Chapter 83
Early Predictors of Persistence and Performance in Online Language Courses

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ABSTRACT

This study examines the relationship between online learning behavior and learning outcomes with the aim of identifying early predictors of learners' persistence and success. Research focused on the first learning units of online language courses in a developing country in order to provide teachers and administrators with a simple model for identifying at-risk students. Using data from 716 students enrolled in 24 English courses at a Peruvian university, learning analytics approach was applied, framed by the self-determination theory (SDT). Results suggest that unit completion rates and time spent on learning, which are both related to sense of autonomy, strongly predict persistence at the course mid-point. Moreover, the same variables can predict student persistence as early as unit three, providing even earlier indications for dropping out. Quiz score and midterm grade, which are related to the SDT competence construct, moderately predict achievement, defined as the final exam grade. Relatedness factors (emails and Facebook activity) were not found to be early predictors.

INTRODUCTION

Online English courses have been found to have the potential to overcome obstacles in teaching English in developing countries (e.g., lack of access to high quality learning materials and not enough professional English teachers) and to provide affordable and high-quality English instruction (Ministerio de Educacion, Peru, 2016a; OECD, 2015). Case studies of ongoing widespread programs have yielded promising results of the use of technology to address resource constraints in language instruction at the postsecondary education level (Xu et al., 2019).

While technology-mediated language learning (TMLL) is a promising approach for delivering improved learning outcomes (Zheng, Warschauer, Lin, & Chang., 2016), concerns have been raised about student persistence and success in online foreign-language (L2) learning courses (Hromalik & Koszalka, 2018). The online learning environment presents learners with challenges in that they must take control of their own learning process, engage more and differently in learning strategies and regulate their study behavior (Littlejohn, Milligan, & Mustain, 2016). Studies have shown that successful online learners must possess a set of unique qualities that include self-discipline, autonomy and goal-orientation (Barnard, Lan, To, Paton, Lai, 2009; Glick et at., 2018). In the context of L2 online courses, many individual differences have been shown to influence student success (Hromalik & Koszalka, 2018), among them learner motivation (Ushida, 2005) and self-regulated learning skills (Lin, Zhang, & Zheng, 2017). Therefore, factors associated with online learning motivation, online learning behavior and student characteristics need to be better understood in order to maximize success in TMLL environments. Given the limited resources in developing countries, cost-effective implementation of this type of TMLL solutions must utilize students' learning potential and aspire to increase the completion rates of online English courses (Sife, Lwoga, & Sanga, 2007). Hence, the ability to identify potential dropouts in a timely manner and provide additional and adaptive support as early as possible becomes a pressing need (Choi, Lam, Li, & Wong, 2018; Cohen, 2017).

Therefore, the purpose of the current study is to propose an early prediction model aimed at identifying at-risk students in the early phases of online English language courses. Learning analytics (LA) approach, framed in the Self Determination Theory (SDT) (Deci & Ryan 1985; Ryan & Deci, 2000) was applied, in order to examine the relationship between students' learning behavior in the first half of the course and their overall persistence and academic achievement.

According to SDT theory, a learning environment that promotes perceptions of autonomy, competence and relatedness leads to greater motivation (Ryan & Deci, 2000), thus improving student achievement (Schunk, 2012). These three SDT constructs (autonomy, competence and relatedness) correspond to features of online learning, among them flexible learning, computer-mediated communication as social interaction and challenges for learning skills (Chen & Jang, 2010). Previous research has suggested that autonomy, competence and relatedness, as defined by Deci and Ryan (1985, 2000) may predict student outcomes, which measured by persistence and performance in an online English language course, based on learners' activity and performance throughout the course (Akbari, Pilot, & Robert-Jan Simons, 2015; Glick et al., 2019).

Aiming atearly prediction, in analyzing the data from 24 online English courses at a Peruvian university, the current study focused on the first four out of eight learning units. Learning management system (LMS) records and Facebook participation were analyzed, to examine whether online learning behavior and evidence of social engagement in the first half of the course can predict learners' persistence and final grade.

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