

# Findings From A Qualitative Study of the Experiences and Challenges Private Virtual University Students had with E-Learning During the Covid-19

Bha-Aldan Mundher Oraibi and Nursyahirah Adilah Binti Shahrul Nizam

UNITAR International University Tierra Crest, Jalan SS 6/3, Ss 6, 47301 Petaling Jaya, Selangor, Malaysia

To Link this Article: <http://dx.doi.org/10.6007/IJARPED/v13-i3/21600>

DOI:10.6007/IJARPED/v13-i3/21600

*Published Online:* 10 August 2024

## Abstract

The aim of this research is to identify the challenges related to online learning encountered by postgraduate students who started all coursework in an online mode (modular) prior to the COVID-19 and continued their e-learning during the pandemic at a private virtual university offering pre-university, undergraduate and postgraduate programmes in conventional and online distance-learning. This study employed a qualitative method using individual interviews with postgraduate students from UNITAR International University. Data were analysed through the utilization of a full verbatim protocol. Our findings suggest that the stakeholders (i.e. postgraduate students) adapted well to the change associated with the COVID-19 pandemic. The stakeholders identified both positive and negative aspects of online learning. Prior to the COVID-19 pandemic, the stakeholders had the opportunity to experience online learning. This helped them adjust to the shift to distance learning in light of the pandemic and form well-informed opinions about how to best continue learning, regardless of how the pandemic played out. A comprehensive analysis of the interview data reveals several challenges to the e-learning effectiveness. These challenges are relating to the online collaborative learning, the type of communication in terms of the interaction with instructors and with other students, and barriers to adopting new technology. The implications discussed in this study will help higher education stakeholders be more equipped for any such changes similar to those that accompanied Covid-19 and will provide instructors and students with the tools they need to make the most of their education and maintain continuity of learning.

**Keywords:** E-Learning, Challenges, Higher Education, Qualitative Research, Virtual University

## Introduction

E-learning is the use of electronic learning resources and techniques to improve the process of learning and instruction (Boateng et al., 2016). Perhaps the most popular mode of teaching and learning at the moment is e-learning, which is a major technical advancement in

education. Many colleges and universities were forced to incorporate e-learning technology into the curriculum in the midst of the COVID-19 pandemic. E-learning continues to establish itself as the cutting-edge approach to improving the transformation process of knowledge in a variety of educational fields. Examples of such technologies involve Web CT, Web 2.0 platforms, Blackboard, and Moodle (Salloum et al., 2019; Zalat et al., 2021), including social network tools and cloud computing (Aburagaga et al., 2020). A range of e-learning descriptions using various terminology were presented in the published scholarly research. Optimizing e-learning's ability to enhance the overall experiences of both instructors and learners alike is a crucial area that requires careful thought.

E-learning, according to Abed (2019), is a broad term for the dissemination of instructional materials to learners through media and its networks in an approach which enables them to actively engage with the material. Features allowing synchronous or asynchronous communication between learners and their peers as well as among learners and the facilitators should be included in the kind of e-learning tools that are employed. Furthermore, it must be feasible to do learning tasks in the time allotted by the facilitators, at a pace appropriate for the circumstances and the course's learning outcomes (Abed, 2019).

Because an e-learning and face-to-face approaches differ, there will be differences in the experiences of learners and instructors. Therefore, in order for learners to get the most out of an e-learning approach, they need to be prepared for online learning (Engin, 2017). Technical, learning, and time management abilities, as well as having access to the internet, are all components of online learning readiness, which affects both the experiences of learners and instructors in the classroom. Due to the COVID-19 pandemic, colleges and universities closed globally in an effort to stop the virus's spread. As a result, colleges and universities in Malaysia quickly turned to e-learning as a way for learners to complete their education during the pandemic (Jafar et al., 2022; Loganathan et al., 2021). In addition to keeping students at school amid the early phases of the pandemic, the abrupt shift of teaching and learning activities to online platforms was done to prevent large crowds, who might have been a danger factor for the virus's transmission. Fully online learning was globally mandated under COVID-19 pandemic procedures, which required instructors as well as learners to work remotely globally (Loganathan et al., 2021). Different online platforms have been utilized in Malaysia, including Moodle-based learning management systems, Google Meets, Microsoft Teams, and Zoom (Rad et al., 2021; Zalat et al., 2021).

