

eLearning at UNM-Los Alamos Faculty Guide

DRAFT Section # 3: Design and Development

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Principles of online course design

Introduction

In many ways, designing and developing an online course is not that different from the process of designing and developing a face-to-face course. In both, you will be inspired by your enthusiasm for the material and your enthusiasm for teaching. In both, the content you wish to cover, the ideas you wish to emphasize, and the specific goals that you have for your students will guide your overall plan for the course. In both, you will work to develop the most challenging, appropriate and enjoyable assignments and assessments for your students. And in both, you will seek to engage your students as actively as possible, creating opportunities in which they can develop and share a growing enthusiasm for the course material.

Like face-to-face classes, online classes require us to adjust our courses in certain ways so that they conform to the circumstances and constraints imposed by the learning environment. In traditional classes, we make these adjustments automatically, dividing information into week-long units and fifty-minute lectures, assigning readings for the more solitary “out of class” hours, and using classroom time for interactive activities such as discussions and presentations. The online classroom also requires that we adjust our course to the circumstances and constraints imposed by a particular learning environment. For the online classroom, however, these conditions will be new and unfamiliar to most instructors. These new circumstances will require new and different types of adaptations.

This section provides an introduction to some of the chief considerations involved in the overall design and development of an online course. The information presented is not exhaustive, but rather introduces those topics most important in creating quality online courses. Keep in mind that these are considerations that can be added to the fundamental principles which guide your teaching; they should not replace those principles. Rubrics for online course design and development are provided in the appendices at the end of this section.

Organization and Structure

In a traditional classroom, it is important to organize material well so that the information presented will be clear to students. Instructors work hard to give logical and rational structure to their courses, providing well-developed syllabi and delivering coherent and purposeful lectures. In the face-to-face classroom, the most critical element of course organization is often the instructor, who provides continuing direction, guidance, explanation, and clarification. In the online classroom, however, the most important element of organization is the layout and design of the course itself. Layout and design embody and present the organization of the class as a whole. While the instructor retains a

presence in the course and can help guide students through this structure, clear and overt organization must be inherent in the course design.

There are several basic ways to achieve structure in online course design. Some of the structure is provided by the LCMS itself, which builds specific elements, such as "Assignments" and "Discussions" into the course menu. The LCMS also provides locations in which course content can be collected, such as Learning Modules and Folders. For each course, however, the layout of these elements is at the discretion of instructor, who will need to build a systematic plan of presentation for the course as a whole, and map it clearly onto content materials and tools. This structure must be straightforward and logical, and should reveal the relationships and connections between the different elements of the course. For example, documents and readings for a given week might be contained within a folder that also includes the assignment, quiz and discussion topic for that week. These elements should be arranged in the order in which they are to be examined and completed. In addition, assignments will need to appear under the "Assignments" link in the WebCT side menu and to be clearly labeled with a title that links them to the appropriate week or folder. By creating this sort of structured network for your course, the instructional links between the different elements of the class will become part of the course appearance and design.

Because simple structures are easiest to perceive quickly, it is a good idea to create a structure for your course that is as simple as possible. For an online course, this means keeping as much on the surface as possible. The general rule for accessing online information is that it should take no more than three clicks to access from the main, or front, page. Using the "three click rule" for course information will also make it easier for students to use icons for recognizing specific course elements. A simple organization will allow students to master the pattern and rhythm of your class rapidly, and will help develop a sense of success in the class for students from the start. It will allow both you and your students to spend less time on structural issues and to focus more time on content and learning.

Organizational patterns for online courses must also be consistent. If you are consistent and methodical about the arrangement of your content, materials and assignments, students will quickly grasp your organizational plan and feel comfortable in your online classroom. You should place specific materials in the same location in the LCMS each week and use similar or parallel organizational strategies for presenting them. It is also important to strive for consistency in workload throughout the course. When possible, give similar length reading assignments and comparable written work each week, and break up larger assignments into sections with separate due dates. Consistency can also be enhanced by the use of standardized logo images for similar course elements. Your LCMS (WebCT) provides symbols for several course elements, such as quizzes, discussions, and written assignments. If you choose to select your own logos, make sure that you apply them in a consistent manner. Standard formatting for emails and announcements can also help establish regular patterns in your online classroom. This consistency will help students find information easily and lets them know what to expect in the coming days and weeks.

Sequencing

Sequencing the information in an online class is another important way of creating organization. Sequencing creates a simple linear structure for course materials that can be easily followed by most students. At the simplest level, you will probably sequence course content automatically by presenting a linear array of topical units. Your sequencing may be chronological, or concept and skills based. Sequencing allows students to build understanding incrementally and to move easily through the course with direction and focus.

Sequencing is also important for the materials presented within folders and modules. Since learning in online courses occurs through direct student interaction with the course, the order in which you present content can have a substantial impact on student understanding. You will need to consider carefully the sequence in which readings, concepts and assessments are presented, as this is the order in which students will encounter and complete the material. Make sure that the arrangement is logical and that it leads to the results and outcomes intended. Once you have loaded course materials in a

certain sequence, you will not have the same opportunity to adjust or amend it that you would in a face-to-face class.

