Chapter 18
An Evaluation of Use of Multimedia Case Studies to Improve an Introduction to Information Technology Course

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ABSTRACT

For college graduates to be successful in today's global economy there has been an increasing demand for them to possess business knowledge as well as technical knowledge. To meet the demand, curriculum designers have sought to integrate new technologies, applications, data, and business functions into classrooms so that non-information technology (IT) majors can realize the benefits of IT. This paper discusses the results of research conducted on the use of multimedia case studies to address the curriculum designers' challenge. The authors have found that students, who are taught using multimedia case studies, perceived a comparatively greater improvement in their higher-order cognitive skills, ease of learning, team working skills, attitude toward information technology, and self-efficacy. This suggests a need for further research into adopting such instructional materials for teaching non-IT majors and for developing other innovative instructional materials.

INTRODUCTION

Need for Development of Context-Based Collaborative Skills

For today's graduates to achieve success as professionals in a global world, they must acquire a new set of skills, many of which have yet to become a major part of traditional educational pedagogies. Curriculum designers are increasingly called upon to create a suitable balance between technical knowledge and business knowledge (Trauth, Farwell, & Lee, 1993; Kirsch, Braun, Yamamoto, & Sum, 2007). To fulfill such a demand, graduates must gain strong leadership skills, which are required for job advancements, as well as become proficient in information technology (IT) concepts (Glyer-Culver, 2003). IT refers to anything related

DOI: 10.4018/978-1-61350-468-0.ch018

to computing technology, such as networking, hardware, software, systems, the Internet, or the people that work with these technologies.

Another unprecedented requirement is for students to acquire stronger soft skills and cognitive skills (Kirsch et al., 2007). Critics of traditional IT programs claim that IT graduates demonstrate "brilliant" technical expertise but severely lack social skills (Slater, McCubbrey, & Scudder, 1995). As those needs of business and industry expand and evolve, IT curricula should integrate new technologies, applications, data, and business functions into both IT and non-IT classrooms (Trauth, Farwell, & Lee, 1993; Savander-Ranne, Lunden, & Kolari, 2008). Unfortunately, in today's information-driven environment these essential ingredients rapidly become obsolete.

Forgues and Koskela (2009) demonstrate that traditional procurement processes in companies reinforce socio-cognitive barriers that hinder team efficiency. They also illustrate how new procurement modes can transform the dynamic of relationships between the client and the members of the supply chain, and have a positive impact on team performance. Their paper demonstrates first that problems with integrated design team efficiency are related to *context* and not process - they are not technical but socio-cognitive; second that fragmented transactional contracting increases socio-cognitive barriers that hinder integrated design team performance; third that new forms of relational contracting may help to mitigate socio-cognitive barriers and improve integrated design team performance, fourth that changing the *context* through procurement does not address the problem of obsolete design practices. Taber (2008) argues for emphasis on collaborative learning for preparing people to deal with stressful and challenging situations in their work. Pittaway and Cope (2007) argue that experiential, work-based learning is needed to simulate contexts similar to those in which entrepreneurs learn.

Kirsch et al. (2007) further pointed out that students, who lack context-based collaborative skills (such as team working, positive attitude, and self-efficacy), find more difficulty in obtaining and retaining employment. They added that at the same time cognitive skills give students a foundation upon which future learning and skills development can occur.

Types of Interventions Available to Teach These Skills

In recent years, an increasing number of programs have required students to participate in teamwork assignments and presentations and to "solve business problems experientially through a cross-functional approach" (Slater, McCubbrey, & Scudder, 1995). Some educational institutions have been successful at extending their curricula beyond the traditional lecture method by incorporating information technologies, including online discussions and field experiences into their teaching methods (Leidner & Jarvenpaa, 1995; Moffett, 2001; Sudzina & Suzina, 2003; Santhanam, Sasidharan, & Webster, 2008). Other methods focus on the use of hands-on projects, service projects that benefit communities (Turner & Grizzaffi, 2003), or other forms of problem-based learning (Franz, Hopper, & Kritsonis, 2007), to better facilitate practical learning experiences. Leidner and Jarvenpaa (1995) suggested that integrating more IT elements into classrooms does not inherently improve the required skills of today's students. They stress that the IT elements need to be used innovatively to enable educators to effect changes in teaching and learning processes at their institutions. However, only a few studies have measured what types of interventions are likely to alter students' perception.

Case studies have greatly succeeded in improving the learning experiences of undergraduates because they help students make connections between theory and its actual practice (Mizukami, 2002; Butler, Lee, & Tippins, 2006) and greatly aid in teaching critical thinking skills (Lee, 2007). Case-based instructional methods have also been