
Online Degree Program Development

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ABSTRACT

We will outline an online degree program development, and the steps involved in development of online courses and programs at The University of Texas of the Permian Basin (U.T.P.B.). We will discuss the need of developing online degree programs. We will also look at incentives for developing online courses and programs, training requirements, required course elements, good practices in online course design, online course syllabus template with a typical schedule, and a new course launch meeting check off list.

The advantages of online courses are they can easily be reviewed and changed for currency and accuracy. As the world-wide-web becomes a state-of-the art delivery medium there is a need among educators and trainers to obtain knowledge about the tools needed for developing and implementing online courses. Easy access to education and training of potential students is a growing need, as well as servicing industry needs through asynchronous learning for employees.

INTRODUCTION

With the widespread use and the rapid growth of the Internet, educational and training institutions around the globe are racing towards using the Internet as a new medium of delivery. The world-wide-web is a powerful and exciting medium for communication and as such is a valuable resource for faculty for delivering online instruction. Its ease of use and the capacity as a repository of information and the interactive delivery of content makes it an effective option for furthering knowledge and skill.

There are various methods of developing online courses. There are private organizations that develop software specific to on-line education such as e-College, Blackboard, Web CT, and Top Class to name a few. Many education institutions are using these private distance learning providers for taking advantage of their infrastructure, instructional design features and technical support for delivery of online courses.

INCENTIVES FOR DEVELOPING ONLINE COURSES

Robleyer (1999) found that many administrators fear that schools will become extinct if they do not offer web based distance education courses. A 2006 survey of online learning of over 2, 200 colleges and universities in the United States showed that nearly 3.2 million students took one or more online courses in 2005 representing close to 17 percent of all higher education students (Allen and Seaman, 2006). The number of online students has shown a growth of 20 percent annually since 2002 with a 35 percent growth in 2005. Online learning is predicted to become a dominant form of training within organizations in the future (Kim and Bonk, 2005).

Universities are making a major push towards offering online courses. The instructor has to change roles with changing platforms. Some instructors who taught online felt that they were not rewarded for the extra work and time needed to prepare and execute the online courses (Wilson, 2001). Faculty should be given a release time or stipend to develop online courses (O'Quinn and Cory, 2002). Most universities offer incentives for faculty teaching on-line courses (Boettcher, 1998). The incentives include a small monetary reward and/or a reduction in the teaching load during the semester the course is taught.

To speed the development of U.T.P.B.'s online courses and online programs and to speed the development of courses dealing with energy topics, our Provost and Vice President for Academic Affairs sent out an announcement offering a new incentive program. The new incentives provided stipends and support funding for programs. Requests had to be submitted through our dean. The incentives are shown in the table 1.

Table 1: Incentive Program for Online Courses and Programs at U.T.P.B.

	Course Developer	Program Marketing/Support
New Online energy course as part of a new online program	\$7,000	\$1,000
New Online energy courses	\$6,000	
New Online course as part of a new online program	\$5,000	\$1,000
New Online course	\$4,000	
New energy course <100% online as part of a new program (Face-to-face, Hybrid, Web-enhanced))	\$3,000	\$1,000
New energy course <100% Online (Face-to-face, Hybrid, Web-enhanced)	\$2,000	
Modify existing online course as part of a new online degree program	\$1,000	\$1,000

Proposals for new program funding had to describe:

1. The program name and basic description
2. Learning outcomes of the program and proposed assessments
3. Target audience for the program and description of the demand for the program
4. A timeline for the development of courses and the program's delivery.

THE PROPOSED ONLINE TECHNOLOGY DEGREE PROGRAM

The total credits required for a B.A.A.S. (Bachelor of Applied Arts and Science) Technology degree is 120. All university students have to complete 44 hours of general education requirements. These courses can be taken as part of the A.A.S. (Associate of Applied Science) degree and can be completed at a community college. Thirty semester credit hours in the technical field taken as part of the requirements for a technical associate degree will be transferred into the bachelor's degree program. The students have to take 27 hours of upper level courses in the technology program area, which includes six credit hours of upper level elective coursework. These courses will be offered as online courses. The students also need to take a minor. The students are encouraged to take a minor in energy studies, which will be another 18 hours of upper level coursework. Two of the courses can be common to the major and the minor. This adds up to a total of 113 semester credit hours ($44 + 30 + 27 + 18 - 6$). In addition to the above courses the students have to complete a project (3 credit hours) and an internship (3 credit hours). We understand that this adds up to 119 hours, but students usually end up with more than 120 hours because they have gone to different schools and end up with additional hours of course work.

