International Islamic University Malaysia

CONTENTS

Challenges of Online Learning Faced by IIUM Malay Undergraduates during COVID-19: A Case Study

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Abstract: This study examined the challenges of online learning faced by Malay undergraduate students studying at the International Islamic University Malaysia (IIUM) during the global pandemic of COVID-19. The study used a qualitative research technique and face-to-face semi-structured interviews for collecting data. The interview includes details about the participants' demographics, backgrounds, and the key study-related questions. Furthermore, the research employed open-ended questions to prompt participants to openly discuss their experiences without being restricted by predetermined responses. Participants were provided with information sheets and email consent forms before the interview session. Ten IIUM undergraduates were chosen using the purposive sample approach. Six females and four males participated in the research, and they were Malay students from Malaysia. The data was transcribed word for word into a Microsoft Word document and then classified into themes, analysed, interpreted, and validated. The results of the study showed that the students faced challenges in terms of internet connection, technological devices, social interaction, learning environment, and physical and mental health. The paper highlights the challenges of online learning encountered by Malay undergraduates studying at IIUM during COVID-19 pandemic. The new learning method was implemented in unprecedented global circumstances. Students remained at home, which became an alternative learning environment. Meanwhile, they went through some negative situations affecting the learning process. This paper presents and discusses five challenges and supports the findings by citing previous studies. The research results provide concerned agencies, like the Malaysian Ministry of Education, with a sociological understanding of the challenges involved in e-learning. They identify to what extent the available infrastructure for information and communication needs expansions and improvements to overcome internet access limitations in rural and urban areas. Furthermore, the research offers insight into the necessary initiatives that the Ministry of Higher Education in Malaysia should undertake to help in reducing the challenges facing higher education students.

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Background of the Study

Education is valuable for human societies because it promotes knowledge and instils good conduct. The Malaysian Ministry of Higher Education seeks to develop students who are cognitively, emotionally, spiritually, and physically healthy and balanced, with a strong faith in God (Ministry of Higher Education, 2019). Accountable personnel in the educational sector were concerned about sustaining the learning process throughout the critical time of COVID-19 pandemic.

The coronavirus, also known as COVID-19, has caused a fatal pandemic that began spreading worldwide in December 2019, forcing educational institutions of all levels, primary, secondary, and tertiary, to shut down and shift to online education. Online learning was introduced before COVID-19 also, but not as a full teaching and learning method. Hybrid learning was also introduced as a combination of physical and online education (Gaol & Hutagalung, 2020), but most universities were not focusing on online methods, especially in developing countries.

Online learning has two forms: synchronous and asynchronous. Synchronous learning is "live, real-time (and usually scheduled), facilitated instruction and learning-oriented interaction" (Shahabadi & Uplane, 2015, p. 131). Asynchronous learning is "an interactive learning community unrestricted by time, place, or classroom constraints" (Mayadas, 1997, p. 2). However, changes in educational efforts raised questions about the quality of online learning, and whether the knowledge or skills obtained were similar to face-to-face education. There is a common belief that since most online learning is theoretical, it is difficult for students to effectively apply what they learn to their daily lives (Dhawan, 2020).

Before COVID-19, teaching and learning took place in physical settings where students and instructors interacted directly. The change in learning methods became a concern among educators and learners who were unprepared for the change and realised that adapting to online learning might take time. There is a consensus that the new learning environment was significantly difficult for students to adapt to (Kapasia et al., 2020). The following section reviews the literature to show various challenges that hindered the learning process, resulting in decreasing or low academic performance and affecting the quality of students' learning (Barrot et al., 2021). Therefore, the present research delved into the difficulties of online learning experienced by IIUM Malay undergraduates during the global COVID-19 pandemic by utilising semi-structured interviews.

Internet Connection

The most important requirement for online learning is a stable internet connection to connect students with lecturers and friends, download learning materials of several forms, and utilise educational platforms and resources. According to Chung et al. (2020), Ismail et al. (2020), and

Mustapha et al. (2021), unstable and poor internet access remains the biggest obstacle for students around the world and hinders receiving good learning. In a study conducted by Rizvi and Nabi (2021), poor network and slow data were reported as a challenge that led to frozen screens and unclear audio and made students unable to understand the lecture or perhaps lag behind their counterparts (Ferri et al., 2020; Ilias et al., 2020; Ramli et al., 2020; Rashid et al., 2021).

