Successful Implementation of a Computer-Supported Collaborative Learning System in Teaching E-Commerce

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ABSTRACT

This paper describes the successful application of a computer-supported collaborative learning system in teaching e-commerce. The authors created a teaching and learning environment for 39 local secondary schools to introduce e-commerce using a computer-supported collaborative learning system. This system is designed to equip students with additional knowledge and skills in e-commerce. In this paper, the authors focus on the practical implications of the project-based learning approach on the teaching and learning of introductory e-commerce in the business context. Results indicate that students are interested in the proposed approach, particularly in learning by doing. In conclusion, the authors describe in this paper the successful development of a project-based teamwork game environment for the teaching and learning of e-commerce in schools. This environment can enrich learning and the pedagogical use of development tools in the academe. Finally, the paper puts forward two propositions that can guide hypothesis generation in future research.

Keywords: Collaborative Learning, E-Commerce Education, Educational Game, Project-Based Teamwork Game, Secondary Education

INTRODUCTION

The Internet has altered not only the way businesses are carried out but also the curricula of business schools. To equip graduates with the skills required in today’s modern economy, new courses have recently been developed and integrated with existing programs to teach students the basic concepts of e-commerce. With the maturity of e-commerce technologies, an increase in the number of business transactions conducted and completed over the Internet

DOI: 10.4018/ijicte.2013100101
is expected. Notably, the development of e-commerce depends on the familiarity and trust of users (Gefen, 2000). Thus, experts suggest that e-commerce education should commence as early as possible to allow students to broaden their horizons and explore the e-world. In this regard, e-commerce education should be further publicized and extended to secondary schools. However, a survey on business education at secondary and postsecondary levels indicated that the infusion of e-commerce topics into existing curricula does not adequately prepare students for roles in companies where e-commerce is an integral part of daily operations (Morrison & Oladunjoye, 2002). The situation is even worse in Hong Kong secondary schools, wherein computer literacy courses do not specifically cover e-commerce despite the inclusion information technology (IT) skills in the curriculum.

E-commerce is technologically oriented business involving multiple disciplines, most of which are discussed in universities rather than in secondary schools. The subject e-commerce is new not only to students but also to secondary school teachers. Hence, teaching the subject in the business context is considered difficult and challenging. In addition, the traditional face-to-face approach may not be useful in stimulating the interests of students. Instead of relying on the capability of secondary school teachers to handle the tasks, the teaching process can be deconstructed into a series of processes that can be provided or supported by tertiary-level teachers and IT professionals. To promote the understanding of e-commerce in secondary schools, the Hong Kong Special Administrative Region (HKSAR) government has funded teaching projects that focus on teaching e-commerce in secondary schools using non-traditional approaches. Consequently, several website design competitions for secondary students have been conducted. Most of these competitions, however, have focused either on the content value or on the attractiveness of web pages, thus overlooking the importance of practicability and applicability.

To teach e-commerce students, Dhamija, Heller, and Hoffman (1999) have provided a web-based market system through which participants may experience the virtual buying and selling of goods and services. In this study, we tackle the problem by adopting a game-based teaching approach for the following reasons. First, the approach adopts an open learning setting. “In the open learning settings, the learners are able and encouraged to work at their own pace. It allows the learning environment to be free from some of the more traditional constraints of education and makes learning more learner-centred” (Forsyth, Jolliffe, & Stevens, 1999, p. 4). Second, the approach provides flexibility for students who come from different backgrounds and possess varying levels of exposure to e-commerce. In the proposed method, these students can collaborate and learn at their own pace. Third, the approach serves as an important factor in the efforts to motivate secondary school learners, as game-based learning can be more enjoyable than traditional learning (Ebner & Holzinger, 2007). The setting of the game is similar to a school project, wherein students must work both as members of groups and as individuals. Game-based learning is similar to problem-based learning (PBL) in terms of the way courses are constructed and taught. In PBL, specific problem scenarios are presented within a context as stimuli and focus on student activity (Pearson, 2006). PBL requires that “students work co-operatively in a small group, usually with the assistance of a tutor and with access to other resources, to: (a) clarify the problem; (b) identify learning needs to address the problem; (c) undertake individual reading/study; and (d) apply newly acquired insights and understandings to re-address the problem” (Pearson, 2006, p. 57). Our game should provide a suitable learning material that is delivered in acceptable modes to facilitate learning. Based on our experience of teaching e-commerce courses in the undergraduate and postgraduate levels (Ngai, 2007), we identified a number of fundamental concepts for establishing e-
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