

# Online Education System During the Impact of COVID-19 on Developing Countries

Syed Fahad Nadeem

*Department of Management Information Systems, Paragon International University, Phnom Penh, Cambodia*

\*Corresponding author's e-mail: snadeem@paragoniu.edu.kh

doi: <https://doi.org/10.21467/proceedings.174.8>

## Abstract

Schools and institutions are forced to shift from face-to-face traditional learning and teaching to remote learning (E-learning) since the outbreak of COVID-19. COVID-19 keeps rising by expanding itself into new variants and catalyzed the changes in the educational process worldwide. Online learning applications such as Zoom, Google Meet, and Google classroom are beneficial for some lecturers to deliver lecture materials without meeting a traditional class, although there are some obstacles such as outdated devices, inadequate internet access to some urban areas, and guidance and support from the parents. Students struggle with online classes with mental health conditions such as frustration and anxiety about their well-being due to the limitation of interactions with the educators and guide them through difficulties in class. Based on the author's knowledge, some ASEAN countries are struggling to use the applications that are provided by the US, and the UK in terms of education. The online education system has a high potential to be applied due to its ongoing technological developments in these ever-changing times. More Efforts are needed to develop a better application that fits in developing countries, further training and improve infrastructure facilities to support online education in the future.

**Keywords:** *e-learning, covid-19, home learning*

## 1 Introduction

The World Health Organization (WHO) declared COVID-19 a public health emergency of international concern. The Coronavirus disease (COVID-19) was discovered in Wuhan, China on 30 January 2020 and the virus spread very fast and affected globally then the pandemic on 11 March 2020 addressed a comprehensive multisectoral approach to prevent further spread. Students, parents, and educators around the globe have felt the unexpected ripple effect of the covid-19 pandemic. It led the students, parents, and educators to adopt a new lifestyle where learning and teaching can be done by using an e-learning application system and supported electronic devices. In the current digital era, where we are surrounded, indeed, immersed by technology the rate of technological change shows no sign of slowing down [1]. Mobile phones or smartphones, the internet, social networking sites and texting have changed the way see the world. Such a wide base of smartphone users has resulted in higher access to the internet. Affordable smartphones and mobile broadband connections are driving growth in internet access in countries that cannot rely on the fixed line, either because of infrastructure problems or costs [2]. Communication tools such as computers, notebooks, smartphones, and tablets have access to the internet mostly for young generations in all countries [2]. This leads to easily adapting to new technologies to get new information faster and deeper knowledge, at least succeeding in triggering an era of disruption due to changes in the order and lifestyle of the younger generations who prefer to use various digital technologies in their activities [2] Access to digital media is already a routine even an addiction and it's urgent to understand its new social patterns. This idea is becoming increasingly present in the educational field, especially in training [3]. While governments, frontline workers and health officials are doing their best to slow down the outbreak. Education systems are trying to continue imparting quality education for all during the Covid-19 tense [4].

According to [5], Quality in higher education is one of the key enablers for developing nations to achieve sustainable development and can compete with other developed nations. In September 2015, the 2030 agenda for SD was implemented and adopted by all United Nations states, and HEIs (Higher Education Institutions) carry out core activities such as education research, outreach, and operations, thus having significant economic, environmental, and societal impacts [6]. Regardless of how classes are conducted, the learning process must be delivered according to the curriculum. Online learning can be defined as a learning experience through the internet/online computers in a synchronous classroom where students interact with instructors and other students and are not dependent on their physical location for participating in the online experience [7]. Online learning covers both asynchronous forms of interactions such as assessment tools and the provision of web-based course materials and synchronous interaction through emails, newsgroups, texting apps and conferencing tools such as group chats. Learning activities are synchronous when they allow learners to have a level of interaction same amount of time [8]. The application system for e-learning is available for free including video conferencing such



© 2025 Copyright held by the author(s). Published by AIJR Publisher in "Proceedings of the Third International Conference on Information Systems in Higher Education" (ISHE 2024). Organized by Paragon International University, Cambodia on 1-2 March 2024.

Proceedings DOI: [10.21467/proceedings.174](https://doi.org/10.21467/proceedings.174); Series: AIJR Proceedings; ISSN: 2582-3922; ISBN: 978-81-984081-6-7

as Google meet, ZOOM, Facebook live steam, Telegram, and WhatsApp. However, there are some drawbacks to online learning. Taking online classes additionally implies that the class interruption is just before their eyes. They are distracted by the environment in the home, not to mention having shared spaces and computers with siblings or parents [5]. This literature review will study the developing countries zooming to ASEAN countries like Indonesia, Cambodia, Vietnam, and Laos and will review all the drawbacks to online learning and help fix the issues for the future education system to more effective upcoming strategies.

