

eLearning Courseware Development: Experiences and Lessons Learned from AU-PLUS System

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Abstract

In response to the rapidly expanding demand for online education in Thailand, College of Internet Distance Education (CIDE), Assumption University, with the partnership with Samart Telecoms, Thailand, has launched a new eLearning system entitled "AU-PLUS." This system has been used for its on-line Master's degree in Management program since January 2006. Gaining familiarity with new eLearning tools, such as AU-PLUS system, is a challenging process for three parties involved with the usage of this AU-PLUS system: a content expert, a production team, and a facilitating instructor. The roles of these three parties must be clearly stated and all processes from the introductory stage of the courseware development to its final stage of production must be well organized. In addition, a good understanding of the concept of eLearning with appropriate tools is vital for producing an effective courseware for learners. The existing eLearning systems can be broadly categorized into two major components: first, the content section, and second, the activity section. It is also recommended by the author of this paper that the interaction, and collaboration of these two components take up interesting forms and thus need to be promoted.

This paper presents information based on the author's personal experiences with courseware developmental at CIDE and also

lessons learned from "AU-PLUS" system. The information includes, first, the roles and responsibilities of those involved, second, the courseware development process -- from the introductory stages to its final stage of production, and third, the concept of eLearning systems. Recommendation concerning the usage of "AU-PLUS" in eLearning environment has also been remarked.

Introduction

The advancement of Information and Communication Technology in recent years has increased the quality of education in both formal and non-formal environment. Among wide range of Information and Communication Technologies, eLearning is adding new value to learning experiences by accommodating different learning styles matching the individual needs, fostering self-paced learning, and most significantly, promoting life long learning (Gagne & Twitchell, 1991; Knapp & Glenn, 1996; Li & Akins, 2005).

To support the demand for online education in Thailand, Assumption University on April 15, 2002 established the College of Internet Distance Education (CIDE). CIDE is now fully equipped to promote not only eLearning technologies, but also expand students' learning opportunities everywhere. Our philosophy at CIDE is to provide "One-Stop Services for Worldwide eEducation for Anyone, from

Anywhere, and at Any Time.” By offering eApplication, eEnroll, ePayment, eLearning, and, eGraduation, we have built our college as one-stop service for worldwide eEducation.

By reviewing the success stories from various higher education institutions offering eLearning program, such as Jones International University -- the first accredited virtual university in the United States, the University of Phoenix -- offering eLearning degree program to the largest numbers of students (approximately 200,000), the Universiti Tun Abdul Razak (UNITAR) -- the first virtual university in ASEAN region, located in Malaysia (Charmonman, 2005), CIDE with a collaboration with Samart Telecoms have developed their own model of courseware and Learning Management System (LMS) called “AU-PLUS”. The first use of “AU-PLUS” system was for the School of Business Administration for its on-line Master’s degree in Management program starting in January 2006, thus declared to be the first eLearning Program in Thailand.



Figure 1: AU-PLUS system
(<http://cide.auplus.au.edu>)

M.Sc. in Management (eLearning) at CIDE

The AU-PLUS system for Master of Science degree program in Management

consists of a total of 23 coursewares. Fifteen of the coursewares have been fully developed by May 2006, while other nine coursewares will be completed by September 2006. The complete courseware package consists of 6 core courses and 16 major courses. The 16 courses will be selected from the 4 different majors namely: (a) Small and Medium Enterprises Management, (b) Human Resource Management, (c) Technology Management, and (d) Strategic Marketing Management) and an additional research project course.

Roles and Responsibilities of Persons Involved

In developing and delivering the courseware, three major parties must be involved: (a) Content Expert, (b) Production team, and (c) Facilitating Instructor. The roles and responsibilities of each party are as follows:

Content expert is one who develops Courseware and also who will deliver the lesson. Content expert will be responsible for:

1. Creating contents of the course (15 lessons, each is a 3-credit hour lesson).
2. Recording the videos and audios for the online lessons. Only Lessons 1 and 15 will be recorded in video format while lessons 2-14 will be recorded in the audio formats. The length of both video and audio will be approximately 1 hour per one lesson.
3. Creating course syllabus comprising of six major elements: (a) course description, (b) course objective, (c) required texts/materials, (d) additional readings, (e) course assessment, and (f) topics and subtopics.
4. Creating detail lesson plans of the 15 lessons for SAMTEL team regarding the courseware production.
5. Creating PowerPoint presentations for all the 15 lessons (maximum of 40 slides for each lesson). Each slide should include

only the main ideas (approximately 8 lines for each slide).

6. Creating sheets/handouts (if any) for students to download.

7. Assigning online activities according to the course assessment. Content experts may select appropriate online media, such as chat, email, two-way conference, discussion board, and poll vote.

8. Assigning activities according to the course assessment. The activities, such as exercise, assignment, report, and quizzes may be created and scheduled for the students.

