Chapter 66

Incidental Learning in 3D Virtual Environments: Relationships to Learning Style, Digital Literacy and Information Display

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ABSTRACT

With teachers taking more interest in utilizing 3D virtual environments for educational purposes, research is needed to understand how learners perceive and process information within virtual environments (Eschenbrenner, Nah, & Siau, 2008). In this study, the authors sought to determine if learning style or digital literacy predict incidental learning, that is, learning that occurs without learners being instructed to attend to or learn presented information. One hundred and fifty-five education undergraduate students completed a series of tasks in a virtual environment where additional information unrelated to the tasks was present. The results indicate that in addition to incidental learning taking place in virtual environments, learning style and digital literacy seem to predict incidental learning in some instances. The results also suggest that information display, in this case visual salience, plays a role in incidental learning as the participants performed better on recalling information that was made more salient.

INTRODUCTION

Virtual Learning environments (VLEs) are increasing in popularity in educational contexts (see Eschenbrenner, Nah, & Siau, 2008). According to New Media Consortium and EDUCASE Learning Initiative (2007), virtual environments are “richly immersive and highly scalable 3D environments” (p. 18). Users explore virtual environments using an avatar, which is a virtual representation of the user within the world. Dickey (2003) proposes that VLEs are “networked, desktop virtual reality in which users move and interact in simulated 3D spaces” (p. 105). Warburton (2009) suggests, “a
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Incidental Learning

Incidental learning is a term that is both similar to, and a subset of, other terms in the learning literature. For example, Schugurensky (2000) considers incidental learning to be “learning experiences that occur when the learner did not have any previous intention of learning something out of that experience, but after the experience she or he becomes aware that some learning has taken place. Thus it is unintentional, but conscious” (p. 4). Incidental learning is a subcategory of, and can be considered a form of, informal learning. Marsick and Volpe (1999) define informal learning as the unstructured learning that takes place as people go about their daily lives; it typically occurs outside of formal institutions. As a simple explanation, Gass (1999) presents incidental learning as a “byproduct of other cognitive exercises…” (p. 319).

Simply, incidental learning is something that happens unintentionally while the learner is doing something else. This can have implications for education and student learning because, while learners are receiving explicit instruction, they could also be acquiring other information that exists within the learning context.

Learning Styles

The concept of learning styles has a history that spans nearly 50 years. The term “learning style” has multiple definitions in the literature. Pash-
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