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Considerations in Online Course Design

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Abstract

With distance and online learning becoming ubiquitous in higher education, the need for faculty to be able to create quality online courses is greater than ever. This article offers practical advice for those faced with the challenge of creating their first online course. Characteristics of the online medium are explored. Then, drawing upon Chickering and Gamson's (1987) principles of good practice, five principles for online course planning and design are discussed: collaborative learning, connecting course concepts, instructor social presence and interaction, balancing the amount of course information with student commitment and persistence, and matching course outcomes with technological options. The article ends with a short case study showing how the suggestions have been implemented in an online course.

Distance learning and online programs have become ubiquitous in modern education. As early as 2001, 89 percent of public four-year institutions offered distance education classes of some kind. That same year, 2.9 million students were enrolled in college-level distance courses (Tallent-Runnells et al., 2006). More recently, in 2007-2008, the number of students taking at least one online course rose to 4.3 million with 3.7 percent of undergrads taking their entire program online (Aud et al., 2011). That same year, 8.7 percent of post-baccalaureate students earned their entire degree online (Wei et al., 2009). One study estimated that online enrollment accounted for over 31 percent of all post-secondary enrollments in fall 2010 (Allen & Seaman, 2011).

Distance education is even becoming prevalent among elementary and secondary students. In 2004-2005, the National Center for Educational Statistics (NCES) reported 10 percent of all K-12 schools offered some kind of distance learning courses, representing almost a half million students (U.S. Department of Education-NCES, 2008).

With more and more students enrolling in online programs, universities are faced with the challenge of keeping up. In many cases, the responsibility for developing online courses falls to the individual faculty member (Gallien & Oomen-Early, 2008). This is true especially at smaller schools which often lack resources to staff a centralized office for online learning or instructional design.

The purpose of this paper is to offer practical advice to faculty faced with the task of developing online courses — possibly for the first time. In Kim and Bonk's 2006 survey of online educators, knowing "how to develop or plan for high-quality online courses" was named as the most important skill for prospective online faculty to acquire. It was even more important than actually "teaching" online (p. 27). In a way, Kim and Bonk (2006) predicted a current reality — online course development has become an academic niche in its own right. In fact, it is not uncommon for faculty to teach online courses they did not develop or develop courses they do not teach.

This paper will offer suggestions related to three phases of online course development: planning, design, and implementation. To conclude, it will offer examples showing how these suggestions were integrated into an online course.

Developing the Online Course

Planning

The first step in planning your online course is to reinvent and re-conceptualize your courses. Online courses do NOT function just like face-to-face classes, and designing the online course is not a simple matter of putting the material on the web. Designing your first online course will likely challenge your pedagogical mettle.

My gentle caution here is grounded in the theoretical work of Marshall McLuhan (1994) and Neil Postman (1985) who taught that every medium speaks in a unique way. When you move the same message from one medium to another, you radically alter the nature, process, and ultimately, the content of any communication. This includes teaching and learning. The online course and real world classroom are two entirely different environments. Thus, developing an online course requires instructors to "think differently" about teaching and learning online (Fish & Wickersham, 2009, p. 283) and to re-conceptualize what they do. One observer adamantly stated, "Instructors must adapt their course materials and teaching styles to the new medium, as Internet instruction and classroom instruction are two different creatures and are not interchangeable" (Dyrud, 2000, p. 88).

The earliest attempts at online teaching fell victim to this fallacy — that one could simply put lecture notes or slides or a videotaped lecture on a webpage and call it "online learning." Although there are advantages to having course material such as filmed lectures available for immediate and repeated recall, online learning theorists initially warned that these methods would not result in much student learning (Bourne, McMaster, Rieger, & Campbell, 1997). Such approaches inherently focus on information or course content and neglect other important elements of the learning process, such as the classroom environment, collegiality, problem solving and cooperation.

Key differences between the traditional classroom and online teaching: Since the advent of online education, several differences between traditional and online classrooms have emerged:

