



How Effective are Course Web Sites?

A recent survey evaluates student use of four Course Web Sites at Brown

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The Brown faculty is becoming increasingly more interested in adding web pages to their courses. However, such a project requires a significant commitment of time and effort. Both print and electronic resources are available for the stages of development and implementation. (See the Sheridan Center web page, <http://sheridan-center.stg.brown.edu/web_Resources.html>, for a short list.) However, a more difficult part of the process involves the initial planning stage, deciding among the complementary issues of: how the course web page will facilitate teaching goals and what information should be included on the page. This decision-making process could be made easier if instructors had a sense of the ways in which students use the Internet and their course web pages.

During spring semester 1999, members of the Sheridan Center staff (Hannelore Rodriguez-Farrar, Vicki S. McKenna, Mark A. Herlihy and M. Shane Heschel) conducted a research project to determine how students use a course web site and to evaluate what elements make a course web site an integral part of a successful learning experience.

We designed the project to query students from four courses which represented the four academic divisions within the University: Humanities, Social Sciences, Life Sciences, and Physical Sciences. All of the courses were at the introductory level and were chosen to involve as large a number of students as possible. The courses from the Life and Physical Sciences divisions were requirements for a majority of the students registered. For this reason, sophomores and juniors

were slightly over-represented in the sample population. Each professor was asked to grant permission for the class to be included in the survey.

The project was comprised of four surveys through the semester. Three of the surveys were sent directly to the students by e-mail, and their responses were returned by e-mail. The last survey was distributed to the students during a class meeting, and completed forms were collected at the door as the students left. We designed the surveys to gather information on student computer use as well as on their use of the specific course web page.

While this survey was certainly not exhaustive, we have developed some tentative conclusions and some working guidelines for designing a course web site which will facilitate student learning:

1. *Required Use:* Student responses to the survey revealed that a course web site is effective only if its use is required for successful completion of the course. Response rates in the four courses surveyed varied across the divisions. In the Humanities course the enrollment was 22 and the response rate was 25%. The Social Science course had an enrollment of 80 and the response rate was 20%. The enrollment in the Life Science course was 91 and the response rate was 40%. The Physical Science course had an enrollment of 230 students, in two sections, and the response rate was 32%. While there was some variation in response to each separate survey segment, in general the response rate was consistent across the four sections. Although the response rates may seem low to some, the average of 20-30% is generally considered good. What was most striking about the response rate was the degree to which it was related to required use. If the course web site was required for assignments and/or distribution of information, then the response was accordingly higher. Therefore, we conclude that an effective course web site must be a required part of the course. This conclusion is also supported by the pattern of usage of specific pages within the course web site itself.

2. *Computer Experience:* Students arrive at Brown having a high comfort level with many of the uses of a computer, and expand their abilities during their undergraduate careers. Every student who responded to the surveys used a word processing program. Over half of the students were familiar with spreadsheet programs. Use of the computer for statistical analysis or database management was much more limited and varied more dramatically among the four classes. Over 80% of them regularly use e-mail. This can be regular avenue of communication between teacher and student. However, if you intend to send messages to the entire class list, verify everyone's address at the beginning of the semester because some students continue to use addresses that

they had before coming to Brown. Also, notify students of your e-mail policy. They get a large volume of mail and make quick decisions about reading or ignoring a message.

3. *Student Expectations*: Students use computers with an ease that translates into a growing desire for course information to be available over the Internet. The most frequently used information on a course web site is the required information such as homework assignments or the schedule of readings. The most frequently requested information for a professor to add to the course web page are the lecture notes. The general pattern of usage across all of the courses surveyed demonstrates that the required information is the more frequently used, and the supplementary or enrichment material has a limited audience. Students are quickly frustrated when out dated information is found on the course web page.

4. *Internet Use*: Students use the computer to acquire information from the global electronic community. More than 90% of the survey respondents used the Internet for recreational web surfing. This behavior influences how students approach gaining information for academic use. More than 90% of them use the Internet to research assignments from their classes. They begin their searches primarily from the library web site or one of the standard search engines. Students use links on a course web page to start their research *only* when the links are very explicitly tied to the assignment. Regardless of whether your course has a web page, student use of the Internet for researching assignments has implications for the work that is submitted in your classes. The Reference staff at the University libraries has some strategies in this area that can be useful for both you and your students. (See related article, "Instructional Technology at Brown and University Library Resources.")

5. *Problems*: Problems associated with use of the Internet can be divided into two categories: access and instructions. A large majority of the students who responded to the survey have access from computers in their rooms and only use the machines in the public clusters for printing. The ease of finding a link to the course home page from other logical pages affects the students who are using the Internet during the shopping period. Once students are in a course, they understand about bookmarking a site address for easy, regular access. However, during "shopping", the initial link(s) to the site should be placed in a logical location, such as the BOCA listing of course web sites or on your department home page. Explicit instructions on the syllabus about using the course web site can avoid many problems which commonly arise. Most frequently, students have difficulty with the excessive download time for some pages and lack the software to view some specialized information formats. Students need information about which programs they must download from Brown's server. This issue can be addressed by clearly setting out the computing

requirements for the course web pages in the syllabus and providing information to the students on how to meet these requirements.

The "Teaching Tips" page in this issue of *The Teaching Exchange* sets out some of the resources we have identified for developing a course web site which will facilitate student learning. If you have any questions about the survey and our tentative conclusions, please contact the Center.