There are several reasons for poor internet access, such as geographical location. Rural areas in Malaysia have an underdeveloped technological infrastructure (Ismail et al., 2020). A study by Farooq et al. (2020) argued that students living in rural areas had difficulty downloading large files and streaming video lectures. In another study, students expressed concern about not being able to submit their assignments on time (Tanveer et al., 2020).

This study shows that issues related to the internet connection were one of the challenges during online learning. Dam, one of the participants, mentioned that internet connection problems affected his study, especially when his device's screen froze or the audio was unclear. In this regard, he said, *"When there was a connection problem, the screen froze, and I sometimes missed the whole lecture."*

Similarly, Izz struggled with internet connection problems, which made her miss important lecture notes, even if the interruption lasted for a few minutes. She also stated that a poor internet connection affected her assignment submission leading to the deduction of marks.

> *Poor internet connection affected the submission of my assignments. Unfortunately, once the internet was very slow and stopped working while I was sending an assignment. I ran out of time, and the submission time expired. When I contacted the lecturer to justify, I was told that it was my fault. I was allowed to submit it again but with a deducted mark.*

When there was a complete lockdown to curb the spread of the pandemic, cybercafes were not open, and this situation prevented the students from overcoming the problem by finding an alternative.

For Khai, when the internet connection problem occurred, he could not search or download necessary learning materials. He described his struggle with the internet connection as follows:

> *When I studied online, it was hard to find the required resources and materials I needed to complete my assignments. Finding authentic references took time while the internet was so slow or unstable. Sometimes I had to look for a place with a better connection, even if it was far away from home. I went to a library four days a week, which was approximately 10 km away from my house. I just needed to search for resources for my assignments.*

Thus, an unstable internet connection represented one of the challenges during e-learning period. The participants faced problems attending online classes smoothly and searching for learning resources and materials effectively. They missed some parts of the online lessons because poor internet connection made the audio unclear or kicked them out of the class meeting.

Besides, overcoming the problem required extra time and cost, as some participants stated that they had to find another place for better internet access.

Technological Devices

Having good internet coverage is insufficient without possessing a technological device. These two elements are complementary to effective online learning. In this sense, in the absence of technological devices, such as computers, laptops, or mobile phones, students lose their learning opportunities (Dhawan, 2020; Jaradat & Aljouni, 2021; Xhelili et al., 2021). It is important to mention that not all students had a device when online education first started (Khobragade et al., 2021). Nor were they competent in ICT; as a result, when a device malfunctioned, they were unable to continue attending classes or completing tasks (Cabual & Cabual, 2022).

In addition, some students had old devices that needed updates or technical support to receive or download learning materials. In one study, students pointed out that having unsupported devices was one of the difficulties in online learning. Some of the students were unable to access their final exam papers because their devices needed technical support to access the required documents (Mahyoob, 2020).

Students residing in rural areas had to travel great distances to the city to have their laptops repaired because there were no technical services in their place. Furthermore, low-income families could not afford to provide a device for each child or purchase devices with higher technical features. For this reason, many school students in the same family shared one device (Zainol et al., 2021).

Similarly, in this study, participants identified several problems related to technological devices. Some of them shared a device with their siblings since they did not have their own. They also struggled with technical issues or failures, such as jamming devices. Khai, for example, crashed his laptop, causing him to lose his assignment, which he had to re-do from scratch. He described his experience in the following excerpt.

> *My laptop used to jam or shut down by itself. Sometimes, I was fortunate to retrieve my documents, but it happened that I re-did one assignment from scratch because my laptop suddenly stopped working.*

Riff, another participant, used his mobile to join class meetings, but the mobile often jammed and lacked the necessary technical features to upload or download learning materials of different forms.

> *I used my mobile phone to join class meetings, but it did not help in sending or receiving learning resources. The worst situation was when the mobile's temperature went high. Then, it jammed, and sometimes it froze.*

E-learning requires students to deal with a significant number of electronic documents, which take up a lot of space on the device's memory. In this study, limited memory capacity was mentioned as a barrier to quick and easy access to the necessary learning resources.

Thus, issues related to technological devices affected the online learning process. Sharing a computer or laptop with others can create further problems. For example, students cannot access learning materials at any time or place. They would miss some class sessions if their siblings were required to attend a class for an exam. Furthermore, learning on a mobile phone is ineffective due to the small screen size, and some mobiles lack the technical features necessary for electronic documents or materials.