Higher education is undergoing rapid transformation to address the diverse needs of various stakeholders, which include educators, learners, and administrators. Al-Fraihat et al. (2020) have proposed that when information systems align with the requirements of users, their satisfaction naturally increases. Consequently, research has established that user satisfaction serves as a crucial metric for evaluating the success of information systems (Andrade et al., 2020). Today, most universities, both private and public, had adopted full online instruction. With the help of modern technology, the e-learning mode provides flexibility. As a result, many students are drawn to online teaching and learning for increased learning experiences. E-learning is expanding in Malaysian colleges and universities, according to Jafar et al. (2022), and problems experienced by learners and instructors predate the COVID-19 pandemic. Inadequate infrastructure, including insufficient computer labs, unreliable internet

connectivity, and frequent blackouts of electricity, has been recognized as a challenge to e-learning (Jafar et al., 2022). Additional difficulties included a dearth of e-learning policies, insufficient IT assistance, including a lack of managerial support at the university (Zalat et al., 2021; Loganathan et al., 2021). The learners pointed at how their attention spans tended to shorten following the changes, and instructors discussed how hard it had been to maintain the students' involvement and attentiveness (Rad et al., 2021). Another significant problem was the discernible decline of in-class contributions. In a similar vein, it has been demonstrated in previous research that one of the greatest hurdles instructors confront while providing instruction online is keeping up the level of interaction and engaging learners (O'Doherty et al., 2018). This challenge is further compounded whenever technical issues arise (Rad et al., 2021). While formulating e-learning policies in order to improve the outcomes of education (Palvia et al., 2018), emphasizes the need to take into account the adverse consequences of technology, which include smartphone addiction. This might be due to the risk smartphone addiction might pose when using e-learning, particularly in emerging economies. Pre-COVID-19, research on the barriers to e-learning had been conducted, primarily with distant learners who were equipped for this mode of education. As a result, when e-learning is suddenly implemented, learners' experience and challenges might vary, particularly if they are enrolled in a full-time, in-person program, as had been witnessed during the initial phases of the COVID-19.

Some students had previously been exposed to e-learning, even though it was not widely utilized in colleges and universities pre-COVID-19. Among such students are UNITAR International University's first-year class of 2020 in Malaysia, the subjects of the study who were instructed in all subjects online (modular). Their perspectives, experiences, and difficulties with e-learning were unknown because no prior investigation had taken place in the study environment. They may have encountered different difficulties and experiences with e-learning than other students who were using the platform during the COVID-19 epidemic, considering this was a rather gradual shift in their learning and assessment approaches. Further research is needed to gain a deeper understanding of the challenges posed by e-learning and the specific strategies learners employ to overcome them (Basar et al., 2021). Thus, the current research was carried out to investigate and characterize the challenges associated with e-learning during COVID-19 among postgraduate students at UNITAR International University who had started their postgraduate programs online (modular) prior to the Covid-19 and continued to do so during the pandemic.

## **Materials and Methods**

### **Study Design**

In this research, a qualitative methodology as outlined by Yin (1994) is employed, involving in-depth interviews with key e-learning stakeholders (i.e., students). The objective is to assess the effectiveness of online learning and the challenges it poses to students' learning capabilities. The utilization of interviews is particularly advantageous because it is well-suited for gaining insights into the diverse perspectives and practices of various e-learning stakeholders, thereby facilitating a comprehensive understanding of what works well or poorly in the realm of e-learning (Yin, 1994). An e-learning ecosystem is a complicated system with several issues. Understanding the views of individual stakeholders (i.e., students) is required to identify and completely comprehend the essential difficulties associated with

students' e-learning for sustainable e-learning. Furthermore, using the interview approach is useful since it allows for the identification of diverse perspectives on the issues that students confront in e-learning. Identifying and comprehending these elements can assist both public and private universities in obtaining feedback on the e-learning process under developing situations, and the findings of this study may be taken into account by decision-makers when defining the future of e-learning.

This research was carried out at UNITAR International University, situated in Petaling Jaya, Malaysia. The university provides a range of postgraduate online programs, including the Postgraduate Diploma in Education (PGDE), Master of Information Technology, Master of Education (Teaching of English as a Second Language), Master of Education (Instructional Technology), Master of Education (Educational Leadership & Management), Master of Education (Early Childhood Education), Master of Business Administration (MBA), Doctor of Philosophy in Information Technology, Doctor of Philosophy in Management, Doctor of Philosophy in Business Administration, Doctor of Philosophy (PhD) in Education, and Doctor of Business Administration (DBA). These programs have consistently received recognition as one of the leading offerings in the Education & Learning category, as evidenced by the public's votes in the Putra Brand Awards. Moreover, these programs have received accreditation from the Accreditation Service for International School, Colleges, and Universities (ASIC) in various aspects, including Quality Assurance and Enhancement, Student Welfare, Marketing and Recruitment, Learning and Teaching, Course Delivery, Management and Staff Resources, as well as Premises and Health & Safety. Additionally, UNITAR International University is highly regarded by employers and has been awarded a 5-STAR QS Rating in various areas, including Teaching, Employability, Online Education, Accounting & Finance, and Inclusiveness.

