

## What Can Online Course Components Teach About Improving Instruction and Learning?

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Course design techniques learned from the initial online offering of a general education Oral Communication course can enhance traditional course formats. Electronic course components can increase instructor efficiency while enriching student learning. The use of technology prevents farming out courses to more poorly trained personnel and can stem the tide of unmanageably large sections. Enlisting students in course maintenance and update increases their involvement in the course while conserving instructor time and assuring current, accurate material. Electronic augmentations allow for "layered learning," which permits students to experience course material in many different modes while preserving class time for personal interactions and practice of performance techniques.

Writing in 1918, Thorstein Veblen lamented the "businesslike expediency" that had replaced ecclesiastical authority as the ruling principle of higher education (1976, p. 507). Veblen labeled the modern university a "corporation of learning" that placed profitability above knowledge (1976, p. 524). In lean economic times, however, fiscal responsibility demands that colleges and universities find ways to educate students both effectively and efficiently. Increasingly, higher education has turned to technology, specifically using online courses and course components to approach this objective. To what extent, however, can efforts to "electronify" traditional instruction improve learning while reducing costs and maintain-

ing student satisfaction with their educational experience?

Williams (1989) proposes several productive directions for research on communication technologies. Among the questions most germane to this essay are: "What are the rhetorical strategies for overcoming the transmission limits—often depersonalization—imposed by some media technologies? . . . As routine communication is accommodated by technologies, what communication priorities should be given to face-to-face opportunities?" (p. 217) Scholars still sometimes lament the dearth of theoretical frameworks for analyzing computer-mediated communication. Dordick (1989) observed that mass communication theories seem inapplicable to the communication environments created via computers, and traditional interpersonal theories fail to account sufficiently for asynchronous communication.

Aside from the need to develop theories that clarify how computer-mediated communication operates, at least two forces converge to stimulate development of technologically enhanced pedagogy: economic constraints and preservation of quality. The needs to conserve funds and to improve quality might sound antagonistic or even antithetical. This essay explores how tech-

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nological innovations, many derived from the initial online offering of the basic communication course, not only can reconcile but improve both economic efficiency and instructional effectiveness. Electronically enhanced course components also present opportunities to enhance student educational experiences.

Instructional delivery methods can be plotted along a continuum that runs from traditional, face-face class meetings to totally online courses that have no direct interpersonal contact. Increasingly, courses are falling between these extremes. Experience with online courses can illuminate the reasons why computer-mediated course delivery can be integrated productively into a variety of course formats. The examples and data in this study are derived from our department's inaugural online general education course in oral communication. This course, required for all students, covers interviewing, interpersonal communication, group problem-solving, and public speaking. It was offered for the first time in Fall 2001, so the data are preliminary.

To determine how online components might affect instructional delivery and learning outcomes, we are experimenting with importing electronic course components into the Fundamentals of Oral Communication course. Approximately 400-450 students per semester take the course, plus at least 50 who enroll during summer sessions. Specialists in course redesign recommend focusing on such large enrollment courses, since even small cost savings mushroom when applied to dozens of sections and hundreds of students. Improvements in instructional delivery can reach more students in such courses (Twigg, 2000/2001).

The basic communication course offers intriguing possibilities for electronically-based redesign. Our basic course qualifies as a "hybrid" because it covers interpersonal communication, interviewing, small groups, and public speaking. Some skeptics might

doubt the ability to convert elements of these kinds of interaction to electronic modes. This variety of communication contexts presents the special challenge of simulating these environments online. For example, can asynchronous threaded discussions capture the dynamics of a group meeting? The current project, however, concentrates on how elements of the fully online course might adapt to the traditional course format and thereby enhance instruction. Experience developing the first online section of this basic communication course teaches important lessons about the possibilities and limits of electronic course components. Since the online section is being taught while face-to-face courses are offered, direct comparisons will be possible. All sections of the basic course are taught by faculty, whose ranks currently include three adjuncts, six full-time instructors, four assistant professors, one associate professor, and one full professor. Although students benefit from instruction by highly trained teachers instead of graduate assistants, the variety of instructional styles does raise concern about consistency. As Twigg (1999) observes,

Whether taught by tenured faculty, instructors, adjuncts, or graduate teaching assistants, this model requires each instructor to develop his or her own set of course materials, including tests and examinations, and to deliver what is basically the same material in his or her own style. As a result, course outcomes vary considerably and, more important, are not always consistent with students' learning abilities. (p. 15)

Can the infusion of technology introduce greater consistency without sacrificing academic freedom? One goal of this project is to increase instructional flexibility by moving static course content online, thereby freeing instructors to provide more individualized attention to students in face-to-face interactions (Twigg, 1999, p. 16).

