

SENATE COMMITTEE ON OUTREACH

Penn State Course Development Models for Online Education

(Informational)

PURPOSE

The December 2010 Senate Informational Report on Course Enrollment Trends Across Penn State revealed that, since Penn State officially entered the eLearning arena in the late 1990s, enrollments in Web-based courses have increased dramatically. Web-based courses now account for 6.8 percent of all courses at University Park and 2.6 percent at the Commonwealth Campuses. In Spring 2011, there were 172 online resident instruction courses (designated as “Web” in the Schedule of Courses) and 353 online courses offered through the World Campus. How these online courses were developed varies widely across the University. This report provides a summary of the online course development models currently in use at Penn State.

BACKGROUND

In early 2010, Cole Camplese, then Director of Education Technology Services (ETS) at Penn State, created a Web site (hereafter referred to as the OCDM wiki) that invited University Park learning designers and administrators to provide a summary of their unit’s online course development models in order to capture a snapshot of practice at Penn State’s main campus. In Summer 2010, an invitation was sent to the entire learning design community at Penn State to elicit the same information for other campus locations.

In January 2011, Ann Taylor, Assistant Director of the Dutton e-Education Institute in the College of Earth and Mineral Sciences and Chair of the Senate Outreach Committee, joined Camplese in his efforts to gather and analyze information about University-wide course development models. Several additional invitations were made to the University community, asking learning designers and administrators to update and/or to add their unit’s online course development model summary to the OCDM wiki.

At the time of this writing, the OCDM wiki includes information for ten of the academic units located at University Park and twelve additional campus locations, as well as an overview of the online course development services provided by the Penn State World Campus, Education Technology Services, and Information Technology Services (ITS) Training Services.

The OCDM wiki is located at http://ets.tlt.psu.edu/wiki/ELearning_Platform_Reviews.

DEFINITIONS

For the purposes of this report, the terms are defined as follows:

Courseware: A complete substantially computer-based package of content, assessment materials, and structure for interaction that permits a course to be taught without requiring physical access to a student. See Penn State Policy RA17 - <http://guru.psu.edu/policies/RA17.html>.

eLearning: A general term used to refer to computer-enhanced learning. See http://en.wikipedia.org/wiki/Electronic_learning.

Hybrid Course: A course that combines online and traditional classroom instruction, with the online portion typically comprising at least 40 percent of the course contact hours.

Instructional Design: The systematic process of creating or adapting instruction, including at least these steps - defining the problem or knowledge gap that the instruction is meant to address, defining the audience that the instruction is meant to serve, developing objectives and assessment strategies, selecting and sequencing content and learning activities, evaluating the instruction, and revision. See <http://www.uwex.edu/ics/design/glossary.htm#i>

ABOUT THE DEVELOPMENT OF ONLINE COURSES

For credit-bearing courses at Penn State, a course is a course, regardless of how that course is delivered. In fact, Penn State's academic transcripts do not indicate a course's campus location or course delivery method. Each course offered by the University must be approved by the Faculty Senate (at the undergraduate level) or the Graduate School (at the graduate level) through a formal course proposal process. University Policy 42-00 further directs that "the distribution of time between class activities and outside preparation varies from course to course; however, for the average student a total of at least forty (40) hours of work planned and arranged by the University faculty is required to gain 1 credit." When delivering a course online, instead of face-to-face, these facts still hold true. The difference is simply in how student work in a given course is planned and arranged.

The key component in online course development is the content expertise and experience of Penn State faculty. Many academic units at Penn State, as well as the Penn State World Campus and central Education Technology Services, employ learning design specialists (i.e., instructional designers) who partner with faculty in the development of online courseware. These individuals typically hold graduate degrees in an education field, such as instructional systems design, educational psychology, curriculum and instruction, or adult education. Working in partnership with faculty content experts to develop courseware, this means that each general phase of the process—analysis, design, development, implementation, and evaluation—is informed by tested pedagogical and androgical (adult learning) learning theories, research, and best practices.

Learning designers also bring a level of technical expertise and distance learning experience to the process of developing an online course, enabling them to assist faculty who may be new to creating computer-based courseware. While the tools for developing online resources continue to get easier and easier to use, learning designers are able to help faculty to develop high-quality, discipline-specific courseware that meet specific learning goals. For example, learning designers help faculty to analyze the unique learning needs of the targeted student audience (most often working adult professionals studying part-time and at a distance) for which the course is being designed, adapt their in-class teaching and learning activities to the online environment, identify and evaluate technology tools that can be used effectively within the course, and design assessments that allow both students and faculty to gauge student progress toward course learning goals.