### **Sampling Strategy and Participants**

The researchers utilized purposive sampling and conducted individual interviews with postgraduate students enrolled in online courses, particularly the Course Networking systems (CN) and UNIEC Virtual Online (UVOL) platforms via Microsoft Teams. One method used in qualitative research to purposefully choose a certain set of people or units to study is called purposeful sampling. Participants are not selected at random, but on purpose. When a certain objective or target is in mind for the researcher, this technique is employed. As a result, the researcher chooses the sample based on the traits or qualities that they intend to investigate. By using purposeful sampling, the researcher may collect detailed information on the research subjects while concentrating on certain areas of interest. It is frequently applied to small-scale studies with tiny sample sizes. Of the participants in the interview, women made up 75% of the group, while men made up 25%.

### **Data Collection Procedures**

Nine people were the subjects of our nine in-depth interviews. We performed individual interviews with each candidate. Interviews were conducted twice with one participant. Five interviews had been carried out face-to-face in Petaling Jaya, Selangor, Malaysia, while the remaining seven had been carried out online via virtual meeting methods (i.e., Microsoft Teams). This was due to the fact that the majority of the study participants are working adults with busy schedules who hail from distant states.

Postgraduate students at UNITAR International University, Malaysia's first private virtual university, which has been providing pre-university, undergraduate and postgraduate

programmes through conventional and online distance learning modes since 1997, participated in the study. Prior to the Covid-19 pandemic, students who had started all of their coursework online and continued their e-learning during the pandemic were interviewed.

Potential participants were notified concerning the research and given a link to the online interview by the researchers. The people taking part had been made aware that they might withdraw from the engagement at any moment and that it was completely voluntary. The interviews were directly transcribed from recordings. Every participant received a code (e.g., R1 for Respondent 1) to hide their identity, and they were asked not to reveal their identity to the other participants at any point throughout the recording. Nine postgraduate students agreed to participate in the study and grant permission for their responses to be recorded. Interview instructions that were semi-structured were created. Guides for semi-structured interviews had been developed.

### **Data Analysis**

English was used during the one to one and a half-hour interviews. A verbatim transcription of the audio recordings was carried out. The additional improvement of the question guides was guided by concurrent analysis. Researchers engaged in frequent discussions to improve codes and discover new themes during the immersive, exploratory, and inductive process of data analysis. The study used Creswell's (2014) methodology for thematic analysis, which involved identifying and reporting themes through five processes, as seen in the figure that follows.