### *Technology and Passive Consumption*

Veblen is perhaps best known for his descriptions of conspicuous consumption. When configured as consumers, students may exhibit some "conspicuous" characteristics. A defining characteristic of conspicuous consumers, in addition to flaunting their possessions, is wasting them. Student-consumers all too frequently may circumvent or fail to use the capabilities of technological components. From a consumer standpoint, we may encounter what Ritzer (1996) calls the "McDonaldization" of education. The cuisine at McDonald's is highly predictable, consistent, but not particularly interesting or nutritious. Some, perhaps a significant proportion, of students may gravitate to online courses for exactly the wrong reasons: the perception that they are easier than traditional formats, or the desire for a minimalist education that bypasses social interaction. The fast-food species of student appears in online courses as the lurker in chat rooms, never initiating discussion but spectating and perhaps occasionally responding to direct inquiries. Perhaps more likely, the fast-food student simply avoids the interactive components of technology altogether. In our online basic course, live chats are staggered, occurring at different times on different days of the week to accommodate various student schedules and time zones. Despite these fluctuations, generally the same students and always no more than half the class participate in the chats, all of which are ungraded. Similarly, students never post comments on the open discussion boards that accompany each unit—unless the posts are graded.

This apparent communication reticence has another dimension, however. Although most students withdraw from public forums, they have fewer qualms about direct interactions with the instructor. Substantive e-mails, such as specific questions about course material and requests for advice about assignments, abound. In almost every case,

however, these e-mails come from the same students who participated in the chat rooms. Interestingly, the highest rates of participation occurred in the ungraded self-introduction assigned for the first unit. In one case, the self-introduction was the only post the student made during the course! Students eagerly embraced the opportunity for self-disclosure but avoided interactions that focused on course content.

Ritzer (1996) argues that the impersonal technology in universities teaches students to be docile, to conform to what is easiest for the teachers, the machines, or the scheduled curriculum. McDonald's channels consumer preferences toward convenience food—convenient to make, cheap to produce. Using purely economic models such as activity-based costing without including quality may set a dangerous precedent. Conservation of resources, not maximization of learning, becomes the guiding principle for instructional design. Technology, however, can contribute to immediacy or alienation. Everything depends on how instructors and students employ the technology. The central challenge for educators will be to (1) maximize engagement with students, especially when interpersonal contact with them is limited or absent, and (2) induce students to participate in these interactive components.

Development of electronically enhanced modules for the basic communication course responds to three challenges. First, how will technological components affect the cost of instruction? Second, how will redesigned course components affect the quality of instruction? Third, how will electronically augmented course modules affect student, instructor, and staff perceptions of the educational experience?

### *Economic Forces and Electronic Course Components*

As higher education budgets shrink, the options for response appear limited. The

situation in North Carolina, for example, mirrors that of many other states. Facing a \$70 million budget reduction, North Carolina's public universities may cut courses, "use more non-tenured faculty members, increase class sizes," and leave positions unfilled (Crouch, 2001, pp. 1B, 6B). Do these measures represent the only paths to cost reduction? As declining instructional budgets combine with personnel shortages, creative alternatives to crowded classrooms and less qualified instructors deserve greater attention.