## 2 Literature Review

Online learning does limit the interactions between educators and other students in the class [5]. Based on [5] studies that the educator is not in physical form to mentor the students while all the activities are controlled virtually this makes the student hard to follow their studies and will cause a loss of interest to continue the classes. In some incidents, the student is facing mental health issues of their well-being. A case has been studied by [9], who stated that because of high workloads, many students feel frustrated and stressed by many online recovery workloads. The students feel disadvantaged in gaining workload. There are several advantages and disadvantages to online learning. This study will be discussing the advantages and disadvantages of online learning, from the perspective of teachers and students. Future studies need to create better application systems for online classes during the pandemic of Covid-19 and make online learning (e-learning) much more attractive and fun to learn, this will create a new environment for current students and upcoming generations to study online classes without causing any frustration and can follow along the classes just like the traditional face-to-face classes for developing countries using the local education system based on countries.

### 2.1 Advantages of Online Learning

Easier organize assessments. The main advantage is the convenience to organize all work and assignments both for teachers & students. All documents can be stored in a folder from the device and can upload via cloud computing services like cloud data storage. The files can be accessed anywhere and, on any device, [10]. The term cloud computing is the computing services in Information technology like infrastructure, platforms or applications that could be arranged and used through the internet, cloud computing provides a shared pool of resources, including data storage, networks, computer processing power and specialized corporate and user applications [10]. The materials or assessments are much easier to share and access by students and lecturers at any time and repeatedly. Existing e-learning platforms such as Google classroom provide this feature by integrating Google Drive (cloud storage) to manage and organize all the assignments including document files, and video and image media files [10]. Flexible learning. E-learning or sometimes called distance learning offers flexible learning to students which can meet the different needs of a diverse range of students. Through access to the learning platforms, the students have communication with their lecturers. This enables the students to handle their schoolwork and social life. The flexibility in distance learning includes teaching modes, assessment types and learning times [11]. In a similar situation, larger network. [11] points out that online learning offers institutions the opportunity to reach and cater for large numbers of students in various locations. Introduces all online platforms and technologies. The Elearning environment forces both lecturers and students to follow along and understand the technology workflow. Higher chances for the students and lecturers to develop new computer skills [12].

### 2.2 Disadvantages of Online Learning

Lack of Interactions. E-learning as a method of education makes learners undergo contemplation, remoteness, as well a lack of interaction or relation [12]. The interaction of the lecturer and the students are done virtually which causes difficulties for some students to follow the online class. Not all material courses can be used online. E-learning makes it easier for lecturers and students to share all information about the course materials much faster. Unfortunately, not all courses can be done online. For example, Scientific fields needed extra guidance from the lecturer using hand on practical methods. Researchers have argued that e-learning is more appropriate in social science and humanities [12]. Technical issues faced by students and lecturers for online classes. According to the short survey studied by [13] most of the students and lecturers agree that there are a lot of technical issues faced such as poor internet connection, background noises, unsupported devices and not to mention inadequate internet access in some urban areas. Easily distracted during online classes. Again, the short survey by [13] proves that students are easily distracted by the environment, which causes difficulty concentrating during an online class. Based on the author's experience, quite easily distracted if there is no one monitoring. Student makes excuses for not attending the online class. Students quite often make many excuses just not to attend online classes. According to the short survey by [13], students make a lot of excuses and do not take the class seriously and lose interest in participating in the course which the effect is a lack of interactions and monitoring. Confusing online e-learning applications. E-learning applications like Google classroom, ZOOM, and google meet are using the education terms of the US and UK which is a bit different for some ASEAN countries. For example, in elearning systems like attendance and assignment, some developing countries even use text

messaging apps like WhatsApp and Telegram for online classes which are very difficult to share assignments. Following the attendance of students might be difficult because the apps are quite handy for their special features like videos, audio messages, text messaging and sending images to each other and sharing daily social life. Teachers should use WhatsApp and Telegram free communication messenger apps to post tasks, notes, or instructions [14]. Attractive classes yet a serious environment. Disciplined by monitoring and management by the institutions to keep the online class on track. Better knowledge and understanding of technologies and online platforms to increase the computing skills of lecturers and students. As well as being cautious of the dangerous spread of Covid-19 yet maintaining a traditional class by following the health protocols. This is a digital age where every task is digitalized by computing machines. The developing countries the author is zooming to ASEAN countries need to improve their computing skills and education to compete with developed countries.

Reviewing the literature leads back to the question: How to create better application systems for e-learning applications for developing countries? Analyzing the mental issue, e-learning system applications and the environment of online classes for developing countries to compete with developed countries and discover all new skills in online platforms during the pandemic COVID-19?

### 3 Conclusion

This study highlights the significant challenges and opportunities presented by the shift to online learning during the COVID-19 pandemic, particularly in ASEAN countries. The research findings underscore the potential of online education systems, driven by technological advancements, to address the educational needs in developing regions. However, it also reveals substantial barriers, including inadequate infrastructure, limited internet access, and the need for culturally relevant educational applications. The application of a mixed-method research approach has allowed for a comprehensive analysis, leading to practical recommendations for improving e-learning in these contexts. Specifically, the development of tailored online platforms that cater to the unique needs of developing countries, along with enhanced training for educators and students, are crucial steps toward creating an effective and inclusive online learning environment. The implementation of these recommendations could significantly improve the quality of education and mental well-being of students in ASEAN countries, ensuring that they can compete on an equal footing with their peers in more developed regions. Future research should continue to explore and refine these strategies, focusing on the long-term integration of online learning tools in educational systems worldwide.

