



Exploring Students' Online Learning Interaction Behaviors and Experiences: A Case Study

ABSTRACT

This study chose an undergraduate course offered at a public university in Malaysia as the case to discover students' unseen online interaction behaviors and experiences in order to obtain insights into ways to devise relevant online pedagogical approaches. The study employed the learning management system's (LMS) analytics and the analysis of interactions within the social messaging app and virtual live classes to discover students' online interaction behaviors, focusing mainly on student-content, student-instructor interactions, and student-student interactions. It also employed interviews and a survey to gain insights into students' online learning experiences. The analysis and reflection of the derived online interaction behaviors and experiences reveal that students require conducive learning environments, regular check-ins on their progress and social-emotional well-being, and favor the learning flexibility afforded by asynchronous learning. It also provides insights into commendable pedagogical practices and reveals some considerations in virtual communication and virtual collaboration to improve students' online interaction behaviors and experiences.

KEYWORDS

online learning, interaction behavior, online learning experience, learning analytics

INTRODUCTION

The Covid-19 pandemic has made online learning the new normal for educators in Malaysia and worldwide. Online and physical learning environments are different in several aspects. In online learning environments, student-student and student-instructor interactions are primarily text-based and occur via discussion forums, emails, and text-based chat/messaging tools (Al Tawil 2019; Marden and Herrington 2022). With technological advancements, audio- and video-based online interactions are made feasible and occur via social messaging apps and virtual conferencing platforms (Lowenthal et al. 2021; Milovic and Dingus 2021; Rassaei 2022). In addition, student-content interaction also occurs when students interact with course contents (Murray et al. 2012).

As opposed to the physical learning environment, the visual cues are lacking in an online learning environment (Smith, Ferguson, and Caris 2001). Hence, students' online interaction behaviors are often not physically observable. Studies such as Kuo et al. (2013), Phirangee (2016), Shackelford and Maxwell (2012), and many others collected students' self-reported data on their online interactions. However, as Wang (2017) pointed out, students' engagement can also be observed via their interaction with some tools, and their online behaviors as captured in their online activity logs. For example, Zimmerman (2012) used the statistical reports from the learning management system (LMS) to examine how students' time spent completing quizzes and reviewing course content were related to their

course achievements. More recent studies such as Ginda et al. (2019) produced learning analytics and visualizations based on students' activity logs from the LMS to examine and communicate students' engagement, performance, and trajectories in online courses and Wu et al. (2022) employed deep learning technique, social network analysis, and lag sequence analysis to examine the interaction patterns of students with different co-reflection levels based on students' postings in discussion forums set in an LMS. Such studies provide insight into employing LMS learning analytics to examine students' interaction behaviors in this study.

A systematic review of online learning research studies by Martin, Sun, and Westine (2020) reveals that most studies from 2009 to 2018 examined online learning experiences. This indicates the significance of understanding students' experiences in online courses. Hence, this SoTL study aims to obtain insights into the online pedagogical practices of a fully online undergraduate course offered at a public university in Malaysia by exploring students' online learning interaction behaviors and experiences. The study employed the learning management system (LMS) analytics and the analysis of interactions within both the social messaging app and virtual live classes as techniques to discover students' online interaction behaviors. It also employed interviews and a survey to gain insights into students' online learning experiences.

THEORETICAL FRAMEWORK

Anderson's model of online learning, as depicted in Figure 1, provides the theoretical foundation of this study (Anderson 2004; 2008), as it is a comprehensive model constructed based on several theories and models. The model integrates the four lenses of effective learning posited in National Research Council (2000): learner-centered, knowledge-centered, assessment-centered, and community-centered. It emphasizes the affordances of the web concerning the four lenses, including its hyperlinking feature associated with constructivism (Jonassen 1992). The model also highlights the importance of interactions among students, instructors, and content, as proposed in Moore (1989).

Figure 1: Anderson's model of online learning (Anderson 2008, reprinted with permission)