Limited Social Interaction

The learning process entails student-student and student-instructor interaction which enhances the understanding of learning material. However, this interaction dramatically decreased with online learning due to physical distance. In a study by Adarkwah (2021), most university students in Ghana described online learning as ineffective due to the lack of interaction with instructors, which hindered them from receiving timely feedback. Furthermore, due to the absence of interaction, students were hesitant to raise questions and get feedback from the teacher (Azmat & Ahmad, 2022). According to Subedi et al. (2020), students did not interact well and could not understand the content presented by teachers online. The situations made it difficult for pupils to acquire excellent educational chances.

Previous research confirmed that students had difficulty communicating online since most participants stated there was no direct supervision or interaction. When they were given a group assignment, engagement with group members remained ineffective, especially for students who resided in different time zones (Wildman et al., 2021). Wut and Xu (2021) discovered in their research that students were uncomfortable communicating with groupmates to accomplish group assignments since they did not know each other (Azmat & Ahmad, 2022; Jha and Indiran, 2021). According to Nassr et al. (2020), completing group assignments was difficult because students found it hard to get to know their group members to coordinate and divide tasks. Moreover, inconsistent internet connection for some members created further challenge to engage online.

Qurr, one of the participants, described that online interaction with classmates or group members was not easy. She commented, *"Based on my experience, doing group work online with students I did not know opened the door for them to be free riders."*

As the participants did not reside in the same geographical area, they agreed that the interaction with friends was further restricted by the difference in time zones, particularly while working on a group project. Dam, one of the participants, experienced difficulties interacting with his group members since some were staying in China. In this regard, he commented:

> *During the pandemic, I organized discussion meetings through Google Meet, Zoom, or WhatsApp video calls, but I had to consider the difference in time zone.*

Working with local groupmates would be easier to interact with, as we would be residing in the same time zone. Based on my experience, communicating with international students, especially from China, was difficult because we had different time frames. Besides, students in China did not access certain websites or apps; they had to use a VPN. When I sent them a message to ask a question, they replied very late.

It was also found that getting a late response from instructors hampered assignment progress. Students stated that they required permission from their lecturers to continue with a given topic. Nat, one of the participants, did not receive a response from the instructor. He called him to respond to an email requesting permission for a chosen topic to progress with his project, but he did not receive a response, so he was forced to begin the assignment late. The same thing happened to Khai.

I could not speak to the lecturer during the class meeting since I was experiencing sound issues on my device due to a poor internet connection. Then I wrote an email and a WhatsApp message asking for clarification. Unfortunately, the instructor responded 30 minutes later, which disrupted my work on my assignment.

Thus, online learning reduces interaction between students and instructors, as well as between students and their peers. Time zone differences further limited the necessary communication. Free riders were involved when working on a group task. Late feedback or reply from instructors affected the progress of learning and doing assignments.

Distracting Learning Environment

To combat the spread of COVID-19, the Malaysian government imposed a Movement Control Order (MCO), which restricted individuals from leaving their houses. Meanwhile, pupils, as well as their parents and siblings, remained at home. As a result, they were exposed to a variety of environmental disturbances.

A distracting environment impairs students' ability to concentrate in online classes (Cabual & Cabual, 2022). A study conducted by Ismail et al. (2020) found that many students from low-income households lived in low-cost areas with limited rooms. Thus, they shared a room with other family members. Lack of a private place or suitable setting for studying made some students lose interest in continuing their online education (Nassr et al., 2020).

Parents play a significant role in the family, but sometimes they are unaware of their responsibilities during online education (Al-Kumaim et al., 2021). According to Baticulon et al. (2021), the house environment emerged as one of the biggest challenges during online learning, and students needed to understand their responsibilities as children and students. However, home-related issues could be unavoidable due to task conflicts caused by daily household activities,

family obligations, or personal responsibilities (Idris et al., 2021). Thus, environmental disturbances can threaten online learning (Barrot et al., 2021; Mustapha et al., 2021).

In the present study, struggling with a distracting environment during online learning was reported as a challenge. The students described household noise as disturbing and it made them lose focus. Not every student had private rooms in which to attend classes. The disturbance occurred when they shared rooms. Liah talked about her experience in the following excerpt.

My siblings and I had to attend online classes at the same time. I could hear the voice of my sister's teacher, but my sister did not like wearing earphones. A loud voice disturbed me, and I could hardly listen to my lecture. In such situations, I literally could not focus.