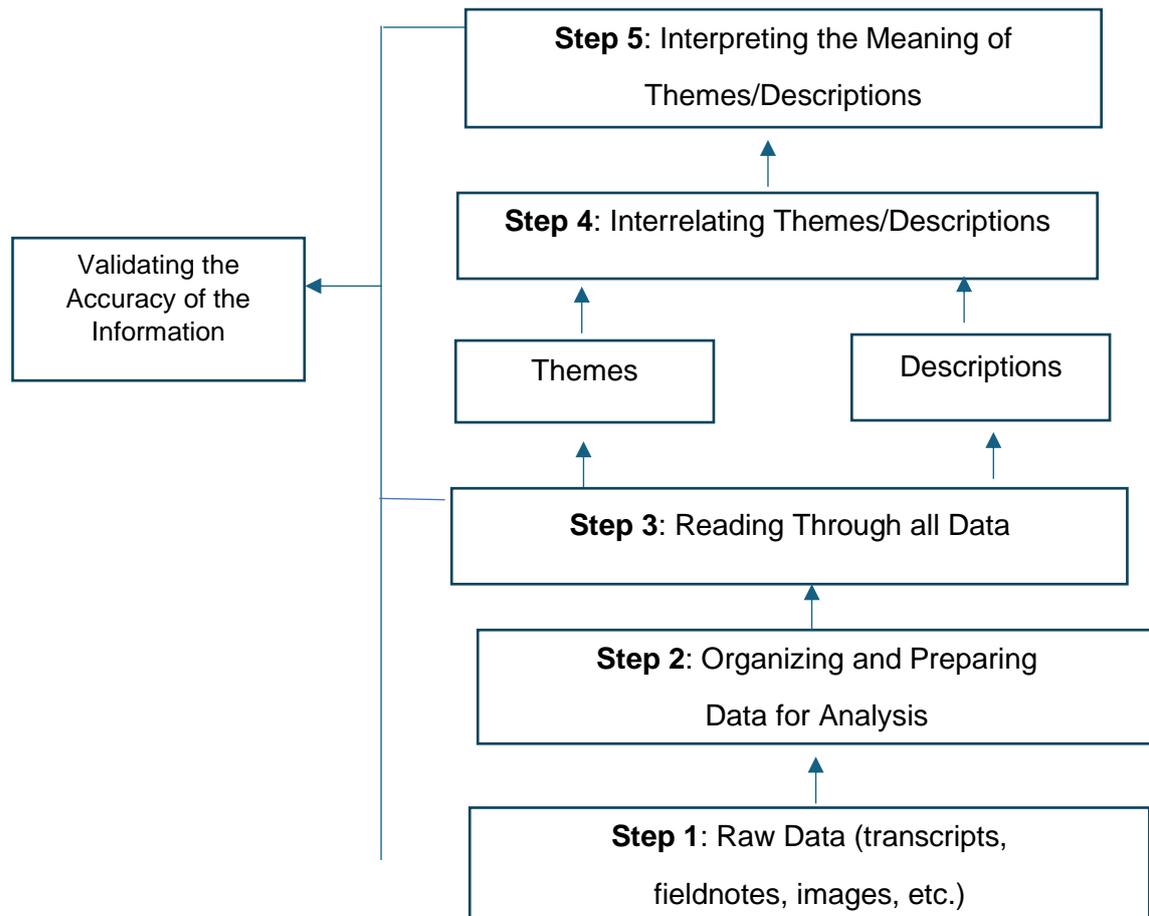


Figure 1: Creswell Model of Qualitative Data Analysis

## Results

Three interrelated themes and sub-themes emerged from the thematic analysis: 1) “Online Collaborative Learning”; 2) “Unidirectional Communication” (two sub-themes: 1) interaction with instructors; 2) Interaction with other students); AND 3) “Barriers to Adopting New Technology”. The three themes and sample quotes from the participants are described in the following sections and have been presented in order of importance, as established by the analysis of the individual interviews.

### Theme 1: Online Collaborative Learning

The interviews aimed to explore the participants’ experience with collaborative online learning. In general, the respondents described their collaborative experience as satisfactory. Effective communication, team members’ sense of responsibility, fair workload distribution, and good management skills were identified as crucial elements for successful collaborative learning. For instance, questions posed during the online interviews included inquiries like, “How do you believe peer interactions influenced your group’s performance in completing assignments?” and “Have you encountered difficulties in comprehending the course materials provided by the instructor?” and “Has work-related commitments affected your concentration on your studies?”.

As a result, in asynchronous distance education, particularly in e-learning programs with limited interactivity, students often experience a sense of isolation from their peers due to time constraint. This feeling of isolation can lead to negative attitudes toward the course and, consequently, a reduction in communication among students. This leniency can lead students who are inadequately prepared for the course requirements or who face other challenges to avoid quick responses to the course instructor or fellow students in the program.

## **Theme 2: Unidirectional Communication**

The research reveals that there is a significant interaction between students and instructors, which appears to be a valuable factor for students. Real-time communication with instructors appears to enhance students' comprehension of their instructors' assignments and guiding concepts. Effective communication, individual responsibility within the team, equitable distribution of tasks, and strong management skills are critical components of successful collaborative learning. However, the study also identifies a drawback in internet-based online programs where the communication process tends to be one-sided, primarily involving the transmission of information from instructors to students. This unidirectional communication approach reduces the level of interaction and engagement that students experience with their instructors.

The findings also reveal that, in text-based online courses, there is typically less pressure to respond promptly. This can lead students who are ill-prepared for the course requirements or facing other challenges to delay or avoid quick responses to the course instructor or fellow students in the program.

### **Sub-Theme 1: Interaction with Instructors**

When participants were asked if there was any lack of interactions with instructors during the online class, they indicated that there was some kind of obstacle that prevented them from interacting collectively. An example of what was mentioned in this regard, one respondent noted, "So normally only the same students are responding to the to the questions". Other participants linked the importance of communicating with the teacher to the nature of the course in terms of the difficulty or complexity of understanding the course content by relying heavily on themselves. For example, one respondent explained, "During the MBA, they expect us to learn by ourselves, which can sometimes be done. It is not very difficult, like for example learning human resource management. Or something easy like managing organization should be OK... things like we can learn on our own, but when you're talking about something technical, more technical like project management or you're talking about accounting or you're talking about... project paper, how to do and the analysis... I mean the university, or the lecturer cannot expect the student to understand by ourselves because we are not well versed in terms of the research analysis or the instruments other than what... whatever that we do not really have the good understanding now... because you're not talking about reading things we can understand. But we're talking about the technical things. There's a challenge there especially for those. Everything is done online."