Completeness

In an online class, the materials that you post constitute the course in its entirety. The explanation of weekly assignments, the introduction of new topics, and the presentation of information must all be contained within the course itself. As the instructor, you will still play an important role in helping students with specific questions, but your students will no longer encounter the content of the course through you. Instead, they will be engaging the content directly, through the course itself.

For this reason, it is essential that the course you create be complete, in every sense of the word. All assignments, reading materials, lectures, activities and assessments must be included within your course¹, as must all web links, resources and external information that you want your students to use. In addition, the course must provide detailed and unambiguous instructions, guidelines, explanations and statements of expectations for each of these elements. For example, each assignment in your online course should contain the materials needed for the assignment, a complete instruction sheet, a grading rubric, a sample response, and a "place" in the course in which the assignment can be submitted. These materials will all be needed by students who may be working on the class at times when the instructor is not available to answer questions. Similarly, websites posted for review should include an introduction describing their purpose and relation to the class and an explanation of how they should be used. Course elements that lack such complete scaffolding may be perceived as confusing, ambiguous or irrelevant by students. Such confusion and misunderstanding can quickly lead to anxiety and frustration, and may create dissatisfaction for both instructors and students.

Chunking

Chunking refers to the practice of dividing information into small coherent units, or "chunks," that can be easily mastered in a relatively short period of time. The size and parameters of a chunk can vary; it might consist of something as specific as a single skill (e.g. comma use in series) or might cover an entire text chapter. Chunking provides advantages for students in many ways. It has been shown to be a successful study tool for all students, so by chunking the information that you present, you will be helping your students to learn. Chunking can also help weaker or less experienced students, as well as those with learning disabilities, because it narrows the learning focus and helps prevent students from being overwhelmed.

You may already have found ways to utilize "chunking" in your face-to-face courses. In an online course, chunking can be even more important, as students lack the scaffolded social environment of the classroom to keep them on-task and supported. There are many ways to chunk information in your online course. Initially, you will use it when you divide the course content into topics or units, much as you would in a face to face class. You will probably want to continue this process of division for your online class, creating several smaller learning units or modules within each larger unit. You may also opt to create even smaller chunks that can be completed in a fairly limited period of time, such as half an hour. Some of the literature on online instruction suggests that all information in online courses should be delivered in such small and easily manageable learning bites. This division of material is appreciated by online students, many of whom are juggling multiple responsibilities and crowded schedules. Small chunks may also create more rewarding learning experiences, thereby encouraging students to logon frequently and to become more engaged in your course.²

¹ "Include in your course" does not literally mean "contained within the LCMS (WebCT)." From within the LCMS you can provide links to materials and activities that reside outside of its confines. But the student should be able to access these from within the LCMS and not have to rely on external links to external materials.

² Kelly, R., "Subdivided Courses Help Students Learn in Small Increments," in Faculty Focus Special Report, Online Course Design: 13 Strategies for Teaching in a Web-based Distance Learning Environment, pp. 5-6. Magna Publications. http://www.facultyfocus.com/private/pdf_products/report_10.pdf. (Registration necessary.)

Usability and navigation

Usability refers to the ease with which a student can use the course you are designing. It looks at the course from the point of view of the user and evaluates the ease with which it can be utilized to accomplish the goals it sets forth. Usability might be considered an assessment of the functionality of a course. It is a measure of its organization, structure, consistency, clarity, completeness and general design. Clearly, usability is necessary if an online course is to be successful, as even the most esoteric materials and sophisticated interpretations will be of no value if the students cannot access websites, open documents, or understand assignments.

Usability is achieved by attending to elements on a variety of levels. On the level of organization, usability requires clear, simple logical organization that is consistent throughout the course. On the level of course materials, such as readings and websites, it requires that items be clearly labeled, well written, and easily accessed. On the level of assignments and activities, usability necessitates accurate directions, clear statements of expectations, and succinct, well-written instructions. Usability also requires a design layout that eliminates clutter, creates emphasis and contrast where needed, and enhances organization and learning through the use of good graphic design techniques.

One of the key factors affecting usability is navigation. Navigation refers to the ability of users to find and retrieve information efficiently and with ease. Course navigation is not a particular tool or device, but rather a system that combines organization, clarity and consistency of design with occasional instructions in such a way that your course is usable and efficient. You might think of navigation as the mental road map for your course, one that can be easily and intuitively apprehended by your students. Good navigation helps students know where they are, lets them understand how to move forward, and allows them to return to where they have been with ease and efficiency. Like good street signs, good navigation will anticipate questions and avoid confusion for those moving around the course. Providing answers to seemingly obvious questions, such as "Where do I begin" or "What next," is a hallmark of a course with good navigation. In such a course, even a student who "gets lost" will be able to re-orient fairly quickly.

Because you will be building your course within WebCT, many of the elements of navigation will already be set up for you by the LCMS. WebCT provides locations for items such as assignments, discussion topics and quizzes, and determines the way in which students can move back and forth between these levels. However, it is up to you to populate these areas appropriately, to label items clearly, and to inform and guide regularly, so that students can find the items they need with ease. You will also have to create a clear navigation system when you build folders and modules. For students, who will lack your mastery of the subject content and its organizing principles, it will be difficult to know where to find (and re-find!) specific videos, readings or websites. Creating descriptive document labels and informative tables of contents will improve navigation at this level and allow your students to retrieve information efficiently.