TRAINING FOR ONLINE COURSES

Universities help enhance professors' teaching and students' learning experiences by providing a diverse source of materials on effective teaching, and incorporating technology into education (Kubarek, 1999). The home page, which includes the syllabus for each of the classes, bulletin board for students to discuss topics with each other, and online grade information for the students' benefit, were all made with the help of university resources.

Online instructors have to learn a new technology, communication style, instruction design, delivery method, and evaluation method. Instructors need to develop skills in new technology including bulletin boards, web chats, streaming video, video conferencing (Jonassen, et. al., 1995). Training may include self-paced tutorials, creating online grade book, and responding to online discussion questions. At U.T.P.B., we had to go to a three day training as outlined in table 2.

Table 2: Training Schedule Dec 16th – 18th at U.T.P.B.

Date/ Time	Topic	Output	Trainer
Dec 16: 9-10	Writing Objectives and outcomes (ppt)	Write out objectives and the outcomes for the first module	Sailaja
10-12	Flowchart, Storyboard, concept map (handout & file on thumb drive)	Storyboard for first Module/Unit completed	Sailaja
12-1	Retention Strategies, Instructional Design Issues, Interaction and Collaboration strategies	Ideas for presenting the content, identify design issues in online courses	Sailaja
Dec 17: 9 – 10:30	Blackboard Tools – Assignment Blackboard Tool: Quiz (Optional Respondus – 2 to 4 pm hands-on training in 4252)	Set up first assignment activity for first module Set up Quiz for first module	Jennifer Sailaja Oneita
10:30 – 1	Presentation format of the content – Demo of Soft Chalk Navigation/Themes/colors	Work on First content module/unit/chapter material for Soft Chalk – text, audio, pictures, interactive activity, etc	Sailaja Jennifer
Dec 18: 9 – 10	Quality & Evaluation of course	Items to include in the course; Do and Don't Do list,	Sailaja
10-11	Soft Chalk Demonstration (Optional Softchalk – 2 to 4 pm hands-on training in 4252)	Complete Launch Meeting worksheet	SoftChalk Oneita
11- 12:30	Blackboard Tools: Gradebook Discussion Tool	Set up columns for the grade book Enter the discussion Questions	Sailaja Anita
12:30 to 1	Smart Thinking, Safe Assign, Digital Library, Support Services		Oneita

ONLINE COURSE ELEMENTS

The challenge for designers and instructors is to design online courses that engage students, encourage persistence, and reduce attrition (Martinez, 2003). Online courses have to be usable, useful, and motivating (Shilwant and Haggarty, 2005). Motivation is positively related to learning performance (Tai, 2006). In addition to course grades, motivation was significantly related to course satisfaction (Klien, Noe, and Wang, 2006). Kim (2004) found that flexibility and convenience of self paced online courses is the primary motivator when choosing online learning option. Real world applications, hands on experience, and relevant practical examples are the most successful motivators (Hodges, 2004). Moore (1989) identified three types of interaction in online courses as: learner and content, learner and instructor, and learner and learner. Hillman, Willis and Gunawardena (1994) identified a fourth type of interaction as learner and interface interaction. Good learner interface design allows the student to focus on learning rather than spending time learning to navigate the instructional content (Lohr, 2000). The required elements in an online course at U.T.P.B. are given in table 3.

Table 3: Online Course Elements at U.T.P.B.

<p>1. Introduction/Orientation:</p> <ul style="list-style-type: none"> a. Written paragraph about yourself and your philosophy of teaching – can be on announcement page (Example 1). b. Audio/video clip (Example 1). c. Orientation to the course – course layout (Example 2 and Example 3), presentation of each module (Example 3), policies & expectations (Example 4 and Example 5). <p>2. First week</p> <ul style="list-style-type: none"> a. Syllabus – print, mark dates on your calendar, post questions if any to ‘Course content related questions’ Forum. b. Discussion tool: introduce yourself (student), an icebreaker activity. c. Quiz over Syllabus (Example 6). <p>3. First Module/Unit</p> <ul style="list-style-type: none"> a. Objectives – performance objectives (Powerpoint). b. Prior knowledge, lead/guiding questions. c. Content – powerpoint with audio narrations, tegrity recordings, link to external resources, examples, references. d. Interactive activities- fill in the blank, matching exercise, mouse over exercises, Practice problems, short answer questions.

