Chapter 17
Understanding Students’ Use of Online Learning Tools through Online Learning Readiness Assessment

Kriengsak Panuwatwanich
Griffith University, Australia

Rodney A. Stewart
Griffith University, Australia

ABSTRACT
Understanding the readiness of students to undertake online education has been viewed as a necessary precursor to ensuring their success in an online learning environment. To serve this purpose, a number of Online Learning Readiness (OLR) assessment tools have been developed. However, the relationship between the students’ readiness, assessed by these tools, and the actual online learning outcomes has not been well established. This chapter presents a study that assesses the Online Learning Readiness (OLR) of a sample group of postgraduate engineering students and determines whether there is any association between the level of readiness and the extent to which the students use online learning tools. The research employed a questionnaire survey targeting a group of postgraduate students undertaking a project management course at Griffith University in Queensland, Australia. Based on the survey data from 30 valid responses, it was found that the sampled students had different levels of OLR and can be clustered into three main groups: developed, less-developed, and developing OLR, and that the higher level of OLR can be associated with more extensive use of online learning tools.

INTRODUCTION
It is well documented in the literature that online learning has become a popular form of educational instruction within the Australian tertiary programs during the past 10 years (Pillay et al., 2007). In particular, online learning provides a more flexible mode of study for students who are working in the industry and cannot generally afford to take time off to attend regular classes. From a university’s perspective, online programs are more likely to attract domestic students currently in the industry}

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sector who are seeking professional development through undertaking a university degree program. These programs are also perceived to be more cost effective as they can accommodate a large number of students without having to involve as many teaching and support staff as those required in the typical face-to-face programs.

While online learning has become more commonplace in higher education, it has been argued by some researchers (e.g. Alonso et al., 2005 and Summers et al., 2005) that this form of study has progressed without the proper guidance of a pedagogical model. This has led to growing student dissatisfaction, which in turn affects attrition rates. Given this concern, it is important for the program convenors/curriculum developers to understand which qualities of students are critical for their achievement and satisfaction in an online learning environment, and whether these qualities will likely lead to students’ engagement and success in online learning.

In response to the above issue, researchers have proposed and tested a number of assessment scales that can be used to diagnose a student’s level of online learning readiness (OLR). The relationship between students’ readiness and desirable learning outcomes is established in a different context, such as self-directed learning readiness (Stewart, 2007). However, research that examines whether the OLR assessed by such scales will lead to desirable online learning outcomes has been limited. In recognition of this, the aims of the herein presented research were to assess the OLR of a sampled group of postgraduate engineering students and to determine whether there is any association between the levels of readiness and the extent to which the students use online learning tools. It should be noted that the extent to which the students use online learning tools was considered as an indicator of student engagement in an online learning environment. Student engagement has been found to be positively linked with desirable learning outcomes (Carini et al., 2006). Moreover, students’ uses of online learning technology were found to have a significant impact on the students’ learning (Krentler and Willis-Furry, 2005).

This chapter is structured as follows. In the next section, a review of existing OLR assessment scales is provided. Following this, the method used to assess the relationship between OLR and the use of online learning tools, followed by the results is presented. These results and research implications are then discussed. The chapter finally concludes with the research limitations and directions for future work.

ONLINE LEARNING READINESS ASSESSMENT

Watkins et al. (2004) highlight that it is the responsibilities of educators to ensure that students adequately prepared to be successful in an online learning environment, and that a readiness assessment instrument is an important tool for improving student performance through useful online learning experiences. In an attempt to understand and measure a student’s level of OLR, a number of OLR assessment instruments were developed and validated over the past decade. This research was focused on those instruments that were developed and validated within the context of higher-education. These are mainly by Smith et al. (2003), Watkins et al. (2004) and Pillay et al. (2007).

Smith et al. (2003) conducted an exploratory factor analysis (EFA) on the 13-item Readiness for Online Learning questionnaire developed by McVay (2001) using a sample of undergraduate students from the US and Australia. The analysis results suggested two underlying factors of OLR: Comfort with E-learning and Self-Management of Learning. These factors were consistent with