- Online classrooms are often asynchronous, meaning one student's activity occurs independently from the activity of other students. Face-to-face classrooms largely operate on synchronous models, meaning all students meet together at the same time. Online, students are free to interact with course materials when it is convenient for them, often around the clock.
- Online discussions are generally non-linear, requiring students to juggle several conversations at once (Picciano, 2002). Discussions in face-to-face classrooms are often predicated on one person being allowed to speak at a time. Online, discussions are usually facilitated by message boards and forums where students can participate in multiple conversations simultaneously.
- Online environments favor the written word (Kim & Bonk, 2010). In asynchronous online classes, a significant portion of the communication with students takes place via written text — whether through discussion boards, assignment instructions, or individual feedback. Composing all that text takes time. Fifteen minutes of oral dialog generally takes one hour for a professional transcriptionist to complete. That being the case, the time commitment from online instructors increases dramatically (Gallien & Oomen-Early, 2008; Zhang, 1998).
- The separation of teacher and student makes communication slower. Although the Internet has sped up our access to information and facilitated "instant messages," in the online classroom, communication can be slow. In a face-to-face classroom, a student can ask a question of the instructor and get an immediate answer. In online courses, e-mail is often the primary means for students to communicate with the instructor. Significant delays in instructor response can create "high levels of frustration and outright anger" among online students (Amrein-Beardsley, Foulger, & Toth, 2007, p. 340).
- To compensate for possible delays in communication, online courses demand greater social contact and presence from the instructor. In traditional face-to-face courses, instructors are expected to meet with students perhaps three hours per week in the classroom, with a few additional hours reserved for office time. The online classroom is "open" 24/7. Coupled with online classes being asynchronous, this creates a higher demand from students on the instructor to be available when they are online. The instant gratification nature of the Internet has trained students to expect help when they require it — on their schedule. Unless the instructor increases time spent with the class on the website, student frustration and even social isolation will result (Wickersham & McGee, 2008; Kim & Bonk, 2010; Keeton, 2004).
- The volume of information available in the online classroom is greater. Face-to-face classrooms often tend to be static, meaning materials are often prepared in advance of the class session (or semester), and class discussions draw upon that limited pool of resources. In online classes, teachers and students are free to draw upon new web-based resources week-to-week, day-to-day, or even moment-to-moment.
- In light of this instant access to infinitely more resources, the whole role of the instructor changes in the online environment. Online, no longer is the instructor the "sage on the stage" or the sole conduit of information and knowledge. Rather, on-line teaching follows a "guide on the side" model where the instructor is more of a facilitator, helping students to not only navigate course concepts but to shepherd them into becoming autonomous learners. (Bourne et al., 1997, p. 39; Rabe-Hemp, Woollen, & Humiston, 2009, p. 215; Edwards, Perry, & Janzen, 2011, p. 114). In some cases, the instructor may even take the role of co-learner, allowing students to teach portions of the course or bring new, unplanned ideas to the class discussion (Edwards et al., 2011).

Design

The challenge for faculty designing an online course often lies in how to best adapt existing course materials to the unique nature of the online environment. Given the differences in learning environments, how should an online course be structured to maximize student learning? In answering this question, remember that good online pedagogy begins with good pedagogy, period. Online or not, instructors should abide by techniques and concepts of teaching and learning that transcend the method of delivery. A review of best practices in online education supports the notion that good classroom techniques, such as collaboration and

employment of multiple modalities, "also appear to work in distance education" (Smith, 2006, p. 62).

In this section, I offer several suggestions for online course design based in Chickering and Gamson's (1987) "seven principles of good practice in undergraduate education." Along the way, I show how they can be adapted and modified to address the unique characteristics of online instruction, named above.

Tip #1: Have students work collaboratively and actively: Chickering and Gamson (1987) stated that good practice involves developing "reciprocity and cooperation among students" as well as "active learning." The best online instruction, then, allows for students' learning to be forged more through interaction with each other and less through instructor lecture. Keeton's (2004) survey of best practices revealed online faculty to be doing just that — "following a dynamic learning community model over the alternative teacher-controlled instructional system" (p. 94). This guided approach works especially well with adult learners. One researcher noted adult learners "would prefer to actively construct their own internal representations of knowledge rather than accept what the instructor gives" (Zhang, 1998, p. 399). Likewise, there is evidence that suggests hybrid courses, which afford students some control over the learning environment, may be suitable online alternatives for college undergraduates, particularly upperclassmen (Riffell & Sibley, 2004).

One way student collaboration can be achieved is through classroom discussion boards and forums. Online discussion boards mimic face-to-face classroom discussion, providing a space where students can respond to and debate the course materials. Some online courses require students to respond to a "question of the week." This practice generally involves students responding to the instructor only. Requiring students to interact with each other's messages, responding to their ideas and even raising their own questions, can achieve active student collaboration. If the class is large, students may be divided into groups for the purpose of creating collaborative responses. You might ask groups to develop summaries of the week's discussion or to formulate a group answer to the weekly forum questions. If you integrate group responses into your course, be sure to allow sufficient time for groups to accomplish the task. Given online learning's sometimes slower pace, group work can become frustrating for students if you ask too much of them too quickly. In any case, prompting or scaffolding from the instructor may be necessary to ward off low or shallow participation (Tallent-Runnels et al., 2006). At the same time, such interactions need to be structured and carefully planned and monitored if they are to be meaningful (Garrison, 2009).

