

THE TEACHING EXCHANGE

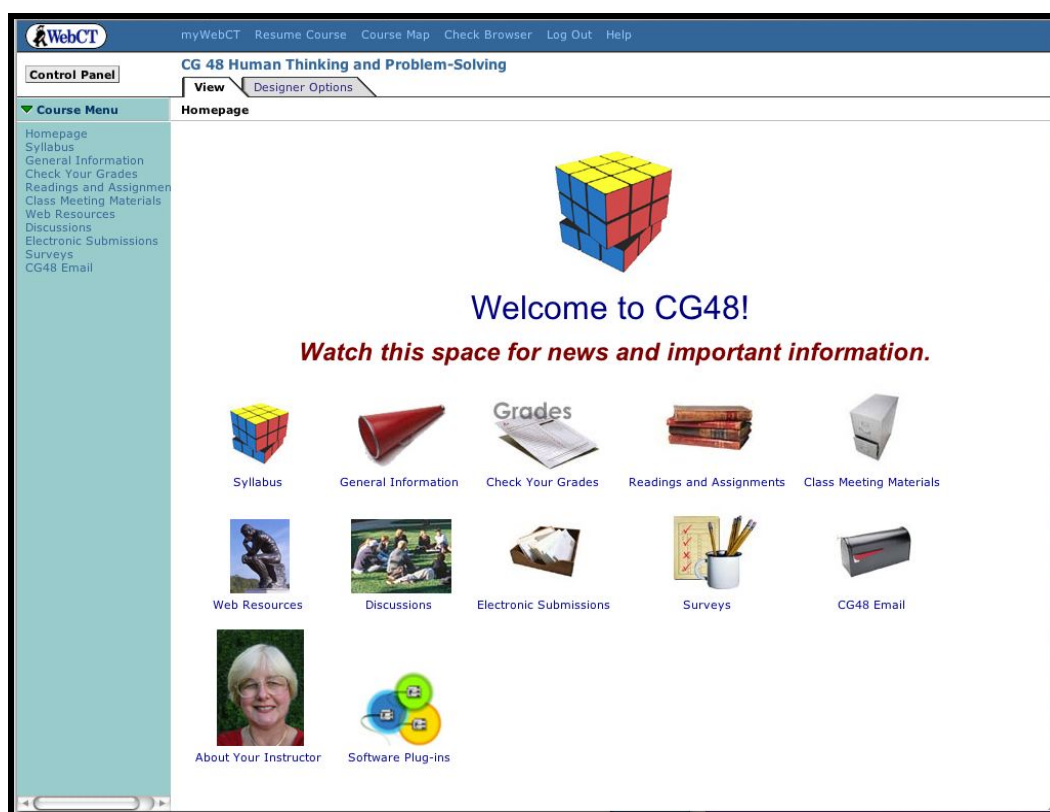
BROWN UNIVERSITY • VOLUME 10 / NUMBER 1 • SEPTEMBER 2005



Website Design ⇔ Course Design[©]

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A longer, more detailed version of this article, including references on web design and additional pictures from the CG48 WebCT website, can be found at: <http://cog.brown.edu/~spoehr/WebsiteDesignSite/designmain.htm>



A good website is neither just a “pretty face” on the front end of a course, nor merely a place to

dump the syllabus, lecture notes, and readings for interested students. While information dissemi-

nation is very important, a course’s website should also help students achieve the learning goals

the instructor defines for the course and should be designed with those goals in mind. In short, course design and website design are interdependent and mutually supportive elements of good teaching.

Because I use *WebCT* in every course I teach, the particular *WebCT* tools I use and the kinds of materials found within each area of the course website do change depending upon course goals and format. Nevertheless, in designing each website I try to use some basic principles of information organization and design in order to coordinate the website with the other elements of the course (*e.g.*, class activities, assignments, communication among students and with me) and to make it easy for students to use the technology-based tools they need.

One of the more successful course websites I have developed, a “*Best of WebCT*” award winner, was for a First-Year Seminar I taught in Fall, 2004 [“Human Thinking and Problem Solving” (CG48)]. It provides a good example of how website design can be used to enhance the overall student learning experience in a course.

Enhancing Communication.

The multiple tools and methods incorporated into the CG48 website support communication of various types:

- The space at the top of the homepage is reserved for “head-

lines” and important course information (*e.g.*, “Your short papers have been graded and are available for pickup in the Electronic Submissions area.”). I changed the headlines, their colors, and their sizes once or twice a week so that students would notice the information each time they logged on to the website.

- The *WebCT* Email and Discussions tools played a pivotal role in the course. I used email regularly to communicate with the whole class or individual students; before most class meetings, students were required to post in the Discussions area short “reading reactions” to the day’s assignment. I used these to spark discussion and to spot conceptual confusions that could be addressed in class.
- The *WebCT* Check Your Grades tool allowed students to keep up with how they were doing in class without having to ask me.
- “Electronic Submissions” allowed students to submit written assignments, for me to comment upon, grade, and return the assignments electronically. I lost no class discussion time to collecting or passing back papers unless there was something of general interest arising from a graded assignment that I wanted to discuss with the class.
- The “Surveys” portion of the website made use of *WebCT*’s survey tool. I used an initial survey at the beginning of the semester to learn about the stu-

dents’ backgrounds and reasons for taking the course. I also had them do three “Self-Assessments” over the course of the semester to help them reflect upon how they were doing in various aspects of the course and how they could do better. There were also two “Instructor’s Reality Checks” during the first half of the semester so that the students could give me anonymous feedback on matters of content and pacing.