### **Sub-Theme 2: Interaction with other Students**

Participants shared a mismatch between their expectations regarding interaction with classmates while engaging in e-learning compared to their mainstream non-modular educational experience. For example, one participant had this to say, "Oh yeah, peer

interaction. Limited when all the group members are located far away from each other, compact from compact to my DBA experience where it was a physical, it was physical classes where we can meet all the... Are causing all the.. all the group members, all the classmates right, it was more interactive, of course. OK, so it is more. It was more engaging compared to online. Yes, we still can do it, but it will not be as interactive as what we expect when we do it online”.

When participants were asked if they faced any difficulty with peer interactions and in accessing available information such as those on Customized Virtual Classroom, they responded that yes, they did, but they would be able to overcome it by using some of the means of communication available to them and widely used in the country, such as WhatsApp. An example of what was mentioned in this regard, one respondent replied, “Yeah, I have issues. I currently I do not use it regularly simply because whenever I use, especially if I were to access at home, we have a problem. Accessing Customized Virtual Classroom at home we have also problem accessing from here problem. When further asked how that interactions have been impacting how well their group is able to complete the tasks assigned to them, another respondent remarked, “We have a few different platforms slide by the systems that are prepared by the university and we also have our own WhatsApp group. So, there's no issue. We can have a different... we can set our own timeline”.

Another participant replied when asked how do you think peer interactions using the new LMS, ePortfolio, and learning tools interoperability (LTI) system had an impact on how well one's group in completing the task assignments, “OK, we have a separate uh if once we created a group, we would have a separate WhatsApp group and we would communicate in the group and we would have a frequent meeting every week. There is a compulsory meeting so that we would update our progress in the meeting on the assignment progress or individual progress as well. So, we created a group, so one of the group members must be initiative to put the effort and to be active to push everybody to be reunited, to gather the information, to complete the assignment. Usually, I would create a group and I would push everybody. I would manage my group mates... so far, no issue unless it is the group mates is which we are getting no response from or doesn't give any feedback.”

Another participant responded a little differently when asked by placing the responsibility on the students rather than on the new LMS, ePortfolio, and learning tools' interoperability (LTI) system or the instructors. An example of this is a participant who said, “Yes, sometimes I find it difficult to find things, but then it is actually not their fault. I think it is me that is not well versed enough or, you know, learn much because they have thought this in the orientation. Or an onboarding session, and they have this session. But we do not really use much since we are working adults. Really, use that thing, that platform as much as we should. So that is why I think I admit that, that student mistake for not being able to put more effort into finding things and learn about the system well. But for me, there's no problem with the system”.

The participants also pointed out the individual differences between students in e-learning and how they sometimes see it as positive in their education through the presence of students who have long work experience, which in turn enriches the educational process by transferring that experience from the experienced students to those who are less experienced and younger. Especially if they are in the same group. An example of what was mentioned relating to this, one respondent noted, “I think in terms of growth, no problem, because for all the courses, we really choose our team member well. So, we tend to stick to the same

team member. Us to understand things because some students are quite young, others are working adults joining the online class, we learn from each other.”

### **Theme 3: Barriers to Adopting New Technology**

The study finds that there is an interaction between the students and technology, which may be one of the supportive attributes of the students. For example, the question asked during online interviewed such as, “What are some technical challenges faced by using new system Course Networking for online learning? Have you faced difficulty in communication through the Ms Teams? Do you face difficulty in accessing reliable information, such as using KMC? Consequently, it is crucial that the online learning system and the associated software are designed to be user-friendly. This is especially important due to the varying levels of technological expertise among students. Some students may lack experience with the technology and the new medium used in distance education, which can lead to difficulties and require additional time to overcome adaptation barriers and become proficient in the new technology. The result shows that student need to have a soft skill required on the new Course Networking (CN) system. Technical support was mainly needed to use learning management systems (CN). Respondents indicated that learning management systems (CN) data was not fully updated and making it hard for them to progress well with their learning activities. For online learning to be possible, a reliable and effective educational system must be developed.