Tip #2: Have students make connections between concepts: Related to Chickering and Gamson's (1987) "active learning" is to have students connect class material to other concepts, particularly "their daily lives."

In the BBC series *The Day the Universe Changed*, commentator James Burke (1985) discussed his "1 + 1 = 3 model" of learning — that is, one idea paired with another idea doesn't merely yield a second idea. Rather, it creates a third, wholly new concept. In the classroom, by having students pair one idea with a second idea, they create or *construct* a third concept. By promoting such social construction of meaning, we are in effect creating a *community of* learners, wherein the teacher and students help one another to learn (Brown & Campione, 1994). If that new concept was of the students' own design and creation (as opposed to the instructor's), they are more likely to retain it and find applicability for it.

In the online classroom, there are ample opportunities to have students connect concepts to other ideas. Many online students are employed full- or part-time (Choy, 2002; Puzziferro & Shelton, 2009). Thus, you can ask students to apply theoretical concepts of the course to their workplace. Also, have students pose real-world problems, drawn from their workplace experiences, and ask them to pose solutions. This not only promotes problem-centered learning (Fish & Wickersham, 2009, p. 280), but also connects the course to the workplace and encourages collaboration. Some online classes also rely upon case studies for discussion. You might ask students to rewrite the case studies based on situations from their experiences.

Tip #3: Make student interaction with the instructor and your own "social presence" part of the course: Chickering and Gamson (1987) noted that "contact between students and faculty" as well as "giving prompt feedback" are necessary for students to benefit from courses. Research into online teaching has equated this to "social presence" — the degree to which a person feels "socially present" in a mediated situation (Kim & Bonk, 2010). Since the online instructor and student are separated by distance, it is imperative that online instructors achieve a strong sense of presence in their courses. As stated above, without ample and swift student-instructor interaction, students will feel cut off and isolated from the course and, ultimately, the learning process will suffer.

There are numerous ways for instructors to create a strong social presence in the online classroom. Personal behaviors that build social presence include returning e-mails or phone calls quickly — often within 24-to-48 hours; regularly praising student's work or actions through e-mail, a phone call, or feedback on an assignment; willingly becoming engaged in conversation with students outside of class contexts; and creating an instructor home page, containing both visual and written content (photographs and narratives) not related to the course material (Kim & Bonk, 2010). These behaviors will help students to see the instructor as a real person, not as cold and distant.

Class-related strategies that build social presence include scheduling synchronous events during your course, as in live web camera sessions. Allowing students to see you in person

will not only help build social presence, but — when students see you and your non-verbal cues — help them better decode your written communication. Having regularly scheduled office hours each week when you will be at your computer and on the class site checking messages creates a sense of continuity and dependability.

Discussion boards can also be used to forge social presence. Create a space on them where non-class content can be discussed. Encourage students to use that space if the discussion boards become cluttered with non-class issues. During the first few weeks of the course, make it a point to reply to every student post, even if it is a short response. Research has demonstrated that regular use of the asynchronous discussion boards contributes strongly to a student's positive attitude toward and persistence in an online course (Tello, 2007).

If this seems like a lot of work, it is. Cultivating strong instructor presence can be demanding. However, faculty would not purposefully miss a session of their face-to-face courses. In the same way, instructors must be dedicated to being "present" in their online counterparts.

Tip #4: Balance amount of information available and weekly assignments with the time students have to digest it all: I have already noted that online learners are often working adults trying to balance the responsibilities of a course with the responsibilities of a full-time job (Choy, 2002; Müller, 2008). I have also stated that the online learning environment can draw upon an unending amount of material. And I have discussed how online classes depend on writing, an often time-consuming process. Put them all together and it is easy to overwhelm your students. One observer wrote that having the "world at their fingertips" is often a hindrance to students' learning (Bourne et al., 1997, p. 53). Thus, strive to balance what the students need to learn from your course with the time they have to learn. In online courses, less may indeed be more.

I know a student who was working through an online nursing program. She expressed dismay that her weekly assignments involved multiple modules with several levels of sub-modules in each that covered several hundred pages of reading each week. That, coupled with her role as a working RN (with regular 12-hour shifts), made for a very frustrating course experience. The student was convinced the instructor never even read her responses on the discussion board. Ultimately, she adopted a mode of "survival," meaning she did the minimum amount of work required to pass the course.

