
Chapter XVIII

Using Web-Based Technology to Support and Enhance the Learning Experience in a Community-Learning Projects Course

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ABSTRACT

Project-based courses present students with unique support and organizational challenges. In these types of courses, students must assume greater responsibility for learning and organizing and must direct their efforts toward satisfying a unique, sometimes ill-structured problem. The enhanced learning potential in these courses is significant; however, so are the risks. Discussed in this chapter are a variety of Web-based technologies that were used to support students in their project development efforts, thereby realizing benefits of project-based courses while ensuring project success. A demonstration of how students in a project-based capstone course used this technology to assist them in developing community-based information systems is presented. More importantly, it also demonstrates how the tools, selected because they contributed to project success, can extend the students' learning environment and enhance their learning experience.

INTRODUCTION

The capstone course for our Management Information System undergraduate degree requires students to design, develop, and implement information systems for community organizations. This course has proven to be successful in developing career-enhancing skills and abilities, and increasing student self-confidence and employability, all while providing useful products for the community. Since its inception, the quality and difficulty of the projects and the satisfaction of the sponsoring organizations have been consistently increasing. One of our area's largest employers has committed to providing our program with multiple projects each year and uses the program as a source of development for projects that might otherwise be too risky or unprofitable to undertake. The contribution of the projects has led to widespread community recognition for our program and students and a broader set of project sponsors (Hoffinger, 2002).

The success of this course can be attributed to two factors. First, its design is based on a long history of widely accepted community-, project-, and technology-based learning theories. Second, its implementation is based on the use of readily available Web-based tools such as those used for email, group collaboration, Web search, and project management. In the background section of this chapter, we will review the theories that describe the benefits that can be realized through this challenging form of course design and that were used to guide its development. The course description section will present the learning objectives of the course and the tasks that must be accomplished by the students for successful project completion. The Web support section will describe the Web-based tools that were implemented in the course to help realize the benefits of the design and will discuss how those tools provided for student success and learning enhancement. Presented in the last section will be lessons learned and conclusions reached.

THEORETICAL BACKGROUND OF THE COURSE DESIGN

Designing a course solely based on technology is not sufficient. Schneider (1994) stated that instruction must be grounded in educational theory and not be solely based on educational content or be based on the technology used to deliver the information. LeJeune and Richardson (1998) believed that while traditional learning theory can be expected to evolve with time as educational technologies become more sophisticated, the majority of traditional learning theories will still serve their original intent, which is to facilitate the transfer of knowledge and promote the construction of new instructional models.

The design of this course is consistent with the engagement theory for technology-based teaching and learning (Kearsley & Shneiderman, 1999). This theory has emerged from Kearsley and Shneiderman's experiences teaching in electronic and distance education environments and has much in common with many of the well-known community- and project-based learning theories. The fundamental idea underlying this theory is that students must be meaningfully engaged in learning activities through interaction with others and with worthwhile tasks. Through engaged learning, all student activities involve active cognitive processes such as creating, problem solving, reasoning, decision making, and evaluating. In addition, students are intrinsically motivated to learn due to the meaningful nature of the learning environment and activities.

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