

## **Power Pedagogy: Integrating Technology in the Classroom**

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### **Abstract**

Classroom instruction has come a long way within the past decade. Connectivity on the Internet through the use of WWW browsers is becoming commonplace in the classroom, at home, and in the office. In this paper, the author looks at the use of the Web to supplement traditional instruction. The focus is on the use of Web pages as an intranet teaching tool that establishes an extension of the regular classroom. This facilitates distribution of electronic supplements to students in a class, as well as the collection of survey responses to regular class assessment by the students. On the internet side, Web pages provide a medium for distance learning and an advertising tool to attract prospective students. Some pointers and suggestions from the author's experiences are also discussed.

### **1. Introduction**

One cannot help but stop and notice the amount of change that continues to occur in today's classroom instruction. It seems like only a few years ago that there was only one major classroom model. This was the traditional classroom model that required regular meeting between the instructor and the students at a prearranged site or room. Changes in technology are apparent not only in today's classroom. It is also impacting instructors, students, curriculum, and teaching methods.

What, then, is "power pedagogy"? The term refers to any set of instructional methods designed to increase faculty productivity and to accommodate more students with existing facilities. This is in line with the "do more with less" (Bothun, 1996) dilemma facing most colleges and universities. With these methods come a set of technology-based tools, hence the phrase in the title, "integrating technology in the classroom." But perhaps even more noticeable than the use of technology in the classroom is the use of technology to augment the traditional classroom. Most people refer to this extension of the classroom as "distance education" (Bothun, 1996 and Chizmar & Williams, 1996) or "virtual classrooms" (Juliano & Sheel, 1995). In this scenario, students are located in one place while their teacher(s), peers, or other instructional resources are located in another. A number of different technologies are involved and, depending on the arrangement, it can be useful in a wide range of learning situations. The most common tool used to implement this is the World Wide Web. In the next section, we briefly discuss the technology that makes the Web work and then follow it up with its impact on technology-based instruction.

## **2. Telecommunications and Network Technology**

Traditional classroom instruction through print media could have been considered power pedagogy even up to a few decades ago. As an extension to the Socratic method of teaching, print media facilitated the dissemination of information. The next step in enhancing the traditional classroom model was to include the use of audio technologies, such as radio, audio cassettes, and, of course, the telephone. However, with the exception of the telephone, audio-based distance learning is noninteractive. Now, when audio is combined with video, as in the case of television, the result can be similar to that of interpersonal instruction. However, again, there is no potential for interaction, unless additional technology is used. Despite this drawback, television-based distance education is one of the fastest-growing segments of the industry.

The next level of sophistication is to use satellite and cable. Satellite technology increases the instructional coverage area significantly (Wu, Miller, Pritchard, & Pickholtz, 1994). In a similar but smaller extent, the use of fiber-optic and coaxial cable to distribute video materials in cable television systems facilitate receiving programs from many sources, including satellite, for distribution to any subscriber. In this arrangement, the instructor conducts a class session "live" in front of a video camera. The course is then uplinked to a satellite, from which it is sent to the subscribing schools' satellite dishes. Such a course may then be sent out to additional learning sites over cable. This can further be improved through the support of two-way teleconferencing. Combining two-way audio and two-way video demands so much bandwidth to transmit. However, this also extends the traditional classroom by allowing students to ask questions or respond to the teacher in real time.

The use of network technology is another way to enhance traditional education. This encompasses the use of electronic-mail programs that allow users to send and receive information on a non-real-time basis and the use of the Internet to share and exchange information. The popularity of network technology stems from the fact that it is relatively easy to implement. All users need is a computer account, or a modem and a personal computer. This is fairly minimal equipment, considering that one can share and access assignments, critiques, and much more across the country and even around the world. This is precisely why connectivity on the Internet through the use of Web browsers is becoming commonplace in the classroom, at home, and in the office.