### **Discussion and Conclusion**

Although e-learning is not a newly developed phenomenon, it has become more and more popular worldwide over the past ten years, and several universities in developing nations have only started to follow this trend (Bhuasiri et al., 2012). Yet not all countries and societies have embraced this technology equally (Hodgkinson-et al., 2008). The shutdown caused by COVID-19 pushed the creation of a wider range of online learning initiatives in order to ensure that education would continue unhindered. How to provide online course materials, engage students, and carry out assessments has been a topic of discussion among many faculties (Mukhtar et al., 2020). From the interviews conducted with students at UNITAR International University to explore their experience in relation to the challenges they encountered using CourseNetworking (CN), a new LMS, ePortfolio, and a learning tools' interoperability system. It was found that they do not face problems in this regard. Of course, these results contradict those revealed by other studies conducted on students at other universities during the period of the Covid-19 epidemic. This may be due to the fact that the students at those other universities had not undergone e-learning before and therefore were not prepared for the complete transition to e-learning in the way that occurred. During the Covid-19 epidemic; when they asked the participants whether they faced problems in adapting to the software and technology through which e-learning is received, especially given that the university had implemented a new LMS, ePortfolio, and learning tools interoperability system, the participants unanimously responded that they were sufficiently knowledgeable about how to use it, and nothing had changed for them, and they did not face problems in using it or adapting to any new LMS, ePortfolio, or learning tools system that were introduced. For example, one participant stated the following when asked what some of the technical challenges are faced using Course Networking, the new LMS, ePortfolio, and learning tools interoperability system for online learning: “The CN, the course networking. I am ok with this

new system as compared to before. I think there are no issues for me to just go into the systems and look at the... notes as well as attending classes using the link, so there is no issue”, another respondent remarked, “No, I do not find any issues adopting to the new LMS system because I am quite familiar with Microsoft Teams. So basically, I did not have any issues communicating and whatsoever through Microsoft Teams. We can access. I have no, no issues, no problem.” This is in keeping with Zalat et al. (2021), which found that learners were much happier when they felt their transition from non-modular (conventional) learning to modular (e-learning) mode was seamless and didn't affect the structure or delivery of the courses. Thus, when organizing a methodical shift to online learning, it is imperative to make an effort to establish a culture of change. Ensuring that there is adequate technical help along the pathway is also crucial. As a result, there is going to be less resistance, which has been shown to improve online learning as a whole. Along the same lines, a number of studies conducted in various nations (e.g., Qureshi et al., 2012; Mohammadyari et al., 2015) revealed that, aside from to the perceived e-learning systems' value and usability, user adoption and acceptance of e-learning were influenced by a variety of individual (e.g., readiness to use e-learning), social (e.g., instructor and interpersonal influence), and organizational (e.g., infrastructure, financial, and technological facilities) factors within a particular culture. In a similar vein, James (2021) stressed that a variety of interrelated elements, including administrative or institutional support, ambient conditions, system technical configuration and design, learners' styles of learning, and computer proficiency interact to determine how well students do in e-learning.

Additionally, the data reveal variations in the level of challenges and strategies employed by students in online learning. These variations result from the interaction of multiple factors. According to the participants' responses, their experiences with online learning—including the difficulties they encountered and the tactics they employed—are shaped by the resources at their disposal, the relationships they have with instructors and other students, and the university's current policies and procedures regarding online learning. The results support a growing body of studies showing that two of the biggest issues facing instructors in online education revolve around maintaining the degree of engagement and retaining students' interest (O'Doherty et al., 2018). The findings of this study revealed that this problem was made worse for learners every time there were technological difficulties. For the most part, many participants indicated that those instances were uncommon; yet it is crucial to consider this possibility since, at the final analysis, the IT platform serves as the conduit for all aspects of the experience. Any obstacles there would mean disruptions to the virtual classroom and educational environment. In a similar vein, Rad et al. (2021) discovered a constrained range of interactions and e-learner engagement levels. As per Rad et al. (2021), the shift brought about by the COVID-19 pandemic naturally resulted in a reduction of the range of contacts, as individuals became more physically and occasionally socially separated. This distance, in terms of information interchange, necessitated the use of new abilities that were not possessed by everyone during the transition. These new ways spread among people quickly, and this may be attributed to the tendencies of social comparisons (Oraibi et al., 2022).

The findings of this study serve as valuable indicators for improving the e-learning system and enhancing stakeholder involvement to ensure its long-term effectiveness. As previously mentioned, these findings offer valuable insights for the pre-university, undergraduate and postgraduate programmes offered by higher-educational institutions and the accreditation of e-learning study programs. To attend lectures and retain their early levels of interest, online

