Chapter 41
Understanding the Use of Online Tools Embedded Within a Virtual Learning Environment

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ABSTRACT

Different learning tools are available within virtual learning environments, including forums, quizzes, and ePortfolios. This article investigates perceptions of helpfulness and ease of use of these three tools, including how they are impacted by learner characteristics and what predicts frequency of use of each tool. Critically, the relationship between perceived helpfulness of the three tools and their ability to support achievement of learning outcomes and development of employability skills is assessed. The findings support previous work showing an impact of learner characteristics on perceived helpfulness and ease of use for all tools. Results also show that the ability of forums to support achievement of learning outcomes predicts their perceived helpfulness, whilst development of employability skills predicts helpfulness of quizzes. In turn, helpfulness but not ease of use predicted frequency of these tools.

INTRODUCTION

Online learning offers several advantages over face-to-face learning including easier ways of providing feedback (Collis, De Boer, & Slotman, 2001), flexibility in the pace of learning (Sherman, 1998; Ward & Newlands, 1998), greater anonymity for learners (Howe, 1998), opportunities to develop generic skills (Oliver & McLoughlin, 2001) and reaching and motivating a large and diverse audience (Hoskins & Van Hooff, 2005; Plous, 2000). In universities, most online learning takes place via institutional virtual learning environments (VLEs), which can include a variety of features. Several studies have considered the what makes effective online learning and noted the value of i) dialogue e.g. forums ii) structured tasks and activities e.g. quizzes, and iii) learner control over activities e.g. through ePortfolios (Blackburn & Hakel, 2006; Buchem, 2012; Coomey & Stephenson, 2001). However, even with carefully chosen tools

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and the general benefits of online learning, there are various factors which are likely to impact how learners perceive and engage with online tools including the quality of the tools (Chang & Tung, 2008).

Davis suggested the Technology Acceptance Model (TAM) (Davis, 1989); based on this model, learners will use an online learning tool more when they see it as useful and easy to navigate (Joo, Lim, & Kim, 2011). Both factors may be influenced by the characteristics of the learner. For example, research shows that men find it harder than women to interact online (Arbaugh et al., 2008) and are less inclined to join discussions (Jackson, Ervin, Gardner, & Schmitt, 2001) despite having more knowledge of the web and using it more often (Chmielewski, 1998). In terms of age, little is known about the typical university age group, although one study suggests learners over 21 years engage more with online tools than those under 21 years of age (Hoskins & Van Hooff, 2005). The same study found that higher achieving learners were more likely to engage in forum use but there were no differences for quizzes. There is also evidence to suggest that learners with disabilities may experience additional challenges in accessing online tools (Crow, 2008).

One factor that is likely to influence the perception of how useful an online learning tool is to the learner is the relationship between the tool and the achievement of learning outcomes (LOs). The use of sophisticated online tools can go beyond participative learning to allow learners to construct knowledge using the tools (Cych, 2006; Heppell, 2002; Oliver & Goerke, 2007). This has been found for forums (Hew & Cheung, 2011; Kanuka & Anderson, 2007), ePortfolios (Carmean & Christie, 2006; Granberg, 2010) and quizzes (Gold, 2001) i.e. all tools frequently available within institutional VLEs. Furthermore, engagement with such tools has been linked to improved performance (Hoskins & Van Hooff, 2005).

As well as utility in achieving specific learning outcomes, it is possible that online tools support employability and may be perceived as useful because of this. Employability can be crudely defined as one's ability to get a job or progress within an existing job (Delaney & Farren, 2016). However, it is often considered as a specific skill set including core skills in Problem Solving, Communication, Working With Others, Time Management, Planning and Organizing and Finding and Using Information (Mason, Williams, & Cranmer, 2009; National Committee of Inquiry into Higher Education, 1997). These skills have become increasingly important within Higher Education which has resulted in universities making a concerted effort to support their development . Employability skills have also gained traction with learners; research shows learners are motivated by their long-term employability (Delaney & Farren, 2016) and that they recognise the value of developing these skills (Jackson, 2013; Moreau & Leathwood, 2006; Tomlinson, 2008; Tymon, 2013). Furthermore, there is evidence to suggest that use of online tools within a VLE can support development of employability skills (Heinssen Jr, Glass, & Knight, 1987; Hoskins & Van Hooff, 2005; Leese, 2009; Miura, 1987; Oliver & McLoughlin, 2001).

Based on the research outlined here, this investigation tested three hypotheses: a) The usefulness of online tools would vary with individual characteristics of learners, their perceptions of the quality of their online learning experiences and how helpful individual tools are perceived to be in supporting the development learning outcomes and employability skills b) Ease of use would also be impacted by individual learner characteristics and c) Perceived usefulness and ease of use would predict frequency of use in line with the TAM. For all hypotheses, three online tools available within the institutional VLE were examined: forums, quizzes and ePortfolios. This allowed comparisons between the tools for ease of use, usefulness and frequency of use. Table 1 provides details of features enabled in the VLE for these tools and an example of typical use at the institution.