Izz had a big family, but she did not have her own room. She described her situation in the following excerpt:

I have six siblings, so it would be impossible to have a private room. It was very difficult to exist in a quiet place as my brothers and sisters kept going in and out while I was attending online classes. I was surrounded by direct and indirect noise.

Some students expressed that they could not distinguish between their roles at home, as children and as students. Their home environment and its typical routine always dragged them to household tasks. For example, their parents asked them to help with housework even during class hours. Most of the participants pointed out that they were requested to leave the class meeting to attend to household responsibilities, such as cooking, doing laundry, or entertaining their siblings. For them, the clash in roles was annoying and distracting. Nat said that she had to juggle between family and online learning.

My parents, I believe, were unable to understand the real situation. They assumed that as long as I was at home, I had free time and could do anything they wanted, even if I was taking an online class. I was requested to do a variety of tasks and assist others. Then I had to leave the class meeting and return after I performed the task. I was struggling at the time since I needed to adjust to online study, and I was required to help around the house. I felt that I had to meet my responsibilities as a child and a student.

In summary, online education requires a comfortable learning environment. The circumstances of COVID-19 made "home" the most common learning destination for students all over the world. The findings of this study revealed that home involved various distractions, which affected the quality of learning. According to the participants, it was challenging to carry out their dual roles as students and children at the same time. It was clear that their parents did not take online learning seriously. The family atmosphere and daily activities were distracting factors. The participants were sometimes forced to give priority to family rather than online classes.

Physical and Mental Health

The sudden spread of COVID-19 around the world resulted in a hasty transition from face-to-face classes to online instruction. According to Mustapha et al. (2021), a lack of meticulous preparation and tactics for online learning made students less engaged and excited. Demotivation was also caused by limited social connection, a mismatch between reality and expectation, and organizational challenges (Esra & Sevilen, 2021). A study highlighted that study load increased with online learning (Irawan et al., 2020). Long-time exposure to screens negatively affected students' physical and mental health. Headaches, migraines, and deteriorating eyesight problems were among the cited health problems (Hashish et al., 2022; Subedi et al., 2020). Also, prolonged sitting and screen time led to back pain (Idris et al., 2021).

Students usually face unpredictable obstacles during online learning, leading to stress and anxiety. A study revealed that more than half of the participating students experienced stress (Al-Kumaim et al., 2021), which eventually made their interest in studying decline (Irawan et al., 2020). Students' stress increased because they struggled to concentrate and comprehend information (Xhelili et al., 2021), and when they thought about the future of their education (Clabaugh et al., 2021). Eventually, negative psychological status affected their final exam performance (Xhelili et al., 2021).

The results of this research also showed that the students' problems with online learning affected their physical and mental health. They suffered from fatigue, stress, and frustration. Dam, for instance, described his experience as follows:

> *My online classes continued from morning to evening, so I became tired easily. My head and eye hurt because of looking at the screen for a long time. I had a headache and sometimes a migraine. My back pain also developed because of prolonged sitting. Such a situation frustrated me and made me less focused. I also suffered from stress when the workload increased, especially when the subject was not a core course.*

Fia also suffered from some health issues. As she said, *"Online learning affected my vision. I am farsighted, but online learning forced me to look at the screen for such a long time that it worsened my vision."*

Thus, the study investigated the challenges IIUM undergraduates faced during online learning and identified that inefficient internet access, outdated gadgets, limited social interaction, distracting learning environment, and physical and mental health issues negatively affected their online education. The main problem noted by all participants was the unstable internet connection, as online learning cannot function properly without stable internet access.

Discussion

This study investigated the challenges of online learning, which were lived realities among IIUM Malay undergraduates who believed that the shift to online learning mode happened too fast that

