Chapter 7
Developing a Collaborative ELearning Construction Framework for Blended Learning

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ABSTRACT

This paper identifies and discusses some benefits, challenges, and barriers that face instructors in adopting a collaborative elearning construction environment for blended learning. It also proposes several suggestions for what can be done to promote knowledge sharing. The author goes through a full-life cycle of designing and developing SCORM-conformant elearning that allows instructors to harness the power and affordance of emerging technologies to develop a blended learning environment. The author discusses the evaluation of such a collaborative blended learning framework and outlines its future directions.

INTRODUCTION

Education is more accessible, adaptable, and equitable thanks to the affordance of educational technologies. Advances of emerging technologies, such as Web 2.0 and cloud computing, expedite the growth of collective intelligence and the process of offering knowledge in digital formats. Domain experts can now contribute to the ever-growing

knowledge base over the Internet without the help from programmers. Consequently, adults have the option of choosing excellent blended learning curriculum to advance their career with minimal geographical restraints. Further effort is needed to promote blended learning with sound pedagogical strategies based upon state-of-the-art technologies and collective intelligence.

In our study we explored ways to encourage faculty to focus on blended learning pedagogy and curriculum design with less technological

overhead and engage students in ubiquitous learning through a scalable and adaptive elearning framework. Our students reflect the diverse demographics of New York City. The average age of our students is much higher than that of traditional students. That is because many return to school for career advancement after working or staying at home for a long time. A lot of them are still maintaining a full-time or part-time job, thus having to juggle work, school, and family. Also, many students are the first in their families to attend college and lack fundamental skills that are essential for their success in college. Professors often lament the fact that their students lack the basic knowledge or skills when entering their classes.

We address these issues by developing a scalable, shareable, and sustainable blended learning framework that can be distributed through computers. The resulting elearning building blocks can automate the assessment processes, provide just-in-time feedback, and adjust the teaching material dynamically based upon individual student's strengths and weaknesses. Once built, these self-contained learning modules can be easily maintained, shared, and re-purposed, thus cutting costs in the long run. This can encourage faculty from different disciplines to share their best teaching practices online. The end result of the project is a sustainable knowledge base that can grow over time, benefiting all the disciplines at the college, and help our students learn anytime anywhere.

We conducted a pilot study in the spring of 2009 and collected student feedback through anonymous surveys regarding the usability of the learning modules. Lessons learned were the basis for the second round of learning module design and development. Based upon the positive result, we implemented the framework in full-scale in the spring of 2010 in six of our AC101 courses (Introduction to Computers) taught by 3 instructors. We have been able to embed lecture notes, readings, activities (e.g., games, puzzles, etc.),

assignments, and assessment to each elearning module as a chapter. We resembled modules to fit our instructional needs in the middle of the semester. We were encouraged by the collaboration among faculty and our blended learning modules were easy to use by students.

Blended Learning for Adults

Adult learners are autonomous, self-directed, goal-oriented, and relevancy-oriented (Knowles, 1998). A teacher should act as a facilitator that motivates adult learners to engage in meaningful learning activities that lead to knowledge retention and learning transfer in the real world. Blended learning proved to be an effective learning environment that enables adult learners to combine face-to-face learning and online learning. Chickering and Gamson (1987) state allocating realistic amounts of time means effective learning for students and effective teaching for faculty. The interest of blended learning is increasing rapidly (Thorne, 2003; Boyle et al., 2003; Duhaney, 2004; Kim, 2005). Blended learning Contents grow exponentially with lessons and good practices documented (Chickering & Gamson, 1997; Ellis, Wagner, & Longmire, 1999). We need a systematic approach that integrates these good practices and effective approaches so that blended learning modules can be shared and reused among instructors and adult learners.

SCORM-based Blended Learning System Design

Our design of elearning modules was informed by the extensive research on Computer-Aided Instruction (CAI) for individualized learning. Learning with a personalized tutor has proved to be one of the most effective ways of learning. There is overwhelming research to support the benefits of one-on-one tutoring in improving students' grades, problem solving skills, and motivations (Bloom, 1984; Slavin et al., 1991;

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