The inability to fulfill both work/employment and course demands is a primary reason students drop out of online courses and programs (Frydenberg, 2007; Tello, 2007). High dropout rates among online students are a "black eye" for distance education. Early research found that the dropout rate for distance learners was higher than those in traditional classrooms (Phipps & Merisotis, 1999; Smith, 2006), and the high dropout rate persists today (Burnsed, 2010).

Although studies vary widely in their estimation of dropout rates, one examination put it at 21 percent, which was still higher than traditional courses (Frydenberg, 2007). Overall, NCES statistics show the total percentage of undergraduate students taking their entire program via distance dropped in 2007-2008 from 5 percent to 4 percent. In 2010, the overall growth of online programs slowed to 10.1 percent, the smallest gain since 2002 (Allen & Seaman, 2011). Taking the multiple demands of the online learner into consideration when designing your course activities will go a long way in helping students to persist in your course (Tello, 2007).

Tip #5: Make sure your learning outcomes are appropriate to your technology options: There's an old saying — "To a hammer, the whole world is a nail." In the same way, it's easy for online instructors to favor one technological tool over all others. Yet, different technologies will afford different learning experiences. In designing your course, it is imperative that you properly match your use of technology with your learning objectives. Let the course objectives drive your selection of technological tools (Bernard et al., 2004).

My seventh-grade daughter uses interactive online quizzes to learn math. She is presented problems to solve and is given multiple-choice options. The problem solving nature of math makes the interactive nature of the technology an appropriate learning tool. Since she began using the interactive quizzes, her grades have steadily risen. However, talking about math on a discussion board would likely not have the same effect. Likewise, if you wanted students to demonstrate mastery of web design concepts, you'd likely have them create a website rather than discuss what their web pages look like in a synchronous live chat. In my earliest online teaching experiences, I spent too much time using e-mail. I quickly discovered that e-mail — with its short, quick, personal, and often grammatically challenging characteristics — was entirely inappropriate for classroom discussions. Students couldn't follow the multiple threads of discussion, and the messages simply cluttered their inboxes.

Mix up your technological offerings and match them not only to what you want your students to learn but also to how you want them to learn. Bourne et al. (1997) offers salient suggestions for matching course objectives with technological options.

Implementation

Implementing your course can take just as long as planning it, if not longer. Implementation involves steps such as pilot testing and verifying the content and functionality of your course website.

Tip #6: Plan up to 12 months to fully implement your course — from initial design to the first day of class: If you have been assigned to develop a new online course, it is likely that you have been asked to develop it for "next term" — meaning the course should be ready in less than six months. Ideally, you should ask for 12 months (Coyner & McCann, 2004, p. 228). Such generous lead time affords

the opportunity to not only prepare your course but to pilot test it, a necessary step to ensure a quality online learning experience. Having others "test drive" your course will help identify elements that are unclear or simply not functioning.

Common problems discovered in pilot testing online courses include malfunctioning content links, conflicting information on the site, or technological modules not working. Larger course management systems (CMS) packages like Blackboard have multiple technological options, such as journaling, synchronous whiteboard classroom modules, and discussion boards. Test all the tools you plan to use before the course starts to make sure they operate properly. Smaller CMS packages may offer similar technology features, but they may not be functional on your school's network. Some tools, such as live chat, may require additional servers or network support and not work initially, which you do not want to discover mid-way through your course. Diligently checking your course will not only ensure clarity of your class site but also reduce student frustration.

Tip #7: Prepare your students technologically: Aside from social isolation, malfunctioning or non-functioning course technology is often a great frustration for students. Solving technological problems while a course is in session takes valuable time away from other course activities (Van Tryon & Bishop, 2009). Preparing your students technologically before the class begins can prevent potential problems during the course. You may consider pre-testing students' technological abilities to ascertain their technological readiness for the online environment (Rabe-Hemp et al., 2009). Require your students to pass basic computer proficiency exams before admittance into your class or even your online program. Some online programs have technological tools that will test students' computers and browsers to ensure they have sufficient computing power to participate fully in the course.