they were not able to prepare for it. Figure 1 shows the challenges discussed in the paper. The following section discusses the research findings considering previous studies.
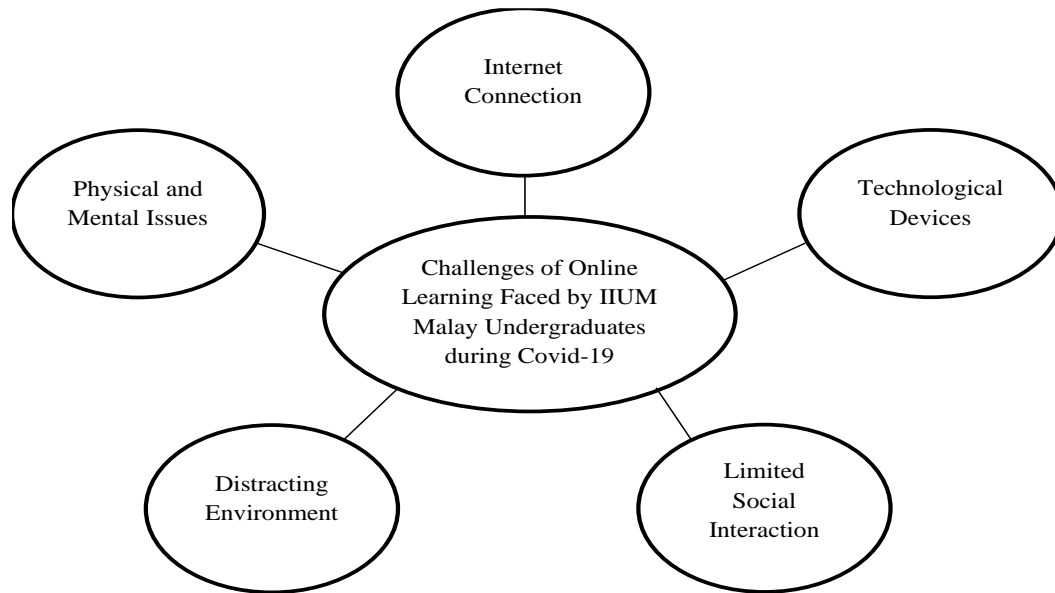
Internet Connection

Physical and Mental Issues

Technological Devices

Challenges of Online Learning Faced by IIUM Malay Undergraduates during Covid-19

Distracting Environment

Limited Social Interaction

Figure 1: Research Design of the Challenges of Online Learning Faced by IIUM Malay Undergraduates during Covid-19

One of the challenges was the slow or limited internet connection. This condition is similar to previous research that identified internet access as an issue in various countries, including India (Chung et al., 20201; Ismail et al., 2020; Rizvi & Nabi, 2021). Class meetings require fast internet; otherwise, issues such as frozen screens and broken sounds interrupt students' learning.

The study also showed that accessing a good internet network depends on geographical location. Rural areas lack efficient communication infrastructure. Consequently, the students were left behind in terms of education. Similarly, several studies claimed that internet problems occurred in rural areas (Farooq et al., 2020; Ismail et al., 2020; Ramli et al., 2020). On the other hand, the findings from the current study showed that even the participants who lived in Kuala Lumpur, an urban area in Malaysia, experienced connection problems. In the new era of education, the Malaysian government should play a significant role in improving the infrastructure and facilities of information and communication technology in rural areas.

The study also found that the students had to handle difficulties with the devices they used for online learning. According to Khobragade et al. (2021), technological issues in online learning can be explained in terms of the availability and non-availability of devices. Students cannot participate in online education without a device. In addition, devices should function properly because using old devices may cause problems related to memory capacity or lack of technical support. This is similar to the conclusion of a study by Mahyoob (2020) that said unsupported devices were an obstacle to students during online learning. Dhawan (2020) also suggested that having a proper device is crucial during online learning; otherwise, students will lose the opportunity to learn, especially during the pandemic that shifted the learning medium.

Besides the problems related to internet connection and devices, the study discussed the impact of limited social interaction. Student-student interaction was found difficult among local students and international students who lived in different time zones. This finding is consistent with the research of Wildman et al. (2021), which showed that students living in different time zones found it challenging to interact with their classmates during online classes.

Lack of interaction with instructors prevented the students from getting the necessary feedback to receive a clear understanding of certain instructions, affecting students' progress in doing assignments. According to Adarkwah (2021), a lack of interaction between lecturers affected the effectiveness of online learning (Adarkwah, 2021).

When the students talked about interaction, they did not consider communication with their peer students only. They also reflected on their interaction with instructors, which is a requirement for a better online learning experience. Since online learning interrupted face-to-face interactions, it was one of the reasons affecting academic performance. For example, a late response from an instructor could delay the progress of a student's work. There is a need for further research to comprehend the pattern of communication between students and instructors during online learning to highlight the gaps that need to be filled in the future. There is also a need to consider the perspectives of educators on students' interaction during online learning.

When the students stayed home, the learning environment was confused with the family atmosphere, leading to further physical and psychological challenges. Physically, securing a private, quiet place for studying was difficult because some belonged to large families. Also, the economic status of some families did not help in overcoming this issue. As a result, the students suffered from small space, noise, and clash of roles.