learning students rely heavily on computer software and technology (Daniel, 2020). Remote learning imposes time and space constraints, but it also has significant drawbacks, including connectivity issues, application latency, and computers that function slowly, all of which can interfere with the learning process. To increase users' adoption of e-learning and win their confidence, e-learning tools ought to satisfy user needs (Kanwal & Rehman, 2017). E-learning obstacles can be broken down into the student, instructor, curriculum, organizational, and structural elements, each of which needs more collaborative effort to overcome. Besides, to encourage peer contact, support, and socializing in an online learning environment, technical modifications in online learning design are required (Thayalan et al., 2022). In contrast to traditional face-to-face classrooms, e-learning may limit perception of involvement. Consequently, in order to promote the adoption and reform the support systems required for effective educational processes and performances, higher education institutions must comprehend the challenges and personal experiences that learners face with e-learning. Institutional arrangements for future pandemics require an understanding of the difficulties faced by learners at UNITAR International University in Malaysia, who started all of their coursework online prior to the Covid-19 and continued to do so during the period of the pandemic. This might aid in the design of systems that assist students' learning at unpredictable periods, like pandemics, in order to eradicate inefficiencies and yield qualified and talented individuals. This research has limitations. To begin with, a number of ideas were provided by the qualitative data and may have been further investigated using different methods for collecting data (such as focus group sessions). While the narrow focus of the study allowed for the generation of full-bodied insights, the generalizability of the findings is restricted to institutions that share similar contextual and distinctive features with UNITAR International University. This limitation is made even more apparent by the unique circumstances surrounding the COVID-19 pandemic (on all fronts). A better understanding of this limitation would enable e-learning stakeholders to formulate appropriate strategies and policies for fostering the development of a sustainable e-learning environment. This research also assessed the official learning platforms. However, it was clear that informal learning resources, including social networking apps, improved student learning and instruction. While planning for online learning, it is crucial to comprehend how to make the most of these kinds of resources.

This study offers a comprehensive understanding of the dynamics of many essential components entrenched in an e-learning ecosystem that impact the adoption of e-learning systems during the COVID-19 pandemic. The study's particular research implications include a range of issues and challenges that both help or impede the adoption of an effective e-learning approach. Specific challenges that have been identified in this context are those related to online collaborative learning, difficulties with adopting new technology, and problems with unidirectional communication (i.e., interacting with instructors and other students). Prior to COVID-19, studies on the obstacles to online learning had been carried out, mostly on distance learners who were prepared for this kind of instruction. Because of this, learners' experiences and challenges may differ when e-learning is abruptly set up, especially for those who are engaged in a full-time, in-person program, as was observed in the early stages of the COVID-19. Notwithstanding the fact that e-learning was not extensively used in colleges and universities prior to COVID-19, some students had previously encountered it. These students include the first-year class of 2020 at UNITAR International University in Malaysia, the study's subjects, who received all their instruction online (modular). Because

no previous research had been conducted in the study context, it was unknown what their attitudes, experiences, and challenges with e-learning were. Given that this was a relatively gradual shift in their learning and evaluation processes, they could have faced different challenges and experiences with e-learning than other students who only started experiencing e-learning during the COVID-19 outbreak. Studying this group of people enables a more thorough comprehension of the difficulties presented by online learning and the specific techniques that students use to get over them. The results of this study, which give a realistic image of the present e-learning system and might be used as guidelines to increase student use of e-learning systems, can be beneficial to the policy makers, designers, and developers at these universities.

## References

- Abed, E. K. (2019). Electronic learning and its benefits in education. *Eurasia Journal of Mathematics, Science and Technology Education*, 15(3), em1672. <https://doi.org/10.29333/ejmste/102668>
- Aburagaga, I., Agoyi, M., & Elgedawy, I. (2020). Assessing faculty's use of social network tools in Libyan higher education via a technology acceptance model. *IEEE Access*, 8, 116415-116430.
- Al-Fraihat, D., Joy, M., & Sinclair, J. (2020). Evaluating E-learning systems success: an empirical study. *Comput. Hum. Behav.*,102:67–86.
- Andrade, M. S., Miller, R. M., Kunz, M. B., & Ratliff, J. M. (2020). Online learning in schools of business: the impact of quality assurance measures. *J. Educ. Bus*, 95(1):37–44.
- Basar, Z. M., Mansor, A. N., Jamaludin, K. A., & Alias, B. S. (2021). The Effectiveness and Challenges of Online Learning for Secondary School Students—A Case Study. *Asian Journal of University Education*, 17, 120-129. <https://doi.org/10.24191/ajue.v17i3.14514>
- Bhuasiri, W., Xaymoungkhoun O., Zo H., Rho J., & Ciganek, A. (2012). Critical success factors for e-learning in developing countries: A comparative analysis between ICT experts and faculty," *Comput. Educ*, 58(2):843–855.
- Boateng, H., Adam, D. R., Okoe, A. F., & Anning-Dorson, T. (2016). Assessing the determinants of internet banking adoption intentions: A social cognitive theory perspective. *Computers in Human Behavior*, 65, 468-478.
- Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative and Mixed Methods Approaches* (4th ed.). Sage.
- Daniel, S. J. (2020). Education and the COVID-19 pandemic. *Prospects*, 49, 91–96. <https://doi.org/10.1007/s11125-020-09464-3>
- Engin, M. (2017). Analysis of students' online learning readiness based on their emotional intelligence level. *University Journal of Educational Research*, 5(12A), 32–40. <https://doi.org/10.13189/ujer.2017.051306>
- Jafar, A., Dollah, R., Dambul, R., Mittal, P., Ahmad, A. S. A., Sakke, S., Mapa, M. T., Joko, E. P., Eboy, O. V., & Jamru, L. R. (2022). Virtual Learning during OVID-19: Exploring challenges and identifying highly vulnerable groups based on location. *Int. J. Environ. Res. Public Health*, 19, 11108.
- Jafar, A., Dollah, R., Sakke, N., Mapa, M.T.; Hua, A.K., Eboy, O. V., Joko, E. P., Hassan, D., & Hung, C. V. (2022). Assessing the challenges of e-learning in Malaysia during the pandemic of COVID-19 using the geo-spatial approach. *Sci. Rep.*, 12, 17316.