Instructors should also inform students how technological tools used in the course might pose confidentiality or privacy risks. Online tools such as discussion boards or blogs — which are often employed to help students reflect upon coursework as well as their personal experiences — make it relatively easy to share potentially sensitive or inappropriate information, such as grades, private conversations with other members of the class, or sensitive health issues of others. Such topics are often not related to course content, and the unintended sharing of this information can only hurt the course community. In general, topics that would be inappropriate for the regular classroom are inappropriate for the online classroom. Policies concerning acceptable behavior and sharing in forums should be made part of your course syllabus or be in other program-related documentation. One school posts their privacy, confidentiality, and netiquette guidelines on their program information page (Adler, 2011).

Model for Integrating Design Suggestions into a Class

Over the past few years, I have regularly taught a course on the social effects of media in an online graduate program in communication. Here are a few examples of how I have integrated some of the above course design suggestions into that class.

Collaboration: Students in the class make frequent use of discussion boards. Course readings include three required books, plus one more of the student's own choosing. Each week, students are required to respond to a lead question from the instructor, but they also raise questions about two other classmates' responses. Students often collaborate by forging a group response to a weekly question. One of the course texts is Postman's *Technopoly.* In it, Postman discusses how varying groups of technologies have impacted culture. Since the book was written in the 1990s, I ask the class to imagine that they have been contacted by the publisher to update the book. Part of the publisher's request is to add a new chapter to the text. I ask students to consider what modern technology (developed since the book was published) would be a fitting subject for this new chapter. I divide the class into groups, and each group debates the topic for a week and puts forth a proposal at the week's end. The groups are then asked to defend why their chosen technology would be appropriate.

Connection: A portion of the course is dedicated to taking a "media fast" — that is, reducing or eliminating one's personal media use for one week. This exercise is intended to connect the course readings and concepts to students' personal lives by heightening their awareness of their personal media consumption (it's a very difficult assignment by the way!). A final part of the exercise involves reflecting upon how their use of a particular technology will change in light of their readings and their personal experience of fasting from the technology. By connecting the course concepts (influence of media) to their personal lives, the students have a powerful learning experience.

Social Presence: To create strong social presence, I call students by phone before the course begins. As one student told me, "it helps to put a voice to the text." I have found it also helps allay fears of online learning for those taking their first distance course. As the course progresses, I hold regular online office hours, maintain a page with personal information, and contribute regularly to the discussion boards. As suggested above, I diligently work to respond to all posts within the first few weeks of the course. About halfway through the course, I schedule a synchronous web chat. The web event (with camera) takes place after a common event, like the above-mentioned media fast. We use the synchronous chat to begin the process of debriefing from that experience.

Balance: Although this course utilizes four books, the three that I choose tend to be of manageable length—usually less than 200 pages. Thus, the reading component does not overwhelm the students. Also, I try to be as clear as possible in my assignment expectations and instructions by having clear rubrics that convey students' responsibilities quickly. This saves them time needed for reflecting on the course content.

Implementation: I am fortunate to have an instructional designer and program manager to help with implementing my courses. Student aptitude and computer functionality are checked before enrollment in the program. The course web site (via Blackboard) is regularly checked before each term for accuracy and functionality. In one case, pre-testing the course helped to uncover a potentially embarrassing issue with the Blackboard student journaling tool, which allows students to privately reflect on the course content. I had intended the student journals to be private between the student and the instructor. However, the process of pre-testing revealed I had actually activated the blogging tool, which functioned similarly but was decidedly not private — the whole class would have been able to see the entries. Thankfully, this was rectified before the class began.

Conclusion

If you have suddenly and unexpectedly been assigned the task of developing an online course, fear not. By recognizing online learning's unique qualities and designing your course around the key principles of collaboration, connection, social presence, and balance, you can create a course that will not only help your students achieve success in your class but will also broaden your skills as an instructor.

One of the great debates about online learning has been whether it is "better" than traditional educational (i.e., face-to-face) formats. Do students learn as much online as they do in a traditional classroom? Russell's (1999) "no significant differences" findings shaped a lot of the early rhetoric concerning this issue. More recently, average student ratings of progress on IDEA objectives the instructor rates as "essential" or "important" do not differ meaningfully between online and face-to-face courses (Benton, Webster, Gross, & Pallett, 2010). Other studies found statistically significant differences between online and face-to-face courses on direct measures of student outcomes, with older students in online or hybrid courses faring slightly better than their traditional counterparts (Means, Toyama, Murphy, Bakia, & Jones, 2009, pp. xiv- xvii).

The intent here is not to try and settle the question of which approach is better. Rather, I want to emphasize that there is a difference in the quality of online courses when proper design steps are not taken or best practices are ignored. In the words of Bernard et al. (2004, p. 413), "effective distance education depends on the provision of pedagogical excellence".

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