Research has shown that family noise affects online learning (Barrot et al., 2021). Malay families are typically large, so it is common for them to share rooms. According to the participants, they had to share rooms with their siblings and attend classes at the same time. As mentioned earlier, students suffered from the clash in their roles while attending classes from home. According to Baticulon et al. (2021) and Mustapha et al. (2021), a child's responsibilities at home were a barrier to an effective online learning experience. The participants in this study struggled to balance their responsibilities as students and children. Some admitted that they had to leave the class meeting to carry out some household chores. Taking the structure of the Malay family into consideration, children are expected to help around the house and its part of carrying out Islamic values as respect and helping their parents.

Some parents did not have a full understanding of the requirements of online learning so did not take it seriously. They thought that as long as their children were at home, they would provide help at any time. Further research is needed to investigate parents' roles during online learning.

Furthermore, participants in the current study were found to be struggling physically and mentally. Online learning causes back pain due to prolonged sitting and eyesore due to excessive screening time. Esra and Sevilen (2021) found that students found themselves unmotivated with online learning due to the mismatch between reality and expectation. At the beginning of

COVID-19 changes from physical learning to online learning, students thought the new online teaching and learning method would be simpler and more comfortable than physically attending the class because they do not need to walk far to attend class since they could sit in their room and attend the class directly. However, the findings from the current study showed the reality students face in online learning is challenging for them because facing a screen for a longer time and prolonged sitting causes backpain.

Besides that, Al-Kumaim et al. (2021) also found that students tend to develop stress due to the increasing workload and longer screen time. In sequence with the current study, students developed stress due to the increase in workload that is not even one of the core subjects in students' fields. Overall, online learning is not simple since it challenges students physically and mentally, making the journey of online learning harder. Among IIUM students, it has become a habit during the physical learning time where students will do morning walk exercises, visit the library, or swim at the facilities areas after a long learning period. But during online learning, students stayed at home and were hindered from going outside since it was during the lockdown period. Due to this, students lost all these facilities which played an important role in keeping them healthy and fit.

This study is also built upon a previous investigation conducted by Yunus and Eid (2022) into how undergraduates cope with online learning. Research indicates that controlling the surroundings by moving students can aid their concentration in class and address environmental issues. In addition to that, by conversing with others about their problems, students can lessen the weight of workload stress, and engaging in activities like watching a movie or going for a walk can provide a much-needed respite from academic stress, benefiting them both physically and mentally.

Conclusion

This research investigated the difficulties the Malay undergraduate students at the International Islamic University Malaysia (IIUM) encountered while studying via online learning during the global outbreak of COVID-19. The rapid changes in learning mode exposed students to challenges related to the basic elements of online learning, including internet connection, technological devices, social interaction, learning environment, and physical and mental health. This paper discussed these issues taking into consideration the student, family, instructors, and the Malaysian Ministry of Education. It presented the experiences of learners, and concludes that further research is needed to investigate the experiences of families and accountable individuals, such as instructors. The challenges created uncertainties among the students in terms of the quality of the education they received online. The paper attempted to provide a sociological understanding of their experiences. However, it had several restrictions. The participants were Malay students from Malaysia, so there is a need for further research, including the international students who were stranded in their home countries. In addition, the sample size is small and this limits data collection.

E-learning has been experienced by a large number of students all over the world, and it appears to be a widely accepted and maybe preferred mode of learning. Presenting the challenges does not mean a call for suspending this learning method. Rather, there is an urgent need to address possible issues because universities in various countries have amended their policies to make physical and online learning available options. Online learning may become more popular among students in Malaysia universities, which have long served as educational centers.

References

Adarkwah, M. A. (2021). "I'm not against online teaching, but what about us?": ICT in Ghana post Covid-19. *Education and Information Technologies, 26*(2), 1665–1685. https://link.springer.com/article/10.1007/s10639-020-10331-z

Azmat, M., & Ahmad, A. (2022). Lack of social interaction in online classes during Covid-19. *Journal of Materials and Environmental Science*, *13*(2), 185–196. https://www.jmaterenvironsci.com/Document/vol13/vol13_N2/JMES-2022-13015-Azmat.pdf

Barrot, J. S., Llenares, I. I., & Del Rosario, L. S. (2021). Students' online learning challenges during the pandemic and how they cope with them: The case of the Philippines. *Education and Information Technologies, 26(*6), 7321–7338. https://link.springer.com/article/10.1007/s10639-021-10589-x