ONLINE INSTRUCTIONAL DESIGN

The course developer needs to try to get to the point on the first page, or at least give people an idea of what the site is about. The course developer needs to make it easy for the viewer to find the information for which they are looking. The course developer needs to think about what things people might be looking for and try to make those things accessible from the main page. The course developer needs to offer a way of contacting somebody in case they don't find what they are looking for. The course developer needs to test their pages to see how they look with a different size screen, with the images turned off, a different color resolution, and a different browser. The course developers need to make sure their site is relatively quick to load, no matter what they put on it. As a rule the page should not be more than 50K. Under normal conditions, this page will load in a few seconds yet allow some fairly good use of graphics. If course developers have more material, they need to consider separating it on separate pages. Graphics can be stored in a JPEG or GIF format. JPEG format uses "lossy" compression and the course developer can decide the trade off between file size and quality. GIF images will ensure that the images display exactly the same all the time. Course developers need to use graphics and gadgets sparingly. Some common things that get overused are excessive graphics and background images (Colin, 2004).

The front end of the web page should include a welcome screen, syllabus, testing information, posting of grades online, and a bulletin board. Some schools have 24 hour technical support. Some schools offer audio files with their courses. As technology advances there will be fewer limitations to audio and video. The good practices for instructional course design used at U.T.P.B. are given in table 4.

Table 4: Good Practices in Instructional Design Used at U.T.P.B.

Set up	Modules/ Units/ Chapters	Good Practices
Objectives: (Performance)	1. 2. 3.	Objectives stated Content-various formats Interactive/ Engaging/ Active Collaboration
Content: (aligned to Objectives)		Assessment/ rubrics Feedback
Prior knowledge- advanced organizer, assumptions, pre-test, what to expect		
New Content: ppt, tegrity, softchalk,		Already have:
Readings – book, articles		
Resources: web site, magazines		

Assignments/Review/Practice: (expectations) problems, Q&A, matching, fill-in-the-blank exercise		Have to work on:
Assessment activity: (aligned to Objectives) Quiz/Test, Projects, reviews, presentations, Grading Instruction/Rubric		
Collaboration/Interaction: discussion board, group project, student presentation, peer reviews		Dates:
Overview/Summary		
Other: learning log, portfolio, extra credit, etc.		

ONLINE COURSE SYLLABUS

The course developers must provide the following information in their web courses: A header identifying the author and course details, E-mail access to the web course author along with other means of access, information on last revision and date, appropriate citations for text, graphics, video, and audio sources that are not created by the web course author, a link to the University Home Page, a copyright statement, and text elements that can be read while the media are loading. Some general guidelines (Colin, 2004) to follow are: Split the information into logical sections, make sure the starting page is attractive and well laid out, try to have a consistent theme throughout the entire site, try to use colors, styles, and fonts that complement each other. An edited online course syllabus template used at U.T.P.B. is shown in table 5.

Table 5: Edited Online Course Syllabus Template used at U.T.P.B.

(Place your course title, number, semester, year here)

Basic Information	
Name of the Instructor:	
Email:	
Office Location:	Instructor picture here
Office Hours:	(optional)
Course Description	
Materials	
Computer Skills and Other Requirements:	
Important Dates:	
Course Activities:	
Course Assessment:	

Grading Scale

- Student e-mail:**
- Policies & Procedures:**
- Hardware/Software Requirements:**
- Preparation for Computer Emergencies:**
- Student Support Services:**
- End-of-Course Evaluation & Instructor Evaluation:**
- Disclaimer & Rights:**

SCHEDULE				
DATE	DAY	NO	TOPIC/ACTIVITY	SUGGESTED READING
AUG 24	MON N	1	Introduction to the course	