9. Creating assessment guidelines of all activities for facilitating instructor who will later run the course.

10. Summarizing the contents of each lesson.

11. Developing 7 set of the final examination that will be used one set for each semester.

12. Creating glossary with an assist from his/her course coordinator.

13. Creating index with the support from his/her course coordinator and SAMTEL production team.

14. Modification and improvement of the courseware will be made in collaborating with the content expert, course coordinator, and SAMTEL production team until the courseware is ready for delivering.

Production Team Prior to the recording process, content expert together with courseware production coordinator should discuss the details of the preferred theme, colors and graphics of the production. Shortly after that, the production team should present 2 lessons -- lesson 1 which is a video format and lesson 2, an audio format to the content expert. After the review and comments from the Content Expert, the production team will revise the lessons accordingly. Meanwhile, content experts must send all related materials to the production team. The materials comprise of:

a course syllabus and lesson plans (15 lessons), PowerPoint (15 lessons), chapter summary, questions, answers and assessment guidelines for exercises, quizzes, and/or reports according to the course assessment, glossary, and index. Additionally, CIDE requires the content expert to submit 7 sets of the final examinations to CIDE.

The production team will be involved in the reviewing process and in the following responsibilities: sending CD or providing the URL link of the production to the content expert. After receiving suggestions/comments from the content expert, the production team will propose the revising plan to the content expert. The comments form and the courseware evaluation survey form may be used for comments/suggestions to evaluate the steps/actions taken. The production team will submit the production for 5 lessons at a time (for 3 submission times). The revision will be made until the content expert is satisfied with the courseware production.

Facilitating Instructor will be responsible for facilitating the efficient delivery of the courseware developed by the content expert. While students will have opportunities to learn on their own pace through the Learning Management System (LMS), the facilitating instructor will provide support by giving feedback on assignments, quiz or examination. In addition, facilitating instructor will promptly response to any questions related to the course. Students will be able to send email to their facilitating instructor anytime at their convenience, or to chat in the chat room by appointment. The assignments of the facilitating instructor may be categorized into two major components: (a) regular basis and (b) grading task. Details are as follows:

Regular Basis:

-Facilitating instructor will post the announcements and arrange the

activities as assigned by the Content Expert of the course.

- Facilitating instructor will monitor and encourage students to participate in both visualized lesson (approximately 1/3 of the three-hour lesson period) and online activities (approximately 2/3 of the three-hour lesson period).
- Record students' attendance and their grades.
- Set date and time on group meetings for students and also between students and facilitating instructor.
- Create or assign student groups as assigned by the content expert or as appropriated to the activities.
- Provide immediate feedback to students through email or chat within 24 hours.

Grading Task:

- Facilitating instructor will score and grade online activities, such as chat, web board, and/or polls.
- Score and grade each content activities assigned which may include exercise, assignment, report, and/or quizzes.
- Follow the deadline for assignment submission as assigned by the content expert or as appropriated.
- Schedule date and time for final exam and supervising the students' grades.
- Assign final grade for students according to the course assessment created by the content expert

Courseware Development Process

All processes from the introductory stage of the courseware development to its final stage of production must be well organized. Steps for the content expert for courseware development can be summarized as follows:

Agreement for the production of courseware Content experts, after reviewing of course description and their assigned job,

and submitting of their CV, Photo, and course syllabus for CIDE to review, they will sign CIDE agreement for the production of courseware.

Collection of Course Materials

One month later, content experts must submit:

- Lesson plans (15 lessons)
- PowerPoint Presentation (15 lessons)
- Chapter summaries, questions, answers and assessment guidelines for exercises, quizzes, and/or reports according to the course assessment
- Glossary & index
- 7 sets of the final examinations

Pre-production Process

- Production team, recording team, and the content expert plan for the production.
- Recording team gives suggestion to the content expert concerning the recording process.

Production Process

- Arrangement for video records (lessons 1 and 15) (1day)
- Arrangement for audio records (lessons 2 to 14) (2-4 days)

Production Reviewing Process

- 1st review and revision of lessons 1-2. Two parties are involved: Content expert and SAMTEL production team. Tentative timeline is a week after the sound and video records.
- Submission of lessons 3-15 (tentatively a month after the completion of recording process). Revision will be made according to the comments from the content expert until the courseware is ready to be delivered.

Concept of eLearning System

eLearning system is designed to help the content expert to integrate course material

with rich multimedia content by creating a virtual classroom for online learning and providing various online tools for learning activities. Each courseware will consist of 15 lessons. For a three-hour teaching lesson, each course can be divided into two major sections: 1) content of the lesson and 2) the activities. The details of each of the section are as follows:

Section 1: Content of the lesson

This section describes how the student will use the on-line multimedia sound/video presentation created for each lesson in the courseware. Each multimedia sound/video clip will be an hour long (approximately 1/3 of a three-hour lesson). Each clip will consist of a lecture from the content expert (either video or audio), with a comments of 5-10 lines along with a few visuals and a summary. The student will be able to find and download additional reading materials provided in the Course Syllabus. All the content for the course will be developed solely by the content expert. The details of the tasks and responsibilities of content expert are discussed in the later section. The content section may be also referred to the “*virtual classroom*” of the AU-PLUS Learning Management System (Figure 2).