Baticulon, R. E., Sy, J. J., Alberto, N. R. I., Baron, M. B. C., Mabulay, R. E. C., Rizada, L. G. T., ... & Reyes, J. C. B. (2021). Barriers to online learning in the time of Covid-19: A national survey of medical students in the Philippines. *Medical Science Educator, 31(*2), 615–626. https://link.springer.com/article/10.1007/s40670-021-01231-z

Cabual, R. A., & Cabual, M. M. A. (2022). The extent of the challenges in online learning during the Covid-19 pandemic. *Open Access Library Journal, 9(*1), 1–13. https://www.scirp.org/journal/paperinformation?paperid=114733

Chung, E., Subramaniam, G., & Dass, L. C. (2020). Online learning readiness among university students in Malaysia amidst Covid-19. *Asian Journal of University Education, 16(*2), 45–58.

Clabaugh, A., Duque, J. F., & Fields, L. J. (2021). Academic stress and emotional well-being in United States college students following onset of the Covid-19 pandemic. *Frontiers in Psychology, 12*, 628787.

Dhawan, S. (2020). Online learning: A panacea in the time of Covid-19 crisis. *Journal of educational technology systems, 49(*1), 5–22.

Esra, M. E. Ş. E., & Sevilen, Ç. (2021). Factors influencing EFL students' motivation in online learning: A qualitative case study. *Journal of Educational Technology and Online Learning, 4(*1), 11–22.

Farooq, F., Rathore, F. A., & Mansoor, S. N. (2020). Challenges of online medical education in Pakistan during Covid-19 pandemic. *Journal of College of Physicians and Surgeons Pakistan, 30(*6), 67–69.

Ferri, F., Grifoni, P., & Guzzo, T. (2020). Online learning and emergency remote teaching: Opportunities and challenges in emergency situations. *Societies, 10(*4), 1-18. https://www.mdpi.com/2075-4698/10/4/86

Gaol, F. L., & Hutagalung, F. (2020). The trends of blended learning in South East Asia. *Education and Information Technologies, 25(*2), 659–663.

Hashish, A., Aly, E., Baatiah, N. Y., Bashaweeh, A. H., & Kattan, A. M. (2022). The online learning experience and reported headaches associated with screen exposure time among Saudi health sciences students during the Covid-19 pandemic. *BMC Medical Education, 22(*1), 1–13.

Idris, F., Zulkipli, I. N., Abdul-Mumin, K. H., Ahmad, S. R., Mitha, S., Rahman, H. A., ... & Naing, L. (2021). Academic experiences, physical and mental health impact of Covid-19 pandemic on students and lecturers in health care education. *BMC Medical Education, 21(*1), 1–13.

Ilias, A., Baidi, N., Ghani, E. K., & Razali, F. M. (2020). Issues on the use of online learning: An exploratory study among university students during the Covid-19 pandemic. *Universal Journal of Educational Research, 8(*11), 5092–5105.

Irawan, A. W., Dwisona, D., & Lestari, M. (2020). Psychological impacts of students on online learning during the pandemic Covid-19. KONSELI: *Jurnal Bimbingan dan Konseling (E-Journal), 7(*1), 53–60.

Ismail, N. S., Bakar, N. A., & Wafa, S. W. W. S. S. T. (2020). Online learning challenges during pandemic COVID-19 in Malaysian higher learning institution. *Universal Journal of Educational Research, 8(*12), 7151–7159.

Jaradat, S., & Ajlouni, A. (2021). Undergraduates' perspectives and challenges of online learning during the covid-19 pandemic: A case from the University of Jordan. *Journal of Social Studies Education Research, 12(*1), 149–173. https://files.eric.ed.gov/fulltext/EJ1292899.pdf

Jha, A., & Indiran, L. (2021). Merit and challenges of online teaching in India and Malaysia. *International Journal of Academic Research in Progressive Education and Development, 10(*2), 1110–1123.

