

1-1-2005

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Recommended APA Citation

Mabrito, Mark (2005) "Guidelines for Establishing Interactivity in Online Courses," *Innovate: Journal of Online Education*: Vol. 1 : Iss. 2 , Article 6.

Available at: <https://nsuworks.nova.edu/innovate/vol1/iss2/6>

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Guidelines for Establishing Interactivity in Online Courses

by Mark Mabrito

Students are most successful in online courses that provide ample opportunities for them to interact with the instructor, other students, and the course content. An interactive online course must engage students as active learners rather than as passive participants. How can instructors design virtual classrooms that offer students with a variety of learning styles and preferences the greatest chance of success? This article suggests ways of increasing interactivity in online educational environments.

Why Interaction is Important

Students' perceptions of course interactions can influence their assessment of online course quality (Klesius, Homan, and Thompson 1997; Zirkin and Sumler [1995](#)). Studies suggest that students who succeed in an online course do so because the course allows them to be active participants (Verneil and Berge 2000) and promotes collaborative learning (Miller and Miller [1999](#); Berge 1995). Fulford and Zhang (1993) found that students who perceive a course to be highly interactive will derive more satisfaction from the instruction than students who perceive the course to be less interactive.

To ensure that their courses promote effective interaction, instructors need to confirm that students understand the instructor's expectations, that course content is easy to follow, and that opportunities for feedback among students and instructor exist (LaMonica [2001](#)). Moore and Kearsley (1996) describe three categories of interactivity: student-instructor, student-student, and student-course content. Each category can be further subdivided to account for the specific character of an interaction—that is, where it occurs, who initiates it, and in what time frame it is achieved. Interactions may happen in public places like discussion boards and in more private spaces like e-mail; a student may initiate interaction with an instructor or vice versa; and interactions may occur synchronously (e.g., through instant messaging) or asynchronously (e.g., through listserv postings). Below, I suggest guidelines for enhancing each type of interaction in online courses.

Student-Instructor Interaction

In an on-campus class, students see their instructor on at least a weekly basis. In an online class, ongoing e-mail contact can establish an electronic version of face time with students. E-mail may be the most common form of communication in online courses, but its asynchronous nature poses particular problems for students with time-sensitive questions and schedules. To mitigate these problems, I observe a 12-hour rule in my courses: I answer any e-mail inquiry within 12 hours of receiving it, seven days a week. At peak times, such as the beginning or end of a semester and the few days before assignments are due, this rule becomes quite a commitment. It is a necessary one, however, because it models my own dedication to the course.

Most students appreciate additional, individualized attention in real time. Online office hours and conferences are two means of connecting with students synchronously, and both can be established with free messaging services (e.g., AOL, Yahoo, and MSN instant messenger) and the synchronous communication features included in courseware packages like [Blackboard](#) and [WebCT](#). These tools offer a feature that is particularly useful for online office hours: If class members and the instructor exchange screen names, then each person who is logged on can know when others are available. Another software option is Java-based, synchronous chat clients that can be added to a course home page (some at little or no cost) by copying and inserting a snippet of code. Should synchronous communication be unwelcome at a particular time, many chat programs allow an individual to be "away" or "invisible" when he or she is online but preoccupied.

One advantage of synchronous communication is that students receive immediate feedback. During online office hours, students can instant message the instructor with questions and get answers much more quickly than they would with e-mail. The corresponding disadvantages are that students must be able to instant message during a set time frame, and too many or too few may take advantage of the instructor's availability. I set two office-hour schedules and alternate them on a weekly basis; one week I am available Monday and Thursday, and the next week I am available Tuesday and Friday. I also encourage students to sign up for scheduled online conferences.

Once they have developed a relationship with the instructor, some students may feel comfortable posing questions in a more public space like a discussion board. Exchanges between one student and the instructor may be doubly efficient if the student seeks information that would benefit others in the class.

When establishing policies for e-mail, online office hours and conferences, and discussion boards, it is important to remember that asynchronous communication promotes different kinds of interaction than synchronous communication. In asynchronous conversations like a class discussion board, topics may receive more follow-up comments because participants have more time to reflect and respond. In synchronous interactions, there is greater pressure on the participants to respond more quickly, making messages more linear and brief (Lapadat 2002); consequently, real-time interactions may not be appropriate for a discussion of difficult concepts that need lengthy and in-depth explanations. I encourage students to recognize the differences and to know which type of interaction best suits their current need.