Online courses vary widely in terms of complexity. Depending on the design of the course and the desired learning outcomes for the students, some online courses may be primarily text-based, while others may utilize rich multi-media elements. This means that the length of development time and the corresponding costs also vary widely. On average, to develop a three-credit online course, approximately three semesters are needed for development and pilot testing. The first two semesters are typically dedicated to course development and the third semester is dedicated to the initial course offering, where further revisions are made based on the student and instructor feedback. Basic course development costs, which primarily cover faculty author and learning designer time, average \$45,000 per course. Depending on the complexity of the course, however, costs can easily exceed that amount by tens, hundreds, or even thousands of dollars!

All intellectual property and copyright concerns for eLearning resources developed at Penn State are governed by University Policy RA17 – Courseware. See <http://guru.psu.edu/policies/RA17.html>.

SUMMARY OF FINDINGS

A review of the OCDM wiki data reveals that a variety of course development models are in use across the University. At the University-level, the Penn State World Campus includes a learning design unit that assists many academic units with the development of online courses that are to be delivered through the Penn State World Campus. Their course development environment consists of a variety of tools, including a custom toolset called “Evolution” that was built internally to support World Campus practice. Likewise, Educational Technology Services and the ITS Training Services group provide a number of resources to support faculty with the development of online course materials for use in resident instruction courses (both hybrid and fully online “Web” courses). ETS reports that they currently create open courseware modules utilizing the Blogs at Penn State platform. They will be exploring other platforms, such as Wikispaces, as well.

The OCDM wiki data also indicates that a growing number of academic units have established an internal learning design group that is dedicated, at least in part, to helping college faculty develop online courses for delivery through resident instruction and/or the Penn State World Campus. These groups have been created to meet the unique needs of each unit’s academic disciplines and are a sure sign that online teaching and learning are taking root at Penn State.

Internal learning design units can be found in the colleges of Agricultural Sciences, Arts and Architecture, Earth and Mineral Sciences, Engineering, Health and Human Development, Information Sciences and Technology, Liberal Arts, as well as the Eberly College of Science, the Smeal College of Business, Behrend College, and the Capital College in Harrisburg. The majority of these units use Drupal, along with the “ELMS” custom Drupal modules developed by Penn State’s College of Arts and Architecture, to develop their online courses. Drupal is an open-source content-management system that can be used in conjunction with learning management systems like ANGEL.

The remaining units represented on the OCDM wiki report having at least one learning designer available for consultation to assist faculty with their online course development. Most use ANGEL as the primary online course development and delivery tool, but a wide variety of additional eLearning tools, such as Adobe Connect, Adobe Presenter, Jing, VoiceThread, and

Flash, have also been incorporated into their course development models. Some of these tools are now supported centrally through Penn State site licenses, including Adobe Connect and VoiceThread.

Detailed information about each unit's development model for online courses can be found at http://ets.tlt.psu.edu/wiki/ELearning_Platform_Reviews.

FUTURE TECHNOLOGY DIRECTIONS

Currently Penn State does not centrally provide common tools to support the design, development, and management of eLearning materials. Information Technology Services (ITS) has provided ANGEL as a centrally supported course management system for more than a decade. While this toolset provides the basis for electronic support of course material delivery, it is not viewed as a viable eLearning authoring environment. Because of this, the colleges, campuses, and organizations described above have chosen to locally invest in custom tools and approaches. While this approach is adequate for those who have made a concerted effort to strategically invest in eLearning, it has created a situation where many parts of the University are underrepresented.

The long-term goal of the University is to centrally provide a set of common eLearning authoring tools and models to assist in selecting a toolset, as it is important to provide a diversity of toolsets that can be utilized to create eLearning materials. Providing a suite of tools will offer the greatest degree of flexibility to help match different instructional strategies.

REPORT AUTHORS

Ann H. Taylor, Assistant Director, John A. Dutton e-Education Institute
Cole Complese, Senior Director, Teaching and Learning with Technology

SENATE COMMITTEE ON OUTREACH

Theodore R. Alter
Dennis D. Calvin
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