NEW COURSE LAUNCH MEETING

Most online courses are developed by trial and error, with modifications made to provide easier access to courses (Pitt and Clark, 1997). Frey and Alman (2003) provide recommendations for development of teaching of online courses. They include a detailed syllabus with a detailed schedule, clear expectations, grading criteria, assignments, grading criteria, deadlines, and contingency plans if the technology fails. They advise to avoid changing the course once it starts, and providing consistent feedback. Interaction can be through chat rooms, email, or by posting on bulletin boards. Half of the time should be spent on content and the other half with online discussion (Mason, 1998). Successful online education depends on two way interaction (Salmon, 2001). Without the interaction students may feel isolated and begin to procrastinate. Communication in online classes has two main purposes: one is to answer questions and the second is to summarize discussions. Strategies considered less effective were related to traditional styles of instruction such as lecture, personal contact, and guiding discussions (Pitt and Clark, 1997). Strategies considered effective were good web page design, and course ease and accessibility.

Online courses need more up-front design and self-discipline of the instructors. Instructors have to be more organized. They have to break everything done in class and put it in steps and move from step to step. Something that was done orally in the classroom has to be done in writing for the web class. All of the organization is up-front. Once the online course is completed according to the guidelines given to us, we have to go through a checklist with the university online representative, to make sure that our courses have the elements of good online courses. For the new course launch meeting at U.T.P.B., the instructor has to complete the form (edited) shown in table 6.

Table 6: Edited New Course Launch Meeting Form used at U.T.P.B.

Organization and Structure	Good Practices	Course Plan
1.1 Syllabus elements	Syllabus is complete and detailed with no errors A syllabus quiz is provided	
1.2 Learning objectives / student expectations	Learning objectives are clearly stated at the course level and at the learning unit level Objectives are observable, measurable and aligned to course content, activities and assessments	
1.3 Content structure	Course content is well-sequenced A detailed site map is included	
1.4 Instructions for assignments and activities	All assignments and activities include detailed, clear instructions and student expectations Grading rubrics are provided	
Interactivity and Communication	Good Practices	Course Plan
2.1 Instructor’s communication and feedback plan	Detailed instructor contact information is present An introductory announcement is in place Discussion threads have been created Instructor’s communication plan is clear and detailed	
2.2 Instructor’s use of the discussion board	The instructor posts regularly during the term Instructor makes extensive instructional use of the discussion board	
2.3 Student use of discussion board	Students use the discussion board regularly during the term Students are encouraged to take initiative in creating topics	

2.4 Social rapport activities	Student introductions are required A social discussion area is present	
2.5 Interactive activities	Group projects are presented to the class Peer feedback and/or assessment is required on the group projects	
2.6 Communication	Instructor and students correspond through the discussion board and chat tool	
Course Content	Good Practices	Course Plan
3.1 Accuracy	All course content is credible	
3.2 Clarity	Presentation of content is clear, straight-forward and sequenced	
3.3 Educational resources	Instructions and contact /access information are included for all resources	
3.4 Student Learning Styles	Most course content is presented in a wide variety of ways to insure quality instruction for all student learning styles	
Usability	Good Practices	Course Plan
4.1 Navigation	Navigation is easy to follow and consistent	
4.2 Technical issues	Clear technical instructions are provided Technical support contact information is clear	
4.3 Technology Requirements	All hardware, software and plug-in requirements are addressed Material is presented in format for low-bandwidth users	
4.4 Course Tools	All course tools are used and explained in detail	

4.5 Web Design	Pages are enhanced by quality graphics No horizontal scrolling and vertical scrolling is limited	
4.6 Media	All multimedia files and graphics are instructionally appropriate All content presented via media or graphics is also available as text for low-bandwidth or disabled students	
4.7 Accessibility	Pages load quickly Text-only version of course content is available	
4.8 Scalability	Time-saving communication strategies are used Most assessments consist of group activities and assignments	
General Design	Good Practices	Course Plan
5.1 Interactivity	Students are required to interact and/or work with one another on several assignments Students participate in peer reviews and assessments	
5.2 Assessment	In addition to testing and homework or other assignments, students are required to complete a major project or paper Self-assessment and/or peer assessment is required	
5.5 Active learning	Activities require students to apply what they have learned to a real-world scenario	

CONCLUSION

In today's competitive environment keeping abreast with emerging online technologies is becoming increasingly important for those involved with technical education. Online instruction has become an effective delivery medium for providing easy access to education and training needs. For new faculty, having a good understanding of the tools needed for developing and implementing online courses is imperative.

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