Budgetary and personnel constraints combine to fuel greater competition in education. As Draves (2000) and others have foreseen, online courses allow institutions to compete in geographic areas where students had been unavailable to the brick-and-mortar university. By 2005, an estimated ninety percent of colleges and universities may have online courses (Shea and Boser, 2001), offering a larger menu of course options than were available on individual campuses (Draves, 2000). As online courses proliferate, more institutional competition arises as students encounter more choices than the local college. Furthermore, individual instructors are designing free-standing courses that they market to institutions. The colleges and universities pay a royalty fee for use of the course, and this cost could fall far below the salary for an on-site faculty member or adjunct with benefits. Thus institutions face competition not only from other institutions, but independent contractors are evolving into full-fledged competitors for the same students.

Several other competitors in higher education justify renewed attention to cost control and instructional quality. Colleges and universities now face educational competition from the business world. Some large corporations have devised online educational centers. Other for-profit companies design instructional modules that they market to businesses (Shea and Boser, 2001). Bur-

geoning competition may catalyze higher education to rethink its methods of teaching and learning (Twigg, 2000/2001). Even the most conservative colleges and universities cannot sit idly and maintain the status quo when faced with the prospect that they might lose enrollment to educational competitors.

One response to meet such economic challenges has been uncritical endorsement of online courses or course components (Lane and Shelton, 2001). Conventional economic theory suggests that rapid production increases can reduce the quality of the product as producers cut corners to meet production goals. This condition seems to hold in electronic education. Amid the hype surrounding online learning, a *U.S. News and World Report* special feature on e-learning cautions: "Some providers, including universities, bypassed educational quality in their rush toward Internet gold" (Shea and Boser, 2001, p. 50). The frenzied rush to "electronify," however, often neglects central questions about which kinds of educational experiences best suit electronic delivery methods. For example, we are very reticent to broadcast public speeches via web cameras and other devices. Speaker anxiety stems from fear of addressing a live audience, and the ultimate test of conquering that fear is successfully addressing an audience face-to-face.

Some critics have observed that hasty adoption of online technologies has generated high costs and faculty resistance (Shedletsky and Aitken, 2001). Faculty learning curves may be steep, resulting in long lead times for course development and inefficient course administration. Instructors may become swamped with replying to e-mail and correcting technological glitches. These problems, especially the cost issue, may stem more from the method of course design than from the electronic components per se. For example, an instructor can direct all technical questions to an online discussion board monitored by support staff or by

other students who often have far more computer savvy than the instructor.

The time expenditure required to initiate and maintain technological components requires further attention. Activity-based costing tends to equate time with money. The more time an activity takes, the more labor it costs. Most fixed costs of courses stem from the labor expended in teaching. These labor costs in academic contexts may appear constant. If that is the case, then the only way to reduce labor costs would be to reduce the number of instructors, much as corporations quickly eliminate jobs as a response to shrinking profits. Another approach offers potential cost savings: maximizing the efficiency of tasks by making time-consuming activities less labor intensive, or allocating such tasks to the least expensive labor pool. Several approaches emerge from these methods of economizing.

One way to reduce costs is to practice economies of scale. The most common tactic has been to increase section size, or to use faculty-taught mass lectures with smaller breakout groups taught by graduate students or other inexpensive labor. The results have become familiar and lamentable. Maximal student-instructor interaction will tend to occur with the least trained instructors as higher-paid faculty teach more students more impersonally. At least one university places graduate students as teaching assistants, but uses theater students to teach communication courses. The theater graduates have minimal course background in communication, generally hope to become actors and directors instead of teachers, and most have not even taken the course they are expected to teach. These teaching assistants also happen to earn among the lowest pay of any graduate instructors at the institution.

Some advocates of online courses have touted electronic communication as the ultimate tool to achieve economies of scale. Advocates of scalability presume an inverse

linear relationship between class size and net instructional cost. Some visionaries tout courses that boast enrollments in the thousands at a student cost of less than \$100 for three semester hours (Draves, 2000, p. 13). Electronic classrooms may promise scalability far beyond an administrator's best dreams or an instructor's worst nightmares. Draves, for example, estimates the average online course will enroll hundreds or thousands of students (2000, p. 19). These estimates, however, conceptualize electronic communication simply as a delivery system for course content. In performance courses such as the basic communication course, each student performance requires individual evaluation, whether the performance occurs via audiotape, videotape, or in person.