Instructor-Student Private Interaction

The instructor should not only be available to students when they make contact; he or she should also initiate regular, ongoing communication with students as a group and individually. Such communication can help students stay focused and manage their time more productively in the course.

A student who is likely to succeed in an online course is motivated, self-directed, and capable of working independently (Carlson and Repman 2000). Although it would be nice to think that all students who gravitate toward online courses naturally possess these qualities, the ideal student is not necessarily the typical student. Through e-mail, the instructor may help individual students stay motivated in the online classroom. While much attention has focused on how instructors of online courses can build a sense of community in public spaces such as a discussion board (Markel 2001), less emphasis has been placed on how these important connections can be achieved one-on-one. Brief e-mail messages that praise a student for a project well done or explore an idea that the student put forth in a synchronous exchange create an affirming learning environment. However, because such communication is unsolicited, the instructor should use it sparingly so that students do not feel they are being singled out.

Sometimes the instructor may find it more effective to interact with a student in real time, perhaps in an online conference. Though courseware packages and messaging services have a feature that indicates when particular people are online, I generally favor e-mail over instant messages for requesting a conference. My assumption is that, when students are online, they generally are busy working on something that I should not interrupt for an extended conversation. If I notify a student via e-mail about the need for a conference and schedule it for a mutually agreeable time, we are both more likely to be prepared for the synchronous conversation. Occasionally, I do instant message students, particularly if only a few back-and-forth responses are necessary to resolve the issue at hand. Because instant messaging between instructors and students is a relatively uncommon kind of interaction, I have found that some students are more willing to contact me via instant messaging if I contact them first.

Instructor-Student Public Interaction

In a face-to-face course, class discussion is the most common means of promoting visible participation. In online courses, these discussions can occur in synchronous chat programs or in asynchronous discussion

boards. The former most closely resemble their face-to-face counterparts, but orchestrating them is a challenge. Unless regular class meeting times are set, scheduling synchronous chats can be difficult. Plus, the rapid nature of real-time interaction may make it difficult for some students to participate, especially those who type, read, or respond more slowly than others. Providing students with a set of suggested discussion topics/questions before the session may help students feel more confident and make for a more productive synchronous session. On the other hand, asynchronous discussion boards give students more flexible options for contributing and may produce responses more akin to written, formal language.

More important than the technology students use to communicate with each other is the question of how to ensure that all students participate and how (or if) their participation should be evaluated. Online discussions may revolve around predetermined topics or may occur more freely. I prefer a middle ground. When introducing a new unit, I offer several prompts that establish the initial focus of the discussion. Students' responses branch off into multiple directions, which reflects engaged thinking and debate. Furthermore, since I use an asynchronous discussion board, students are free to participate at their convenience during the range of dates provided for each discussion. Depending on the complexity of the unit, the discussion board might last for one or two weeks.

Levenburg and Major (2000) suggest that participation should be evaluated to recognize students' commitment to the course and to encourage them to contribute. In a survey of graduate students, Muirhead found that the quality of discussions suffered when participants perceived that others were late in contributing posts to the online discussion; he states that "consistent on-line communication was the key to improving interactivity" (2000, under "Research Results"). In the past, I used a formal rubric to evaluate student participation, but now I prefer a less-structured approach. At the beginning of the course, I tell students that, to get the most out of my class, they should participate in class discussions consistently and offer substantive comments. I use a five-point scale to rate participation after each discussion unit, with 1 being the lowest score and 5 the highest. While I try to avoid quantifying the guidelines further (e.g., by counting the number and length of messages), I do calibrate students to my expectations. For the first discussion unit, every student receives a score of 5, but I also post a second score that indicates what each student's performance would earn in subsequent units. While no one is penalized the first time out, students do have a barometer by which they can gauge what is expected of them. This is important, as I factor the scores into their final grades. Hawisher and Pemberton (1997) suggest that students perceive online discussions as meaningful when the instructor establishes a context for the interaction, when the interaction approximates a real communication situation, and when participation is graded.