Kapasia, N., Paul, P., Roy, A., Saha, J., Zaveri, A., Mallick, R., Barman, B., Das, Prabir., ... & Chouhan, P. (2020). Impact of lockdown on learning status of undergraduate and postgraduate students during Covid-19 pandemic in West Bengal, India. Children and Youth Services Review, 116, 105194 . https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7308748/

Khobragade, S. Y., Soe, H. H. K., Khobragade, Y. S., & bin Abas, A. L. (2021). Virtual learning during the Covid-19 pandemic: What are the barriers and how to overcome them?. *Journal of Education and Health Promotion, 10*. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8552260/

Al-Kumaim, N. H., Mohammed, F., Gazem, N. A., Fazea, Y., Alhazmi, A. K., & Dakkak, O. (2021). Exploring the impact of transformation to fully online learning during Covid-19 on Malaysian university students' academic life and performance. *International Journal of Interactive Mobile Technologies, 15*(5), 140-158. https://online-journals.org/index.php/i-jim/article/view/20203

Mahyoob, M. (2020). Challenges of e-learning during the Covid-19 pandemic experienced by EFL learners. *Arab World English Journal, 11(*4). 351-362. https://files.eric.ed.gov/fulltext/EJ1287713.pdf

Mayadas, F. (1997). Asynchronous learning networks: A sloan foundation perspective. *Journal of Asynchronous Learning Networks, 1(*1), 1–16.

Ministry of Higher Education. (2019). National Education Philosophy. https://www.moe.gov.my/en/dasarmenu/falsafah-pendidikan-kebangsaan

Mustapha, R., Mahmud, M., Burhan, N. M., Awang, H., Sannagy, P. B., & Jafar, M. F. (2021). An exploration on online learning challenges in Malaysian higher education: The post COVID-19 pandemic outbreak. *International Journal of Advanced Computer Science and Applications, 12(*7). 391-398.

Muthuprasad, T., Aiswarya, S., Aditya, K. S., & Jha, G. K. (2021). Students' perception and preference for online education in India during Covid-19 pandemic. *Social Sciences & Humanities Open, 3(*1), 100101.

Nassr, R. M., Aborujilah, A., Aldossary, D. A., & Aldossary, A. A. A. (2020). Understanding education difficulty during Covid-19 lockdown: Reports on Malaysian university students' experience. IEEE Access, 8, 186939–186950.

Ramli, M. F., Majid, M., & Badyalina, B. (2020). Impeding factors towards the effectiveness of online learning during Covid-19 pandemic among social sciences students. *International Journal of Learning and Development, 10(*4), 37.

Rashid, M. A. A., Othman, M. N. A., & Yusop, Z. M. (2021). Online learning issues and challenges during Covid-19 pandemic: A case study at a private university college. *International Journal of Advanced Research in Education and Society, 3(*2), 50–57.

Rizvi, Y. S., & Nabi, A. (2021). Transformation of learning from real to virtual: An exploratorydescriptive analysis of issues and challenges. *Journal of Research in Innovative Teaching & Learning ,14(*1), 5-17.

Shahabadi, M. M., & Uplane, M. (2015). Synchronous and asynchronous E-learning styles and academic performance of E-learners. *Procedia-Social and Behavioral Sciences, 176*, 129– 138. https://www.sciencedirect.com/science/article/pii/S1877042815004905

Subedi, S., Nayaju, S., Subedi, S., Shah, S. K., & Shah, J. M. (2020). Impact of E-learning during Covid-19pandemic among nursing students and teachers of Nepal. *International Journal of Science and Healthcare Research, 5(*3), 68–76.

Tanveer, M., Bhaumik, A., Hassan, S., & Haq, I. U. (2020). Covid-19 pandemic, outbreak educational sector and students online learning in Saudi Arabia. *Journal of Entrepreneurship Education, 23(*3), 1–14.

Wildman, J. L., Nguyen, D. M., Duong, N. S., & Warren, C. (2021). Student teamwork during Covid-19: Challenges, changes, and consequences. *Small Group Research, 52(*2), 119–134.

Wut, T. M., & Xu, J. (2021). Person-to-person interactions in online classroom settings under the impact of Covid-19: A social presence theory perspective. *Asia Pacific Education Review, 22(*3), 371–383. https://link.springer.com/article/10.1007/s12564-021-09673-1

Xhelili, P., Ibrahimi, E., Rruci, E., & Sheme, K. (2021). Adaptation and perception of online learning during Covid-19 pandemic by *Albanian university students. International Journal on Studies in Education, 3(*2), 103–111.

Yunus, N. A., & Eid, I. M. (2022). Coping strategies IIUM Malay undergraduate students adopted to proceed with online learning during COVID-19. *IIUM Journal of Religion and Civilisational Studies*, 5(2), 243-258.

Zainol, S. S., Hussin, S. M., Othman, M. S., & Zahari, N. H. M. (2021). Challenges of online learning faced by the B40 income parents in Malaysia. *International Journal of Education and Pedagogy, 3(*2), 45–52.