Figure2: AU-PLUS Virtual Classroom

Section 2: Activities through the courseware for two hours (2/3 of a lesson)

Samples of activities that can be assigned through the courseware (AU-PLUS

system) are listed below:

- Case study may be assigned. This activity could be either an individual or a group activity.
- Exercises and quizzes may be given at the end of each lesson to assess students' understanding.
- Assignments may be assigned and it can be setup for an individual, a setup as a group activity, or both.
- Chat activity can be assigned to the students so that they will be able to communicate with the instructor or their classmates synchronously.
- E-mail will be used to remain in contact between student and instructor and also among students. It is a CIDE regulation that the instructors must respond to all questions and concerns within 24 hours.
- Shared folder may be used by students to upload useful files, so that other students can access or download them for further study.
- Group meetings may be assigned to students using chatroom, e-mail, or message board as a communicating tool.
- Message Board can be used by content expert, instructor, and/or students in posting topics and information related to the topic. Students will then research the topic and post their questions/ answers.
- Report may be assigned. Students can submit their report to the instructor through email attachment, or by uploading the report through the system.
- Poll vote with unlimited choices can be created by an instructor to check for students' feedback toward the course or any related topics to the course.
- Midterm exam may be given. Similarly to the submission of a report or quizzes, student will be able to

submit their exam through email or through the system.

In summary, content experts could assign any of the appropriate activities through the LMS. Also, facilitating instructors can employ any tools to communicate with the students and to enhance students' learning. The study tools are located on the left menu bar as shown (Figure 3).

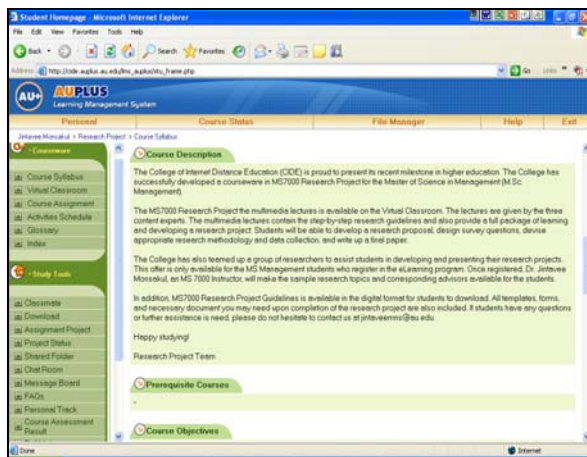


Figure 3: AU-PLUS Learning Management System

“AU-PLUS” Enhancements- Remarks

For enhancing eLearning mode, the author would like to propose that due considerations are given to the standard of Sharable Content Object Reference Model (SCORM) 2004. In the SCORM world there is a set of services that launches learning content, keeps track of learner progress, figures out in what order (sequence) learning objects are to be delivered, and reports student mastery through a learning experience.

It is also important that new educational perspectives are applied, such as Gagne's events of instructional design. Gagne created a nine-step process called the events of instruction, which correlate to and address the conditions of learning. Gagne's 9 events of instructional design provide a good starting point for designing any instruction

including in eLearning mode. Gagne pointed out that these events of instruction do not always occur in this exact order; although this is the most probable order. Practically, all learners already have some events; therefore, those events are not needed to be mentioned again to the learners. If one or more events are provided by a learner himself, particularly when the learner is a self-learner, there is no needed for teachers to mention those events again (Gagne & Briggs, 1974; Gagne, Briggs, & Wager, 1992; Gagne & Twitchell, 1991)

According to Gagne's aspect of learning hierarchy of intellectual skills, he stated that prerequisite skills must be attained before moving toward more complex learning. Gagne developed a hierarchy for learning in order to assure that these skills were acquired. Since the 9 instructional events help learners to proceed from a beginning to an achievement level, all the events should be applied into each lesson as follows:

1. Gaining attention from learners
2. Informing learners the objective
3. Stimulating recall of prerequisite material
4. Presenting stimulus materials
5. Providing learning guidance
6. Eliciting the performance
7. Giving feedback about performance correctness
8. Assessing the performance
9. Enhancing retention and transfer

In addition, interactive activities need to be promoted. According to Maxwell, Doherty, and Jones (2005), the evidence in supporting high interactive learning that can dramatically increase learning outcomes was presented. They stated that people remember more of when they do (90%), say or write (70%), hear and see (50%), see (30%), and read (10%). Accordingly, interactive learning activities may promote students' learning. The activities, such as, synchronous

and asynchronous communications through chatroom and discussion board where students need to think, write, and response to their peers may be one of the options. Last but not least, online assessments are needed to be effective. As stated by Wiliam (2006), “while research shows that a focus on assessment for learning is the most powerful, and yet most neglected, aspect of teacher practice”. In eLearning environment, assessments are even more important since there is no immediate response back from the students when compared to the tradition mode of learning. Therefore, assessment for eLearning should be varied and emphasized more on performance based. Both formative and summative assessments should also take into consideration and needed to be enhanced.

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