Seemingly endless expansions of course enrollment and deferral of teaching to the least educated personnel represent unacceptable ways to cut costs. While these economizing measures might reduce expenditures, they also sacrifice instructional quality. Economy never should compromise quality. To understand why economies of scale undercut quality requires some coverage of the relationship between learning and immediacy.

Hackman and Walker (1990) studied televised classrooms and their effects on teacher immediacy and student learning. They found that teachers who engaged in immediate behaviors, such as encouraging involvement, offering feedback, maintaining a relaxed body posture and using vocal variety were viewed more favorably by students than were teachers who did not exhibit these characteristics. In a similar study, Mottet (2000) concluded that teachers exhibiting immediate behaviors are perceived as being helpful, sympathetic, responsive, compassionate, and friendly. In a huge auditorium where students may not even see the instructor's facial expressions or have a one-on-one encounter with the professor, immediacy tends to suffer.

Freitas et al. (1998) found a difference in perceived immediacy when comparing students enrolled in a conventional classroom to students enrolled in a distributed learning classroom. The students enrolled in the conventional classroom found their instructors to have high verbal and nonverbal immediacy, whereas the students enrolled in the distributed learning classroom found their instructors to have high verbal immediacy, but low nonverbal immediacy. The distributed learning classroom in this study consisted of a classroom in which students and teachers had contact through interactive computers. The instruction was synchronous and the students could see and hear the instructor much like students in the conventional classroom. These results seem to mitigate the advantages of electronic additions to courses. Incorporating electronic course components, however, is designed to increase the personalization of face-to-face class meetings. Static content delivery, for example, can shift to electronic media, thereby freeing class time for hands-on activities such as practicing oral presentations.

Infusing the learning environment with more opportunities for immediacy should yield significant pedagogical benefits. In a study examining linear relationships between teacher immediacy and student learning, Christensen and Menzel (1998) found that students who exhibited higher levels of cognitive, affective, and behavioral learning were taught by teachers who had high nonverbal and verbal immediacy. Positive teacher immediacy has been linked to student affect (or liking) for teachers, student affective learning, student cognitive learning, and student motivation toward studying the content of the class (Baringer and McCroskey, 2000). When examining student perception of teacher immediacy, Freitas, Myers, and Avtgis (1998) found that both nonverbal and verbal immediacy have an effect on student affective, behavioral and perceived cognitive learning. While

studying causal relationships between teacher immediacy and learning, Bainbridge Frymier (1993) found that in classrooms with high teacher immediacy, students have more psychological arousal and affect toward a class. This leads to higher levels of student learning.

Indeed, narrow focus on directly documentable labor costs may miss some of the greatest assets of electronically enhanced education. Transferring cost measurement tools designed for tangible goods to cybernetic contexts could foster development of highly efficient but intellectually unchallenging course content. Gattiker (2001) adds that innovation might suffer as a result, since "an emphasis on efficiency reduces the likelihood of innovative uses of information and CIS [computer information systems] because the time and effort associated with experimentation and learning shows up only as increased inputs, thus reducing the efficiency ratio" (p. 9). We are discovering that electronic delivery of some course components may improve learning in ways that justify the time expenditure. These benefits include increased student engagement and layered learning. Elaboration of these opportunities calls for closer examination of the aspects of electronic course delivery that require significant labor costs.

#### *Getting Hyper, Searching for Missing Links*

The new electronic media should change how scholars theorize about mediated communication. The Internet encourages users to become more independent thinkers, choosing which links to follow and which versions of stories to read or believe (Rushkoff, 1999, p. 180). It is instructive that the Internet is used while television is only watched. Rather than offering prepackaged stories and opinions, electronic communication offers hordes of data that can be reassembled, edited, and rebroadcasted according to the user's preferences. With such recombinations now

possible, the unquestioning acceptance of television images and obedience to voices of authority touted as experts gives way to "raw data" that can be manipulated to suit user preferences (Rushkoff, 1999, p. 180). Adaptability and flexibility would add to the attractiveness of electronic educational explorations.

Paradoxically, some of the economic arguments for electronically augmented courses point to cost savings from inflexibility. Standardized components of electronic course modules may promise cost reductions. Some advocates of online courses and course components argue that although the startup costs of such courses exceed their face-to-face counterparts, long-range cost savings could materialize. Once the content is established, it can remain without the need for redelivery.