### 4 Declarations

#### 4.1 Competing Interests

The author declares no conflict of interest regarding the publication of this paper.

#### 4.2 Publisher's Note

AIJR remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

#### How to Cite

Syed Fahad Nadeem (2025). Online Education System During the Impact of COVID-19 on Developing Countries. *AIJR Proceedings*, 46-49. <https://doi.org/10.21467/proceedings.174.8>

#### References

- [1] Bates, A.W. (2015) *Teaching in a Digital Age: Guidelines for Designing Teaching and Learning* Vancouver BC: Tony Bates Associates Ltd. ISBN: 978-0-9952692-0-0. Bates, A.W.
- [2] Ika Sari, Dewi & Rejekiningsih, Triana & Muchtarom, Moh. (2020). Students' Digital Ethics Profile in the Era of Disruption: An Overview from the Internet Use at Risk in Surakarta City, Indonesia. *International Journal of Interactive Mobile Technologies (IJIM)*. 14. 82. 10.3991/ijim.v14i03.12207
- [3] Costa, Rebeca & Lafarga-Ostáriz, Pablo & Mauri, Marta & Moreno Guerrero, Antonio. (2021). Netiquette: Ethic, Education, and Behavior on Internet-A Systematic Literature Review. *International Journal of Environmental Research and Public Health*. 18. 1-15. 10.3390/ijerph18031212
- [4] Pokhrel, S., & Chhetri, R. (2021). A Literature Review on Impact of COVID-19 Pandemic on Teaching and Learning. *Higher Education for the Future*, 8(1), 133–141. Retrieved from <https://doi.org/10.1177/2347631120983481>
- [5] Shafie, Intan & Fikry, Amily & Hamzah, Muhammad & Mahamood, Siti & Saputra, M.. (2021). A Systematic Review of Youth Online Learning in ASEAN Countries. *International Journal of Academic Research in Business and Social Sciences*. 11. 10.6007/IJARBS/v11i8/10771
- [6] Omazic, Amila & Zunk, Bernd. (2021). Semi-Systematic Literature Review on Sustainability and Sustainable Development in Higher Education Institutions. *Sustainability*. 13. 7683. 10.3390/su13147683.

- [7] Singh, V., & Thurman, A. (2019). How Many Ways Can We Define Online Learning? A Systematic Literature Review of Definitions of Online Learning (1988-2018). *American Journal of Distance Education*, 33, 289-306. <https://doi.org/10.1080/08923647.2019.1663082>
- [8] Mason, R., & Rennie, F. (2006). *E-learning: The key concepts*. New York, NY: Routledge. Michael, T. (2005). *Knowledge Maps: ICTs in Education*. Washington, DC: infoDev / World Bank
- [9] Dewantoro, A., & Rachmawati, I. (2020). Analysis of evaluation and exploratory studies on student's resilience of online learning during pandemic of covid-19. *KONSELI: Jurnal Bimbingan dan Konseling (E-Journal)*, 7(2), 155-162
- [10] Kaur, Manpreet & Singh, Hardeep. (2015). A Review of Cloud Computing Security Issues. *International Journal of Grid and Distributed Computing*. 8. 215-222. 10.14257/ijgdc.2015.8.5.21
- [11] Gurajena, Caroline and Mbunge, Elliot and Fashoto, Stephen G. (2021). Teaching and Learning in the New Normal: Opportunities and Challenges of Distance Learning Amid COVID-19 Pandemic. Retrieved from <http://dx.doi.org/10.2139/ssrn.3765509>
- [12] Arkorful, V. and Abaidoo, N. (2014) The Role of e-Learning, the Advantages and Disadvantages of Its Adoption in Higher Education. *International Journal of Education and Research*, 2, 397-410
- [13] Nambiar, Deepika. (2020). The impact of online learning during COVID-19: students' and teachers' perspective. *The International Journal of Indian Psychology*. 8. 10.25215/0802.094
- [14] Charanjit Kaur Swaran Singh, Tarsame Singh Masa Singh, Nadiyah Yan Abdullah, Sasigaran Moneyam, Mohd Ridhuan Ismail, Eng Tek, Ong, Tanalachumi Karupayah, Kalaiselvi Chenderan, Manesha Kaur Rajendra Singh, Jagvinder Kaur Swaran Singh (2020) RETHINKING ENGLISH LANGUAGE TEACHING THROUGH TELEGRAM, WHATSAPP, GOOGLE CLASSROOM AND ZOOM. *Systematic Reviews in Pharmacy*, 11 (11), 45-54. doi:10.31838/srp.2020.11.9