



## Chapter 6

# The Effect of Online Learning on Undergraduate Student Achievement and Engagement During Times of Emergency Remote Teaching (ERT)

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### ABSTRACT

*The COVID-19 pandemic has affected the worldwide education system and an online learning environment has been implemented to ensure the continuity of education during times of emergency remote teaching. This study examines the effect of online learning on undergraduate students' achievement and engagement during times of emergency remote teaching. This study employed a quasi-experimental design without a control group using the quantitative research approach to identify the achievement motivation level and engagement level of USM undergraduate students in the instructional technology practices subject (PGT201E) during COVID-19 and the relationship between these two variables. A purposive sampling technique was*

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*used, and an online survey based on the achievement motivation inventory (AMI) and online student engagement scale (OSE), and also asynchronous email interviews were conducted with USM undergraduate students who took the instructional technology practices subject (PGT201E) in the academic year of 2020/2021. The findings of this study were discussed further in the chapter.*

## **INTRODUCTION**

An outbreak of COVID-19 is a fatal illness caused by the Coronavirus (SARS-CoV-2) which was first discovered in an outbreak of respiratory diseases cases in Wuhan City, Hubei Province, China (Centers for Disease Control and Prevention (CDC), 2020) and it has shocked the whole world (Dhawan, 2020). COVID-19 was first informed to the World Health Organization (WHO) on 31 December 2019 and as the virus spread to many countries, it was declared as a Public Health Emergency of International Concern (PHEIC) by the World Health Organization (WHO) on 30 January 2020 (Cennimo, 2020). On 11 March 2020, the World Health Organization (WHO) declared COVID-19 a pandemic (World Health Organization, 2020) which turn out to be a global health issue and has affected all levels of the education system (Nicola et al., 2020). About 1.7 billion students in 195 countries which accounted for more than 90% of the total number of students enrolled were affected by the closure of local educational institutions (Soudien et al., 2020; UNESCO, 2020a, 2020c) as all campus activities have been postponed to help control the pandemic conditions and prevent the virus from spreading further.

In line with the pandemic situation, the educational institutions have made appropriate and timely modifications to ensure the continuity of education during emergencies where the in-person teaching methods switch to fully online learning (Sahu, 2020; Yamin, 2020; OECD, 2020). The integration of multimedia used in online learning offers significant pedagogical benefits in motivating the increasing of student engagement as students learn more when they are interested in the learning materials (Nepal & Rogerson, 2020) and a substantial amount of research shows that instructional technology can be used to help support the online learners' engagement (Kahn et al., 2016). Student engagement is widely acknowledged as having a significant effect on achievement and learning in higher education (Nepal & Rogerson, 2020). According to Appleton et al. (2008) and Fredricks and McColskey (2012; in Zhang et al., 2021) a higher academic achievement is related to students' level of engagement. Therefore, the objectives of this study are to identify: (a) the achievement motivation level of USM undergraduate students in online learning for Instructional Technology Practices subject (PGT201E) during COVID-19; (b) the

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