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Scaling Up: From Web-Enhanced Courses to a Web-Enhanced Curriculum

by Robert E. Wood

In the past decade, the most important technological innovation in higher education has been the enhancement of academic courses with Web-based information and tools. With and without course management systems, instructors have progressed from using what Kuechler (1997) referred to as an "electronic reserve shelf" to extensive, interactive online resources. The [World Lecture Hall](#), the most well-known repository of links to academic Web sites, attests to the vitality yet unevenness of this movement. A few "enhanced" courses do little more than deliver the traditional print syllabus via the Internet, but many prove that the creative possibilities of Web use are almost endless (see Mullinix and McCurry [2003] for a useful typology).

Given the success and popularity of numerous Web-based innovations, two colleagues and I wondered whether the benefits of technology use could be scaled up from the course level to the curricular level. Beginning in 1999, Ted Goertzel, Jon'a Meyer, and I solicited a series of Rutgers University teaching grants to develop a Web-enhanced curriculum for our department ([Sociology, Anthropology, and Criminal Justice](#); Camden campus), with particular attention to the pedagogical potential of streaming audio and video. While some departmental Web sites include instructional resources for students, ours is the first (to our knowledge) that attempts to identify and provide a broad set of resources to support and enhance the department's curriculum as a whole via the Web. This article describes our progress so far and the concepts and tools that we have utilized.

Core Knowledge and Skills

As part of an external review in the mid-1990s, our department made a commitment to steer the curriculum (two majors and three minors) in what we called a "skill-based direction." This decision was based on several factors. Most of our undergraduates were first-generation college students; many were not prepared for rigorous academic assignments and did not plan to attend graduate school in sociology, anthropology, or criminal justice. They were earning a bachelor's degree in the hope of getting a good job, and therefore needed to graduate with skills that could be carried over or adapted to jobs in education, human services, and business. Moreover, weaknesses in a number of basic skills were undermining the mastery of disciplinary content and forcing instructors in upper-level courses to spend disproportionate time reviewing material that students should have already mastered. We wanted graduates who could clearly articulate the relevance of their major and explain how the skills that they had learned would help them in the workplace.

In a series of department meetings, we therefore identified a broad range of skills that we wanted students to master. They included the ability to read and think critically, to use basic data analysis tools proficiently, to make an argument in writing, and to cite sources properly. At first, we saw this as a matter of instructors promoting the acquisition and retention of these skills in their own courses. But as faculty members developed course Web sites to accomplish our goals, we recognized the potential for Web enhancement to support not just individual classes, but our departmental curriculum as a whole. The first version of our Web-enhanced curriculum, intended to provide resources that students could use in a broad range of courses, came online in late spring 2000. It included:

- clear guidelines on plagiarism, reference citation, discipline-specific writing, our chosen statistical data analysis program ([MicroCase](#)), and proper table and graph formats;
- guides and tutorials (some in streaming video) designed to enhance competencies in library research,

observation and note-taking, basic conceptualization and composition, quantitative data analysis, and the use of MicroCase;

- expanded mechanisms of communication, including an automated mass-mailing system, an online newsletter, and a Web page that offers students standard departmental information and alerts them to research opportunities.

Throughout the process, we have made transparency and open access our defining principles. Transparency requires full disclosure of what instructors do in their classes—through both [course Web sites](#) and extensive discussions among the faculty. This policy has resulted in faculty members agreeing to standardize the conceptual and technical vocabulary used across courses, particularly in discussions of research methods; the statistical and data analysis software used in the undergraduate curriculum; and standards for data presentation and analysis. As for open access, we have maintained it whenever possible, limiting the use of course management systems ([WebCT](#) in our case) and other restricted sites to only those functions that require special server software or password protection. This decision stands in stark contrast to Chou and Tsai's belief that teachers and curriculum designers should "develop a screen mechanism to block non-target users" (2002, 625). In the spirit of the Internet as a gift economy, most of the resources that we have created are available to all.

Common Expectations and Standards

Students sometimes claim that faculty members are not consistent in their expectations. To minimize the possibility of that being true, our departmental Web site outlines universal standards on issues like [plagiarism](#), [reference citation](#), and [writing in the discipline](#). The plagiarism page warrants special attention, as students often fail to realize that plagiarism is a university offense, that Internet plagiarism can be detected and documented easily, and that anyone who enables plagiarism by another is considered equally culpable. We emphasize these facts and provide links to detailed discussions of how to avoid more subtle and sometimes unintentional plagiarism through proper citation. It is our hope that these resources and others in the Web-enhanced curriculum provide a level of support for effective learning that will make plagiarism less tempting.

The Web-based resources reflect a gradual process of aligning and articulating departmental standards. Some, like the format for data presentation, were quickly agreed upon; others, like common language across the fields of sociology, anthropology, and criminal justice, took longer to negotiate for obvious reasons. Disciplinary loyalties held up the adoption of a single citation style until 2004. Open discussion and debate may have led to frustration at times, but overall, the process yielded a more focused and integrated curriculum and reinforced the sense of camaraderie among colleagues.