- The “About Your Instructor” link on the homepage linked to my personal homepage. The students seemed to appreciate being able to know more about me, the courses I teach and the research I do.
- The “Software Plug-ins” link led directly to the CIS page listing the browser tools necessary to make *WebCT* work properly. This prevented problems students might otherwise have had using the site.

Reinforcing the Organization of the Course Material.

Because understanding the major questions and domains of study that underlie the course material was a major course objective, the course syllabus was organized into six major areas of study. These same six areas and their sub-points also provided the organizational framework for the material appearing in the “Readings and Assignments,” the “Class Meeting Materials,” and the “Web Resources” sections of

the website. So it was easy for students to find and see the relationships between different kinds of materials that all pertained to the subject area currently under study.

Harnessing the Power of the Web to Reinforce and Extend Course Content.

Two of the course objectives were to have students learn some of the methods cognitive scientists use to study how people think (including computer-based models) and to have students learn techniques for improving their own thinking, reasoning, and creative skills.

There are many websites developed by colleagues in my field at other institutions which supplement standard textbook and primary source readings on the topics covered in this course. Some of these websites are compilations of resources and readings on specific topics, while others are online “laboratories” through which students can experience what it is like to participate in a scientific experiment on thinking or reasoning. Still other websites provide online demonstrations or simulations of theories and key phenomena, and some give training on practical applications of thinking skills. Many of these websites address differences in student learning style by providing pictorial and/or auditory illustrations and

explanations of material covered in the course.

Because *Google*[™] searches of the web are likely to locate many websites about each of the topics covered in the course, and because such sites often contain erroneous or scientifically suspect information, I established a “Web Resources” section of the course website. Here I placed descriptive links to related web information, all organized in the same way as the other course materials. By taking the time to identify and link to useful information on the web, I headed-off many of the hassles that result when students naively use poor information sources from the unedited World-Wide Web.

Making the Website Organization and Design User-Friendly.

No matter how much interesting and useful information a course website contains, it will only be helpful to students if the information is organized in a way that helps them use it productively, and if it is accessible through intuitively obvious navigational tools. The *WebCT* system insures that course websites adhere to some of the basic principles of good web design:

- All of the pages within a single *WebCT* site will have a consistent “look and feel”: the same color scheme appears on each page, and the same fonts (including color and size) will be

used for similar types of headings and button names.

- The system provides a consistent set of navigational buttons in the same place on each page so that students can move efficiently through the site.
- Each page in the site will have a header or label so that students know where they are.
- When one creates a new page or section, *WebCT* automatically inserts navigation buttons so that there are no pages that are “unreachable” because the author forgot to insert link buttons.

WebCT also gives a designer freedom to place many different kinds of information on a single page and to organize web pages in different ways. Here are some of the design considerations that guided the construction of the CG48 website:

- **Iconicity.** Although a link name appears below each button on the Homepage, each button’s picture was chosen to visually represent the kind of information to which it linked. This is called “iconicity,” and it makes the page more visually interesting while providing additional cues to students about which button should be clicked to locate specific kinds of information. Some of the button pictures come from *WebCT*’s icon library, while I created others myself by re-sizing photos taken

from various non-copyrighted sources.

- **One-click Navigation.** The “Course Menu” option is employed so that no matter where students are within the website, they can go anywhere else with a single click.
- **Button Order and Course Menu Consistency.** The link buttons on the Homepage are arrayed roughly in descending order of their importance and frequency of use. This makes the site easier to use because it is generally not necessary to scroll down the screen window in order to find the button of interest. The “Check Your Grades” button migrated from the second row to the top over time because students used it more often at the end of the course. The links on the Course Menu are arranged in the same order as the buttons on the Homepage.
- **Décor and Screen Clutter.** The Rubik’s Cube was the course symbol, and it appears throughout the website as well as on the Syllabus, class handouts, and PowerPoint slides. This is the only purely decorative piece on the website. Multiple pictures on a screen that do not convey or link to necessary information (“screen clutter”) are visually distracting and make it harder for students to locate the material they need to use. I omitted background pictures because they can be a source of screen clutter.

- **Window Management.** Some buttons on the course’s pages move the user to another *WebCT* page within the same window, while others (*e.g.*, the Syllabus button) will open the linked material in a new window. Students often want to cross-reference or compare information from two different places in the website, and it is easiest to do that if the two sources appear simultaneously in two windows. Also, buttons which open ancillary information in a second, closeable window help students avoid “losing their place” within the website.
- **Task-Oriented Primary Organization.** Students generally enter a course website in order to accomplish one or more course-related tasks (*e.g.*, finding assigned reading, posting a discussion item, turning in an assignment, etc.). The set of buttons on the Homepage reflect the set of tasks students would be undertaking across the semester.
- **Secondary Organization According to Learning Goals.** Although the buttons on the Homepage organized information according to the tasks students needed to do, the specific content within many of the major informational areas of the website was grouped into the conceptual category system that formed the overall basis for the course. This categorical structure was used in the Syllabus, Readings and Assignments, Web Resources, and the Class Materials sections of the website (see ***Reinforcing the***

Organization of the Course Material above)

- **Liberal use of multiple links to the same information.** Course materials relevant to more than one course activity (*e.g.*, a website that was both a Web Resource and a Reading Assignment) show up as links in each relevant place. Care was taken to use the same label in each link location.

In spite of all the work and care that went into the CG48 course website, there is still plenty of room for improvement the next time the course is taught. But every change that is made will reflect the underlying principle that good website design and good course design go hand in hand.