Instructors have the ability to highlight the importance of class communication by becoming active and ongoing participants in the process themselves. By participating in the discussion boards, instructors can help ensure that class discussions become a dynamic aspect of the course. Attempting to manage discussions without becoming the dominant voice in the class is not an easy task for the instructor. One method that I have found useful is to post follow-up questions to students' comments. The purpose here is to stimulate students' ideas and, one hopes, encourage them to pursue the topic even further. I prefer this method over posting new topics of conversation because I want to avoid a situation in which the discussion degenerates into "teacher talk," where students feel compelled to discuss my topics and ideas. Whatever the approach, modeling good discussion board participation stresses the importance of classroom interaction as a knowledge-making process, not just an empty course requirement.

Finally, not all students may want or need to participate in class discussions; some may derive a real pedagogical benefit from "lurking." For example, Sutton (2001) suggests that direct interaction is not necessary for all students; some students may benefit vicariously from observing the interactions of others. From a practical standpoint, if participation is to be evaluated/rewarded in the course, these kinds of students pose a problem. I eliminate the issue by allowing each student to post entries in an online journal that is accessible only to the student and me. Although other students do not have the benefit of reading the responses, the exercise serves a similar pedagogical purpose for the contributor: Like the discussion board participants, the students who opt for a more private exchange formulate their responses in a structured way

through writing and synthesize what they have learned from the course material as well as from their classmates. Although the majority of students generally choose to participate in the group discussion, the few who take the journal option benefit pedagogically in ways that they normally might not.

Student-Student Interaction

Students should have the ability to communicate with each other via discussions that are built into the course. Facilitating student-student interaction in different and substantive ways is key to the success of any online course. Students benefit from interaction with peers, though relatively few willingly seek out such support. Chester and Gwynne (1998) found that anonymity (achieved through the use of aliases) encourages some students to be more active in online discussions. I create an anonymous discussion board where students can seek assistance/information from other students without revealing their identities. As the instructor, I make it clear to students that it is a space I never enter. The board often becomes a popular gathering place, a low-stakes environment where students can both ask for help and offer assistance. This type of anonymous interaction is useful not only as an informational tool for students, but also as a way to linguistically process their own experiences—both positive and negative—in the course.

If used more formally, student-only spaces also can become valuable resources for collaborative work. An instructor can assign students to online study or project groups. In my own online classes, I try to engage students in one or two collaborative writing assignments. Students meet in a Web discussion board and synchronous chat sessions to both plan and execute the assignment; their interactions include brainstorming as a group, setting goals, and delegating responsibilities as well as writing, revising, and sharing drafts throughout various stages of the project. In addition to honing their composition skills, students gain experience with project management in online environments. Successful projects will not necessarily occur automatically, and instructors should set the context and put structures in place to ensure a productive experience for students. Severn (1998) suggests one such method by encouraging instructors to use group contracts as a way to promote contact among students working on small-group projects.

Student–Course Content Interaction

The course Web site should be logically organized and easily navigable. Guay (1995) separates Web interactivity into three categories:

- navigational (e.g., the user clicks on hyperlinks to go to different pages);
- functional (i.e., the user and system work together to achieve a goal, such as finding information or placing an online order); and
- adaptive (i.e., the user has the ability to alter the page).

The first two categories are relevant when assessing the degree of interaction between students and course content.

Ideally, the course Web site should be not just a repository of information, but also a space where students actively participate in the course. This form of functional interactivity can be achieved with chat rooms or discussion boards, among other tools. Regardless of whether they use a courseware package to create academic Web sites or build them from scratch, faculty members should seek technical assistance. Fell and Greek (1997) argue that an online class should be a joint production of faculty members, technical support personnel, and publishers. When they work in consultation with someone who understands technology and pedagogical design issues, faculty members have more time to concentrate on mapping the instructional sequence and matching the course design with learning outcomes.

Course Web sites should have a front end (i.e., a central home page) that is aesthetically inviting to students and that conveys the overall structure of the course and the site. One example of poor design is a home page

with links to every aspect of the course, including all assignments and every piece of information students will need for the duration of the semester. This approach results in information overload, unnecessarily confusing students. The opposite extreme is a relatively sparse home page that hides relevant information deep within the layers of the Web site. A well-designed site, by contrast, has a navigational structure that is readily apparent to students. At a glance, they should understand the main sections of the course and how to move from one to the other. The Web site should offer navigational links, such as a link bar or menu, as well as a search option. Within the main sections, embedded links can provide access to additional information within the site and on the Web. Regardless of how much information may be included on the course site, an effective rule of Web design is that students should be able to access any page within the site with fewer than three clicks of the mouse (Nielsen 2000).

