Knowledge Presentation in a Virtual Learning Group Context

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ABSTRACT

This study examines how learners present their knowledge in the e-learning environment. This study adopted concept-mapping technology to observe fifty-four learners. There are two findings: first, the learners frequently employed relationships and examples, which assisted them in making connections between new and old knowledge throughout the learning process, thereby allowing them to acquire knowledge; however, they seldom used hierarchies and cross-links. Second, their knowledge presentation styles remained fixed while engaging in various tasks ranging in from the simple to the complex. Based on our findings, for instructors, it is crucial to consider the style of knowledge presentations made by learners because these presentations can the effectiveness of information technology on learning performance. For system designers, the systems should be designed to provide greater flexibility by increasing the opportunities for learner autonomy. Moreover, this study would encourage learners to apply critical thinking skills when reflecting upon their current knowledge.

KEYWORDS

Concept Map, Knowledge Presentation, Virtual Learning Groups

INTRODUCTION

The virtual learning groups based on a combination of network-based tools to enable collaborative learning and enhance communication and coordination capability (Tseng, Chang, Lou, Tan, & Chiu, 2012; Jonassen, 2000). Learners are able to coordinate with one another to set policies, make plans, execute these plans, and monitor their own activities to achieve the goal of completing a particular on-line course (Jonassen, 2000). The virtual learning groups provide a unique opportunity for the sharing of knowledge free from the constraints of time and place (Yu & Kuo, 2012). Thus, learners
have to effectively manage their learning process as knowledge is increased daily (Tseng et al., 2012; Tergan, Graber, & Neumann, 2006; McAleese, 1998). Therefore, explaining how learners construct their knowledge within the virtual learning groups is an important area of researcher.

According to the constructivist theory, knowledge is constructed by learners during their explicit presentation of knowledge on the basis of personal experiences, goals, prior knowledge and beliefs (Jonassen, 2000). Consequently, technology can be used to build learner-centered, learner-directed, collaborative learning groups that empower learners to make choices about how and what they will learn (Clinton & Rieber, 2010; Huang, 2002). For example, discussion forums, video conferences or emails enhance communication to reflect on thinking or solve problems by experts in a professional domain (Dalgarno, 2001; Tam, 2000; Brooks & Brooks, 1993). Constructivists also suggest that technology needs to help learners develop useful knowledge presentations and compare multiple perspectives on an issue by providing complex and ill-structured problems as they determine how and when knowledge is used (Karagiorgi & Symeou, 2005). Based on the constructivist theory (Martin & Rice, 2009; Karagiorgi & Symeou, 2005; Johnson & Street, 2004), e-learning designers are unable to determine a common set of learning outcomes because each individual is responsible for knowledge presentation and construction. It is not sensible to assume that all knowledge is presented explicitly as the learning system provides rich context and content (Tamets, Pata, & Laanpere, 2013; Fox, 2006). In other words, it is extremely difficult to predict how learners will present their own knowledge to construct their knowledge effectively.

The purpose of the virtual learning group is to make plans for alternative actions and to evaluate outcomes to determine future actions when the learning group is a collection of culturally diverse entities. The learners need to fully understand the other learners’ and instructors’ background, domain knowledge and the learning materials of virtual classrooms through extensive reading and suitable discussion processes (Hamel, 2003). However, learners who use IT to construct knowledge tend to be less tightly bound together than in face-to-face communication (Yu & Kuo, 2012; McGrath & Hollingshead, 1994). In this situation, learners who adopt IT to share knowledge may be easily thrown into confusion or withdraw from the discussion unless they are encouraged to question each other’s understanding, explain their own perspectives and construct their knowledge. Thus, there arises an issue: knowledge presentation plays an important role in helping learners to know what they know and to be able to learn new knowledge. Our study aims to examine the issue of how learners present their knowledge within the virtual learning groups.

**Knowledge Presentation and Learning**

Previous studies (Tseng et al., 2012; Huang, 2002; McAleese, 1998) have stated that knowledge is not gained but learned, and that learning depends exclusively on practice. Similarly, the process of knowledge construction is a method of group learning that promotes spontaneous, knowledge presentation, knowledge sharing and creative
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