- James, P. C. (2021). What determines student satisfaction in an e-learning environment? A comprehensive literature review of key success factors. *Higher Education Studies*, 11(3), 1. <https://doi.org/10.5539/hes.v11n3p1>
- Kanwal, F, & Rehman, M. (2017). Factors Affecting E-Learning Adoption in Developing Countries—Empirical Evidence From Pakistan’s Higher Education Sector. *IEEE*, 5:10968–10978.
- Hodgkinson-Williams, C, Slay, H, & Sieborger, I. (2008). Developing communities of practice within and outside higher education institutions. *British Journal of Educational Technology*, 39(3): 433–442.
- Loganathan, T., Chan, Z. X., Hassan, F., Kunpeuk, W., Suphanchaimat, R., Yi, H., & Majid, H. A. (2021). Education for non-citizen children in Malaysia during the COVID-19 pandemic: A qualitative study. *PloS ONE*, 16, e0259546.
- Salloum, S. A., Al-Emran, M., Shaalan, K., & Tarhini, A. (2019). Factors affecting the E-learning acceptance: A case study from UAE. *Education and Information Technologies*, 24(1), 509-530.
- Mohammadyari, S., & Singh, H. (2015). Understanding the effect of e-learning on individual performance: The role of digital literacy. *Comput Educ*, 82(82):11–25.
- Mukhtar, K., Javed, K., Arooj, M., & Sethi, A. (2020). Advantages, Limitations and Recommendations for online learning during COVID-19 pandemic era. *Pakistan journal of medical sciences*, 36(COVID19-S4), S27–S31. <https://doi.org/10.12669/pjms.36.COVID19-S4.2785>
- O’Doherty, D., Dromey, M., Loughed, J., Hannigan, A., Last, J., & McGrath, D. (2018). Barriers and solutions to online learning in medical education—an integrative review. *BMC Med Educ.*; 18(1):130. <https://doi.org/10.1186/s12909-018-1240-0>
- Oraibi, B-A. M., Ho, J. A., Raja Yusof, R. N., & Idris, K. (2022). I am ‘better’ than you! The influence of upward social comparison on the intention to work abroad among doctors in Iraq: the mediating mechanism of attitude towards leaving. *The International Journal of Human Resource Management*, 33:11, 2316-2338.
- Qureshi, IA, Ilyas, K, Yasmin, R, & Whitty, M. (2012). Challenges of implementing e-learning in a Pakistani university. *Knowledge Management and E-Learning*, 4(3):310–324. <https://doi.org/10.34105/j.kmel.2012.04.025>
- Palvia, S., Aeron, P., Gupta, P., Mahapatra, D., Rosner, R. & Sindhi, S. (2018). Online education: Worldwide status, challenges , trends, and implications. *Journal of Global Information Technology Management*, 21(4), 233–241. <https://doi.org/10.1080/1097198X.2018.1542262>
- Rad, F.A.; Otaki, F.; Baqain, Z.; Zary, N. & Al-Halabi, M. (2021). Rapid transition to distance learning due to COVID-19: Perceptions of postgraduate dental learners and instructors. *PloS ONE*, 16, e0246584.
- Thayalan, X., Abdul Manaf, J. N., & Aboubakar, S. (2022). University students’ perspectives on the disadvantages of online learning due to covid-19. *International Journal of Education and Pedagogy*, 4(3), 222-228. <https://myjms.mohe.gov.my/index.php/ijeap/article/view/19881>
- Yin, R. K. (1994). *Case Study Research Design and Methods: Applied Social Research and Methods Series*. (2<sup>nd</sup> ed.). Sage Publications Inc.
- Zalat, M. M., Hamed, M.S. & Bolbol, S.A. (2021). The experiences, challenges, and acceptance of e-learning as a tool for teaching during the COVID-19 pandemic among university medical staff. *PLoS ONE*, 16, e0248758.