

# Constructing an Online Sustainable Educational Model

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The outbreak of COVID-19 forced billions of learners to stay at home in order to receive online education. Challenges should also be addressed to sustain online education during the pandemic. Designers, scientists, and teachers should make every effort to increase learning engagement, enhance learning supervision, formulate adequate emergency programs, minimize educational inequalities, solve technical issues, and formulate systematic learning management and organization. The sustainable online educational model may be updated and perfected by including more practical features in the future.

Keywords: online sustainable educational model ; online education ; COVID-19 ; pandemic

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## 1. Introduction

Coronavirus Disease 2019 (COVID-19) has exerted a seriously negative influence on educational environments <sup>[1]</sup>. United Nations Educational, Scientific and Cultural Organization (UNESCO) reported that the pandemic has negatively influenced more than 90% of students across the world. More than one billion learners failed to receive traditional instruction due to the shutdown of universities and schools <sup>[2][3]</sup>. Newly rising countries have suffered more from the pandemic <sup>[4][5]</sup>. The families with lower economic status have also been cornered due to the lockdown of the economy <sup>[6]</sup> <sup>[7]</sup>, contributing to digital inequalities <sup>[8]</sup>. Exclusion and inequality have also been exacerbated among vulnerable people, e.g., minorities, the disabled, and the poverty-stricken <sup>[9]</sup>.

The long-term lockdown of universities and schools has resulted in many negative results, e.g., the disengagement of education and psycho-social disadvantages. With the outbreak of COVID-19, numerous universities and schools were forced to shut down. Online education has become the prioritized method. In the USA, college students receiving online education in 2016 stood for 31.6%. In Canada, 76.0% of higher educational institutes delivered lectures using online platforms in the year 2019; this online trend has become increasingly popular since the outbreak of the COVID-19 pandemic. According to the statistics of the United Nations Educational, Scientific and Cultural Organization (UNESCO), approximately 172 countries, over 1.5 billion learners, or around 90% world's students have been forced to receive online learning <sup>[10]</sup>.

Online education may be an effective way to help students and teachers through this unpredictable dilemma <sup>[11]</sup>. Increasingly more educational institutes have become aware of the virtual education environment where students tend to be of a great variety. Educators need to cater their courses, styles, and schedules to the diversified needs of virtual students. The COVID-19 pandemic has made online learning gain prominence in Vietnam where policymakers and educators have paid much attention to online learning <sup>[12]</sup>. However, online learning has been confronted with many challenges. The question of how to sustain this emergency teaching and learning format has become urgent for educators to address.

## 2. Online Platforms to Sustain Online Education

Online educational platforms have become increasingly popular during the COVID-19 pandemic. The pandemic has radically changed the attitudes of students and teachers towards online learning. They have to accept the new educational model where technologies such as online platforms play an important role in distance or online education irrespective of their preferences. Whether or not they have enough digital literacy, they have to adapt themselves to this technology-assisted online environment. By using online learning platforms, teachers and students could maintaining social distance to contain the COVID-19 pandemic. Teachers could prepare lectures, implement online pedagogy, and assign tasks to students at home by using an online learning platform during the pandemic <sup>[13]</sup>. Teachers tend to produce their lectures on online learning platforms such as Google Classroom to teach veterinary anatomy and they update their digital literacy to meet the new needs of students and lecture delivery <sup>[14]</sup>. Teachers could also show themselves on the screen to simulate real face-to-face lecturing. Students could interact with them by raising or answering questions and

joining in on the discussion by using the platform. The researchers, thus, propose a research question, i.e., are online educational platforms an essential construct in the online sustainable educational model?

### **3. An online Assessment System to Sustain Online Education**

An online assessment system could be designed to assess typing skills and the cognitive loads. Typing skills may impact online communication. Good typing skills may facilitate online communication, while poor typing skills may hinder online communication <sup>[15]</sup>. The assessment of typing skills is, thus, important to evaluate the online effectiveness and sustain online environments <sup>[16]</sup>. It is also important to measure the cognitive loads of both students and teachers in the online learning environment. The cognitive loads might be under the influence of various factors such as Internet connectivity, access to learning resources, the usefulness of resources, ease of use of online platforms, and teacher's timely feedback <sup>[17]</sup>. It is thus important to measure both typing skills and the cognitive loads by using an online assessment system.

An online assessment system could sustain online education during the pandemic. It is important to measure online learning attitudes, interest, satisfaction, and effectiveness regarding the abrupt shift to online education <sup>[18]</sup>. The reliable online assessment instead of traditional paper–pencil examinations is considered important to sustain the new online education. Based on the assessment results, designers and teachers could then adjust their strategies to meet the various needs of online learners. A comprehensive online assessment system is expected to measure learning performance, teaching progress, and various factors to improve online educational quality. Therefore, the researchers propose the second question, i.e., is the online assessment system an essential construct in the online sustainable educational model?

### **4. The Use of Social Media to Sustain Online Education**

Social media could facilitate online education. During this lockdown time, teachers could supervise students' learning activities and progress by using social media such as WhatsApp. They could also design lecturing videos, post curricular contents, and share learning resources through social media <sup>[19]</sup>. Online learning technologies, e.g., EdX, include some tools such as social media, mobile phones, and podcasts <sup>[20]</sup>, which could be used to support online and offline education. As students share their opinions or learning resources through social media, they feel they are in the same family and can learn collaboratively. In this manner, their engagement in online learning might be enhanced. Learners could access learning resources, share information, and transfer texts, images, voices, and videos by using social media on a computer or a mobile device <sup>[21]</sup>. Social media could boost the online educational effectiveness in view of the above-mentioned findings. The researchers, therefore, propose the third research question, i.e., are social media an essential construct in the online sustainable educational model?

### **5. Digital Literacy to Sustain Online Education**

The pandemic has ruthlessly warned educators and researchers that digital literacy plays an important role in this virtual educational environment. Educators and designers must consider how to integrate digital technologies into the new virtual education environment brought about by the pandemic. Teachers and students should also increase their levels of digital literacy to keep pace with the sudden alteration from physical to virtual educational environments <sup>[22]</sup>. The use of information technologies during the pandemic and students' convenient access to technologies can be conducive to the sustainable use of educational technologies and improved digital literacy <sup>[19]</sup>. Digital literacy may be an important ability for both learners and teachers to acquire and deliver knowledge through the online educational model.

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