And although it seems so obvious that it shouldn't need to be mentioned, you need to insure that materials are where you say they are - e.g., NO BROKEN LINKS. It is your responsibility to verify that all links between materials within the course are working (clicking on [Assignment 2](#) really does take you to Assignment 2). And even though links to materials on the internet, outside your course, can change overnight, it is imperative that you verify that they still work around the time that students need to use them. The fact that they worked six months ago doesn't mean that the materials are still present today. Broken links in online courses are a major source of student frustration and are a mark of poor quality.

Transparency

Transparency refers to the degree to which the instructional intentions and processes of a course are "transparent" to students. Transparency is important in a course because it allows students to understand the purpose of the course and the goals towards which they are working. As students become increasingly aware of their purpose, they also develop a greater sense of responsibility for their education. This improves student motivation, student learning and student performance.

Transparency is generally easier to achieve in online than in face-to-face courses simply because all elements of the course, including learning outcomes, are visible to the students at all times. As a result, students are more aware of the overall purpose of the class and can readily see the connections between daily assignments and long term goals. Instructors can make these connections even more transparent by creating live links between particular assignments and specific outcomes. Such links give students an immediate understanding of the purpose behind their efforts.

Transparency also refers to the ease with which student work is made available and viewable to all members of a class. In online classes, opportunities for this student-to-student transparency might occur through discussion forums, group projects, or any other activity in which student opinions and perspectives are shared. Because these interchanges are asynchronous and are retained in written formats, they can be frequently and easily reviewed. This increases students' awareness of the work of their classmates and allows them to learn from their peers. Student-to-student transparency also provides a comparative base against which students can evaluate their own achievement. In addition, student transparency fosters scaffolded learning, as student interchanges articulate familiar and lower level contexts within which new ideas and information can be more readily comprehended. Another argument for making student work publicly available is that students' work often improves significantly after they see what their peers are doing, and after they are given the opportunity to give each other feedback³.

Finally, transparency can refer to the openness of the grading process within a given course. Transparent grading requires that the criteria of grading are available and comprehensible to students, and that students are able to track their grades in a class. Online student tools provided in your LCMS, such as "My Grades" in WebCT, make the process of tracking grades much easier for students in online classes, as they can easily view them at any time on this grade inventory screen. Instructors can further enhance grade transparency in their online classes by posting detailed instructions, rubrics and sample responses for all assignments. Grade transparency helps students assess their status in the class and eliminates the surprise of a poor grade at the end of the semester⁴.

Redundancy

In online courses, redundancy is sometimes thought of as the unnecessary repetition of similar or overlapping course materials. This type of redundancy, exemplified by the posting of similar websites or multiple PowerPoints within a single unit, is a disadvantage for any course. In online courses, such redundancy can have a particularly negative effect, as it overwhelms students and discourages serious attention to course materials, which will be perceived as repetitive. Online instructors should be careful to select material with discrimination and restraint.

However, certain kinds of redundancy are considered positive and even necessary in the online classroom. Since students will not be coming to class each week, they will not have the opportunity to be reminded about assignments, due dates, or key learning points that direct contact with the instructor in the face-to-face classroom provides. It is therefore up to you to find ways to remind students of important information within the online classroom. This can be achieved by posting key documents repeatedly and in varied locations. For example, general assignment expectations and guidelines, which might appear in your syllabus, can also be posted with specific assignments, in unit folders, and on the Home Page. This sort of redundancy can help ease anxiety and increase efficiency by providing documents students need frequently in multiple locations. This is especially important early in the semester when students will be unfamiliar with your class organization and may still be

³ Wiley, D. (2007). Personal communication, in Brown, J., and Adler, R. (2008). "Minds on Fire: Open Education, the Long Tail, and Learning 2.0." *EDUCAUSE Review*, 43, 16-32.
<http://www.educause.edu/EDUCAUSE+Review/EDUCAUSEReviewMagazineVolume43/MindsonFireOpenEducationtheLon/162420>.

⁴ ECAR, Educause Center for Applied Research, "Pedagogical Uses of Course Management Systems," Chapter 8 in *Faculty Use of Course Management Systems 2* (2003): 80.
<http://net.educause.edu/ir/library/pdf/ers0302/rs/ers03028.pdf>

learning how to find information. Used judiciously, redundancy of this sort enhances course navigation and alleviates student stress.

Rubrics for Quality Online Courses

Many rubrics have been created that list criteria of quality online courses. Most of these rubrics differ little in the components they specify and the elements they emphasize. Below are links to two of the most complete and widely used rubrics.

The "Quality Matters" rubric from the Quality Matters website, available at:

<http://qminstitute.org/home/Public%20Library/About%20QM/RubricStandards2008-2010.pdf>

The Rubric for Online Instruction, from California State University at Chico, available at:

<http://www.csuchico.edu/celt/roi/>

More to come

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