Learning is, by default, more self-directed in online classes, so students who require extensive reinforcement and cues from their surrounding environment may not fare as well in them. Additional cues may help these students better evaluate their performance in a course. Such prompts might include interactive self-assessment quizzes, links to tutorials within the course, and/or links to related, supplemental content on the Web. In general, the design of course material should accommodate different student preferences. For example, students can approach a writing assignment in one of my courses in several ways. Some may choose to review a written summary of the relevant unit, read Web-related resources, participate in discussions with the class, and then attempt a draft of the paper. Other students may opt to participate in the class discussion before reading through the supplemental materials. Still others may never access the provided Web links. Some students may feel comfortable writing a full draft before soliciting feedback, while others may want feedback from me and their classmates after drafting several paragraphs. Not all approaches prove successful, and students are free to modify their tactics as the semester progresses. In the process of discovering what strategies work best for them, students learn to make more efficient and productive use of their time.

The instructor must remember that what works well in one class may not in another. One effective way to evaluate the pedagogical design is to ask students to assess or react to the course early in the semester. An informal writing assignment in which students describe what they do in a week's time for the course and comment on its best and worst features may be sufficient. This reflection could help the instructor decide whether the course meets students' needs (in terms of both interactivity and learning), and it also might reveal patterns in how students process information as they navigate the online learning environment. The goal in soliciting feedback is to better understand how to facilitate a learning experience that offers multiple avenues of tailored instruction for individual students.

It is also important to remember that not all students are text-based learners. Some students may fare better when they see graphic presentations of information; have access to hands-on, computer-based simulations; and/or hear audio files. For students who are visual learners, animations or streaming video can be used to reinforce content. Most instructors lack access to video resources and the necessary technical skills to create such learning aids from scratch, but publishers are providing more of these materials in combination with traditional textbooks. In addition, if instructors spend some time searching the Web, they may find free or low-cost resources.

In my business writing class, students may read a case study about a corporate communication problem and then go to the textbook publisher's Web site to see video interviews with the key players. For a different content unit, students may read about effective job interviewing skills and then view and critique an actual recorded job interview. Addressing the needs of auditory learners is perhaps easiest because most computers can produce quality sound files with the addition of an inexpensive microphone. I occasionally ask students to comment on their classmates' drafts by recording verbal feedback in addition to (or instead of) providing written responses; I frequently provide verbal feedback as well. Common software makes incorporating images, animation, and sound into course materials feasible for even the least technically savvy instructor, and the potential benefits for students make the time investment worthwhile.

Conclusion

Increasing and diversifying opportunities for interaction takes planning, time, and energy, but instructors should not feel overwhelmed by the prospect. Dereshiwsky (2001) suggests that methods of assessment in the online classroom need not necessarily differ that much from methods used in traditional classrooms. Every interaction does not have to be evaluated or occur in a formal, graded assignment, and the instructor does not have to preside over every classroom exchange. Sometimes students learn a great deal from each other, and instructors would do well to give them that opportunity.

Making the online learning experience more interactive for students can only help to create a classroom environment where students are more likely to succeed. Taking into consideration how students interact with the instructor, their classmates, and the course content is a step in the right direction, one that promotes a rewarding learning experience. The more opportunities the instructor can create for interaction, the more likely active learning will occur.

[Editor's note: This paper was modified from a [presentation](#) at the seventh annual [Teaching in the Community Colleges Online Conference](#), May 2002.]

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Note: This article was originally published in *Innovate* (<http://www.innovateonline.info/>) as: Mabrito, M. 2004. Guidelines for establishing interactivity in online courses. *Innovate* 1 (2). <http://www.innovateonline.info/index.php?view=article&id=12> (accessed April 24, 2008). The article is reprinted here with permission of the publisher, [The Fischler School of Education and Human Services at Nova Southeastern University](#).

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