Shared Guides and Streaming Tutorials

One distinctive part of our project is the use of streaming video to support curricular skill objectives. As detailed on the [Streaming Audio and Video Project](#) page, we have progressed from digitizing and streaming pre-existing materials to documenting various university events online to producing unique instruction materials.

At first, we favored [RealNetworks](#) software that created streaming slideshows with low bandwidth requirements; the company no longer supports these programs. Regardless, broader student access to high bandwidth now makes it feasible to create and stream videos and [screen movies](#) with [Adobe Premiere](#), [Windows Media Encoder](#), and [Camtasia Studio](#). An ever-expanding list of our streaming tutorials is available on the [Online Research Tutorials](#) page. Some instructors have also made extensive use of digitized film clips, although for copyright reasons, many of them are housed behind WebCT password protection. Such clips can be called up at will in class and made available for subsequent student viewing on demand.

Our commitment to transparency and open access directly led to several advances in the streaming video project. For example, after viewing one colleague's assignment on taking proper field notes, we realized that it contained guidelines that other faculty members could use in their own ethnographic assignments. This led to the suggestion that we use video footage from the colleague's fieldwork in Ghana to teach basic observational and note-taking skills. The result is "Turning an Event into Fieldnotes: A Ghanaian Example," a streaming video with introductory and voiceover comments from anthropologist Cati Coe. Other projects also fulfill our mission of supporting research and data analysis skills. "Making Causal Arguments in Sociology and Criminology" reviews the criteria of causation and then explores the problem of spurious correlations. "Testing a Hypothesis Using MicroCase" walks introductory students through the processes of hypothesis creation, [operationalization](#), and testing. ([Exhibit 1](#) provides access to all three videos, and the [MicroCase Resources](#) page includes links to additional tutorials and faculty assignments.)

The [Library Resources Online](#) page, though less technologically advanced, is also fundamental to the skills we want to teach. We begin by comparing the quality of information available through bibliographic databases to that available through online search engines. Hyperlinked lists of databases and academic journals of particular disciplinary interest follow. We encourage students to use this page as their point of entry into the somewhat overwhelming array of online bibliographic resources at the official library [Web site](#). Two department members are using Camtasia Studio, which offers a range of editing capabilities and output file formats, to create tutorials on the use of online library resources; the tutorials will be available by fall 2004.

All of the guides available on the [Online Research Tutorials](#) page are intended to function as learning tools in lower-level courses and as support and review resources in upper-level courses. These guides are a permanent fixture on the department Web site; the fact that students can access them anytime, from anywhere, means that instructors spend less time reviewing basic concepts in class and more time advancing their students' knowledge.

Expanded Communication and Positive Recognition

The final facet of our technology project is expanded communication among students, faculty members, and staff. The department publishes an online [newsletter](#), supports an electronic [mass-mailing list](#), and regularly posts information on undergraduate [research opportunities](#) on the Web site. A box at the top of the department [homepage](#) provides news, announcements, and topical hotlinks, all of which are updated regularly. Student events such as the annual [undergraduate research poster session](#) are well-documented online. Our consistent aims are to make useful information immediately accessible, to encourage dialogue and feedback, and to highlight scholarly accomplishments as a means of motivating students and instructors alike.

Campus [server logs](#) document robust use of the department Web site: More than 87,000 visits and almost 540,000 total hits were recorded from June 2003 to May 2004. In general, students give the department high marks for its use of technology, as reflected in the comments in [Exhibit 2](#). Positive student feedback has been not only rewarding to hear, but also useful in making our case to the university administration for additional resources. The same is true for other forms of recognition, including an article on the department in the American Sociological Association newsletter (Rich [2002](#)).

Conclusion

Admittedly, some features of our department have facilitated the collaboration and output described above. We are a relatively small (11 full-time faculty members) and congenial group. The technology pioneers in the department were tenured and thus could afford to invest time and energy in this enterprise and share their knowledge with younger instructors. The beginning of the project coincided with personnel changes in the administration that created a more supportive environment for teaching and technology initiatives. Finally, we received a steady stream of in-house grants to purchase the necessary hardware and software, and technical support in the early phase of the program was readily available.

It is difficult to isolate the impact of our technology applications on student learning and the achievement of curricular objectives. The data that I cite above are supportive, but largely circumstantial and anecdotal. Nonetheless, we take pride in having received the Rutgers University [Award for Programmatic Excellence in Undergraduate Education](#) in 2003. Our success suggests that the concept of a Web-enhanced curriculum has broad applicability and promise, with the potential to unite faculty members in a common set of teaching concerns and motivate students to produce better discipline-specific work. We offer our efforts as a possible model and point of departure for others interested in scaling Web enhancements from the course to the curricular level.

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