Online components, however, are dynamic. Hyperlinks may have a short lifespan and require continual updating. On the average, at least one out of five links on college and university web sites are inoperable, a phenomenon known as "link rot" (Harwood, 2000, p. 23). The ongoing need for link updates seems to present a disadvantage. After all, it takes time to check whether every link is valid, and much more time to replace bad links with valid ones. In this instance, time expenditure buys quality. Students have little patience for high-tech components that don't work. In our online communication course, students quickly notify the instructor when they encounter malfunctioning components. Since the hyperlinks might afford the only contact with some necessary course material (in our course, typically illustrations of concepts described in the multimedia presentations), a missing link deprives students of instructional content that cannot be obtained elsewhere. The face-to-face instructor always has the option of improvising.

More important, the rather mundane and sometimes laborious process of link

maintenance forces the instructor to remain current with course content. The life cycle of hyperlinks requires a vigilant instructor who must use only the most current available external resources. In cyberspace, old material vanishes much more quickly than in traditional print media. The crucial advantage of vanishing links lies in the continual emergence of replacement material that updates and improves course content. Thus online course components force instructors to engage in continuous quality improvement to assure retention of students and to maximize the currency of the course.

Link maintenance may present another opportunity for cost reduction through student involvement. In our online basic course, the instructor has initiated a "Link Patrol" activity. Students earn points by finding dead links in the course material. The first student who discovers the dead link gets the points, which encourages early detection and correction of link rot. This system allows continuous updates without the instructor checking the links repeatedly. Instructor time that would have been spent in link maintenance can be redirected toward more interaction with students. Students also have extra motivation to explore course material quickly and carefully so they can reap the bounty for finding dead links.

While hyperlinks do offer greater organizational freedom to users, they also disrupt the continuity of extended arguments, thereby perhaps fostering inattention to detailed, nuanced communication (Kaminer, 1999, p. 226). The hyperlink surfer resembles the television channel surfer who does not follow complete plots but catches discontinuous highlights by constantly shifting to "action" scenes on different channels. The discontinuity of hypertext fits well with the character of postmodern argument: "it encourages us to read digressively—the way we supposedly live" (Kaminer, 1999, p. 226).

One of our online students expressed concern about the nonlinearity that

hyperlinks introduce. The basic course employs multimedia presentations that combine streaming video of the instructor, PowerPoint slides, and hyperlinks embedded in the slides. Students click the hyperlinks for instant illustrations and applications of the principles and techniques being discussed. Our online student encountered difficulty navigating this multilane information highway. Following Kaminer's prediction, the student thought that exploration of the hyperlinks interrupted the train of thought in the presentation. The online instructor suggested that the student inject more linearity into the presentations. Ordinarily, students might activate the hyperlinks during the presentation. During this time the presentation pauses, then resumes when the student closes the explored window and returns to the presentation screen. The disconcerted online student, however, was instructed to engage the different media sequentially: experience the presentation with the PowerPoint slides, then return to the presentation and explore the hyperlinks independently. This student experienced an important component of electronically enhanced course components: the capacity for layered learning.

#### *Layered Learning*

A time-tested technique already provides a precedent for one learning opportunity that electronic course components offer. For decades, the Evelyn Wood reading dynamics programs have recommended layered exposure to written material as a way to increase comprehension. The Evelyn Wood technique involves repeated exposure to the text: first preview the contents, abstract, and subheadings, next skim the introduction and conclusion, then carefully read the text, and finally review the introduction, conclusion, and key points throughout the text. This layered exposure actually takes little more time than a single, laborious reading. The preview and review make the complete read-

ing more efficient because the reader understands the author's objectives and organizational pattern.

