Applying Open Course Ware to Improve Non-Information Majors’ Computer Skills and Self-Directed Learning

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ABSTRACT

In recent years, more and more institutions are using e-learning techniques to help students learn better. Many online resources such as Open Course Ware enhance students’ finding their own solutions to solve problems. Teachers are also better able to create and locate digital materials for their students. This study aimed to demonstrate the effects of using Open Course Ware in a Cloud Classroom to improve the computer skills and the ability for self-directed learning (SDL) of students who are not information or technology majors. This study focused on university students taking a course titled ‘Information Technology: Office Applications’. Data from students’ computer skills exams and results from a self-directed learning scale were compiled and analyzed. The findings showed that students who used Open Course Ware improved their overall computer skills and the ability to self-direct their learning than those did not use it. The findings and results of this study could contribute to the further development of web-based learning and offer a creative teaching direction to teachers who are presently using web-based instruction or those who may want to do so in the future.

Keywords: Cloud Classrooms, Computer Skills, E-Learning, Open Course Ware, Self-directed Learning

1. INTRODUCTION

In e-learning, two major traditions have been prevalent: one where connections are made with people and the other where they are made with resources (Weller, 2007). Open education brings some fundamental challenges to the way we think about higher education and the institutional arrangements within which it is organized (Katz, 2008; Liyoshi & Kumar, 2008). Open source learning is one example, with its free and multitudinous resources, as the Internet serves as a broad database, which
is international and unlimited for many people. (Palfrey & Gasser, 2008; Caruso & Salaway, 2008). If teachers can appropriately use the materials on the Internet, much content can be delivered to students with many savings on resources. With appropriate skills, students can search and find different kinds of open source resources on many websites, which may contain really useful materials for them. Recent estimates suggest widespread adoption of Open Courseware (OCW) resources, such as lecture notes, reading lists, course assignments, syllabi, study materials, tests, samples, simulations, and the like (Educause Learning, 2006). A survey of public administration in 13 European countries reported that 78% were using open source materials (Ghosh & Glott, 2005).

Successful learning depends not only on individual activities and resources, but also on experience in collaborative environment (Bjekić, Krneta, & Milošević, 2010). For educational effectiveness, students may benefit more from web-based learning environments than from traditional ones. Some restrictions, such as space and time, limit effectiveness in traditional classroom teaching. However, in web-based learning, learners can handle their learning schedule and course flexibly and efficiently; they may hand in their homework and study course materials on the Internet anytime and anywhere. During the past decade, online collaborative technologies combined with a shift in educational practices have lead toward increased sharing of educational content (Lee, Lin, & Bonk, 2007).

This study explored how to use OCW in a cloud classroom, which is a online learning environment developed by Ming Chuan University, to improve the computer skills and the ability for self-directed learning of students not majoring in information or technology-related subjects. Although e-learning is increasingly popular and common in the 21st century, some teachers are still used to traditional teaching using blackboard and books. Moreover, some teachers do not accept using computers or educational technologies in their teaching as they cannot personally use the technologies with ease. However, it is not necessary for a teacher to build up a course website and design digital materials in order to implement e-learning. The term “teaching” is used in two ways: teaching as teacher activities and teaching as the system of instructional activities (Bjekić, Krneta, & Milošević, 2010). If teachers can search, filter, and provide useful resources and teaching materials from the Internet, their students could benefit from these online learning materials.

E-learning can offer a rich choice of learning experiences that fits specific needs, aspirations and learning styles; so it can facilitate personal growth and professional development (Flood, 2002). In this study, we tried to help teachers who have difficulty in designing digital materials to find a simple means for implementing e-learning. Some teachers who cannot or have difficulty in preparing digital materials such as video recording, could search for appropriate learning materials in the open environment, for example iTunes U (iTunes University), to find the resource they need. One of the advantages is that teachers do not have to spend extra money or much time, and they can still obtain many useful materials for their students.

In order to examine the effects of enhancing students’ computing skills and self-directed learning, two class cohorts from the course titled “Information Technology: Office Applications” were chosen for experiment in this study. The researchers expect this study will contribute to theory development of web-based learning, and offer a creative teaching direction for teachers using web-based instruction or who want to do that in the future.

After entering the 21st century, technology is changing the world; globalization is breaking through cultural, economic, political and social barriers of nations (Mugimu, 2006). E-learning is a new teaching style for both teachers and students, much like the traditional overhead transparency projector being replaced by digital visual aids (e.g. Microsoft PowerPoint). Although digital format is not necessary suitable for every subject, it can really increase efficiency in teaching. The traditional overhead
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