

# Chapter 68

## Student Learning and Engagement in a Blended Environment: A Mixed Methods Study

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### ABSTRACT

*The chapter investigated students' behavioral, emotional, and cognitive engagement, as well as their learning in a blended environment. A convergent mixed methods research design was used in which quantitative data (face-to-face attendance, online system login, and survey) were collected from 71 undergraduate students, and qualitative data (focus group interview) were collected from six of these students. These data were further analyzed and integrated. The quantitative results showed that students' online login, the behavioral engagement indicator, had a positive impact on their learning, which was supported by qualitative findings. Further analysis revealed the mixture of students' engagement, such as confusion vs. interesting feelings to online discussions and frustration vs. not much effort using the online system.*

### INTRODUCTION

Blended learning emerged with the uprising of online learning. This form of learning integrates both online learning and face-to-face learning, and is intended to overcome the weaknesses of online learning and face-to-face learning (Osguthorpe & Graham, 2003). It is believed that blended learning has the potential to transform higher education, as it can engage learners in the learning community (Garrison & Kanuka, 2004; Rovai & Jordan, 2004). Some practical guidelines have been proposed (Kim, Baylen, Leh, & Lin, 2015), and some higher education institutions have implemented blended learning at various stages (Graham, Woodfield, & Harrison, 2013). The current study fills in the existing research gap by utilizing mixed methods approach to directly address students' engagement and learning in a blended environment

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## **Blended Learning**

Blended learning has shown its pedagogical values despite the fact that it still faces long-standing and newly emerged challenges (Kim et al., 2015). For the past several decades, scholars and educators have been conducting research in order to shed lights on issues regarding research and practice of blended learning. Drysdale, Graham, Spring and Halverson (2013) and Halverson et al. (2014) conducted thematic analysis on journal articles, book chapters, and books, as well as graduate theses and dissertations with respect to blended learning since 2000. They found that blended learning research covers a wide range of topics including instructional design, learner disposition, learning outcomes, comparison of different modes, technology, and interaction. Moreover, their analysis revealed that there is a variety of theoretical models in the existing blended learning literature. Some theories and models are used to guide design (e.g., Kerres & De Witt, 2003), some are used as an evaluation tool or instructional model (e.g., Lewis & Orton, 2006; Laurillard, 2007), and some explore specific type of blended learning (e.g., Jung & Suzuki, 2006). As a relatively new form of learning, blended learning is not inferior to other two forms of learning—online learning and traditional face-to-face learning. The results of a meta-analysis showed that blended learning was not significantly different from synchronous distance education or asynchronous distance education in terms of achievement (Bernard, Abrami, Borokhovski, Wade, Tamim, Surkes, & Bethel, 2009). Further meta-analysis revealed that blended learning was actually superior to classroom instruction (Bernard, Borokhovski, Schmid, Tamim, & Abrami, 2014). There are also research studies reported in the literature that specifically demonstrate blended learning's pedagogical values by comparing it to online learning and face-to-face learning (Al-Qahtani & Higginst, 2013; Ginns, Ellis, 2007; Olapiriyakul, & Scher, 2006; Rovai & Jordan, 2004; Tuckman, 2002). For instance, Al-Qahtani and Higginst (2013) compared university students' achievement in an Islamic Culture course. These students were randomly assigned into three conditions—learning from face-to-face format, learning online via Moodle, or learning via a blended format. The results showed that participating learners in the blended learning condition had significantly higher achievement scores than their counterparts in the face-to-face learning condition and the online learning condition. Rovai and Jordan (2004) also compared students' sense of community in online, face-to-face and blended settings and found similar results: students in the blended learning setting had the highest scores on two variables concerning the sense of community—perceived connectedness and perceived learning.

In addition to comparing different formats of learning, researchers also empirically studied potential factors that influence learning in blended environments. The results of some research indicate that students' perceived usefulness (Lin & Wang, 2012), students' motivation (Xie & Ke, 2010), and interaction with the online system (Lee, Yeh, Kung, & Hsu, 2007; Wei, Peng, & Chou, 2015) have significant impacts on their learning outcomes. For instance, Wei et al. (2015) investigated the relationship between learners' performance and their behaviors of interaction with an e-learning system by collecting data from students who were enrolled in a general-education asynchronous online course in Taiwan. The results of their research revealed that those learners' number of logins and the number of postings in discussion board positively impacted their online discussion quality. Also, these two types of behaviors, as well as the number of reading online learning materials, were positive predictors of students' achievement.

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