Electronic course components can operate similarly. The Interview unit of our online course offers an example. Students learn about information-gathering interviews in several ways. Students read the corresponding chapter of the textbook, just as face-to-face classes do. Then they watch a video demonstration of an information-gathering interview. While the interview proceeds, students see the interview and see a synchronized PowerPoint presentation that describes (1) the type of question being asked, (2) the definition of that type of question, (3) when to use and when not to use that type of interview question. Students then earn points by posting comments about the demonstration interview on the unit's threaded discussion board. Next, students go to the CD-ROM that accompanies the course. They view a complete sample interview, then engage in a written exercise that requires them to identify problematic questions and answers in the interview and rewrite them. Students then take a comprehension quiz that completes the unit. The Interview unit is completed just as students begin to prepare their own information-gathering interviews for the course. By the time students submit their proposals for the interviews they will conduct, they have (1) read the text, (2) watched and listened to at least two complete interviews, (3) viewed actual examples of specific question types, (4) received guidelines on how to question properly, (4) edited an interview, and (5) critiqued an interview. Aside from the sheer volume of exposure, students have engaged the material as spectator, reviewer, editor, reader, interviewer, and interviewee.

The quality of information students receive also exceeds that of the traditional classroom lecture. Students have unlimited access to videotaped instructional sessions along with authoritative notes in the form of

the accompanying PowerPoint slides. The access to notes directly from the instructor improves upon the system of obtaining fragmentary, possibly inaccurate notes from a classmate or even from a professional notetaker. So far, it seems that this system does nothing beyond the instructor who lectures and then places lecture notes online. Effective layered learning, however, replaces the ephemeral lecture with a more useful note system. The PowerPoint presentations with audio and video in the online learning package include an instant e-mail link that can display throughout the presentation. If a student becomes confused, she or he simply pauses the presentation at the point of trouble, clicks the e-mail link that appears constantly on the screen, and asks a question at the time of misunderstanding. The trouble spot is fresh in the student's mind and pertains directly to the material the student is studying. With passive lecture notes, students simply view the material without the instructor's visual and verbal reinforcement, then must exit the program, find the instructor's e-mail address, and formulate the question. Realistically, few students will exert the effort or tolerate the discontinuity in learning that such a procedure entails. The other alternative is to defer the question until an opportune time arises for posing it (whenever that may be), or simply suppress the inquiry altogether.

Layered learning offers several discrete advantages over the ordinary classroom lecture, even when online notes supplement the lecture. The only advantage online notes offer is increased opportunity to review the notes themselves. That advantage, however, fades if students cannot expose themselves repeatedly to the lecture that generated the notes. By contrast, our online basic course points to several ways layered learning can occur in electronic course modules:

1. Employ redundancy of the medium, ex-

posing students to audio, video, and textual versions of a unit's content.

2. Increase the variety of ways students can engage the material.
3. Increase duration of engagement with course content, since student investment of time is not bounded by the strictures of class meeting times.
4. Provide rapid access to help at the point where confusion may occur.

#### *Conclusion*

In our basic communication course, electronic course modules can achieve pedagogical benefits beyond those possible with sheer volume increases. In each module, we try to employ several tiers of exercises so students can progress toward mastery of the material. The library research module offers an example of our direction. If a student already knows American Psychological Association citation format, he or she has no choice but to sit idle and bored while this topic is covered in class. In an electronic module, the student can exhibit citation skills in a pretest that permits bypassing that component of the module. Now the student can allocate more time to areas that require further skill development, such as evaluating the quality of web sites. Customizable modules also reclaim the time of reference librarians whose most valuable efforts lie in offering individualized research assistance, not in pointing to publicly accessible citation guidelines.

One unaffordable casualty of the drive toward greater instructional efficiency may be curiosity. Whitehead warns that an overly systematized curriculum with a definite place for everything is bound to fail. He observes: "No scheme for education, and least of all for scientific education, can be complete without some facility and encouragement for browsing" (Whitehead, 1965, p. 49). Investing in instructional technologies should allow instructors and students to explore more different modes of teaching and learning. Entrepreneurship has become the watch-

word of those who want to depart from accepted views of business conduct and opt for more creative experimentation. Expenditures for online educational components can represent investments in the spirit of entrepreneurship. We propose that judicious use of electronically enhanced course components can help passive consumers of education develop into adventurous, active learners. The potential for pedagogical promise or peril lies not in the technological tools, but in the hands of those who wield them.

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