to-face learning approach to online learning and teaching methods. To accomplish this task, we propose that combining a hybrid mode with normal courses is a potential marketing technique for enticing students and teachers to fully migrate to the AOL method. Students that use hybrid learning can learn at least half of the time online and half in person. Indeed, during the pandemic, some university embraced a hybrid strategy in which theoretical lectures are given online and practical sessions are delivered in traditional on-campus classrooms

(Singh et al., 2021). If academic institutions build this sort of learning successfully, it is feasible to increase student tolerance and awareness of the relevance of online learning not only during pandemic diseases, but also following pandemic crises.

Furthermore, the T-test and ANOVA were performed to investigate if there were any correlations between background characteristics and attitudes regarding the AOL process (data not shown). There were no significant variations in AOL views between men and women ($t=0.216$, $p=0.83$). There were no significant differences in terms of study level or views regarding AOL ($F=1.1$, $p=0.36$). Furthermore, the Person correlation coefficient was performed to investigate the association between age and attitudes about AOL; the findings demonstrated a weak negative relationship ($r=-.06$; $p=0.18$).

This investigation was limited in certain aspects. To begin, sampling bias may develop as a result of survey location, notification, and email distribution. Students who did not enter their e-mail addresses, for example, were barred from participating in the study. The subjective nature of the criterion may lead to reporting bias. Second, the sample was taken from a single institution, and only 497 of 17597 full-time students chose to take part in this survey, representing a relatively tiny percentage of the targeted students (2.81%). A representative sample size is typically approximately 10% of the target population, meaning that this survey's sample size was underrepresented in comparison to the total number of full-time students. The last limitation stemmed from the survey's self-reporting character. The fundamental problem of self-reported replies is that respondents may not answer questions accurately or truthfully, or they may be unable to adequately appraise themselves. During the COVID-19 pandemic, some respondents may encounter psychological dangers such as despair, fury, frustration, embarrassment, disappointment, anxiety and stress. These psychological risks might skew survey results. These limitations obviously restrict the extent to which the study's conclusions may be generalized to and across a wide range of situations. Nonetheless, despite its shortcomings, the study's findings should not be construed as proof that this form of online learning is unsuccessful, but rather as input for an alternative strategy.

5. Conclusion

The purpose of this study was to examine students' perceptions, preferences and attitudes concerning AOL at SQU in Oman during a coronavirus pandemic. The majority of students, according to the data, had unfavorable opinions regarding the AOL strategy during the ongoing COVID-19 outbreak. The majority of participants did not find this AOL approach fun or suitable. According to the study's findings, the AOL learning environment differs greatly from the conventional face-to-face classroom setting in terms of learner motivation, interaction, satisfaction, and other aspects. Due to a lack of intrinsic and extrinsic academic motivation, SQU students prefer in-person instruction over online lectures. Collectively, it is possible to conclude that SQU students are not ready or equipped to study courses utilizing the AOL technique.

Given these findings, it is vital to analyze and manage students' perceptions and acceptance of online learning systems throughout any plans for online learning project execution in order to maximize the success and quality of the final online learning experience. More significantly, this study emphasizes the need of tackling the major roadblocks and limits that affected SQU students' beliefs and attitudes toward AOL. As a result, SQU teachers and administrators must create and implement strategies for monitoring student satisfaction and dissatisfaction with online learning as a prospective promotion tool.

Furthermore, we believe that introducing a hybrid mode of learning at SQU will improve students' attitudes about the AOL technique, as well as their academic performance and success in the following years. Finally, and most crucially, rethinking and redesigning higher education with online components prior to fully converting the educational and learning process to AOL will remove obstacles that students face during AOL. Therefore, implementing these strategies would increase student's perception and happiness and sustain AOL following any epidemic or pandemic era as basic prevention measures that are still required in poor nations like Oman.

Acknowledgments

We would like to acknowledge the employees of Sultan Qaboos University's College of Mass Communication for their guidance and valuable assistance with data collection and analysis, as well as feedback on this study.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Data Reproducibility: The corresponding author of this study can provide the data upon request to the journal representative, both during the submission process and after the publication.

Declaration of competing interest: The authors whose names are listed below certify that they have no affiliations with or involvement in any organization or entity with any financial interest (such as honoraria; educational grants; participation in speakers' bureaus; membership, employment, consultancies, stock ownership, or other equity interest; and expert testimony or patent-licensing arrangements), or non-financial interest (such as personal or professional relationships, affiliations, knowledge, or expertise) in the subject matter or materials discussed in this manuscript. Aisha Alshdefat, Fawzi Irshaid, Shreedevi Balachandran, Rasha Abu Baker.

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