## **3. Power Pedagogy = Technology-Based Instruction**

Only recently has technology-based instruction been gaining recognition at Coastal Carolina University (CCU) in South Carolina. The campus network currently supports over 2,300 users. Web

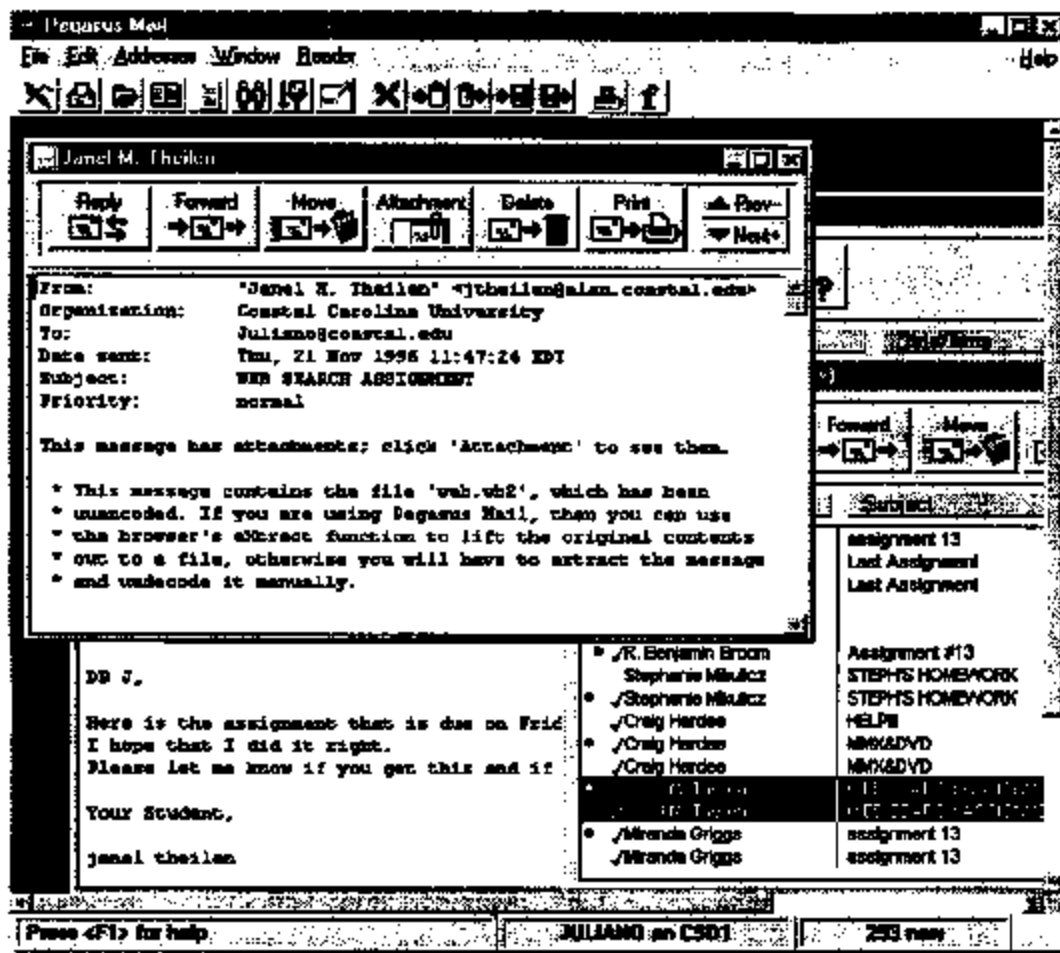


Figure 1 Submitting assignments as e-mail attachments in Pegasus Mail for Windows.

access was a service made available to students, faculty, and staff less than two years ago. With its introduction, new forms of curriculum delivery and student learning that centers on the use of technology are being considered. Here is a list, adopted from Chizmar & Williams (1996), indicating some of the learning activities possible when employing technology-based instruction:

- ◆ private newsgroups for each class
- ◆ electronic-mail collaboration between students, between students and faculty, and between faculty
- ◆ electronic mail submission and critique of work
- ◆ video- and/or teleconferencing
- ◆ electronic posting of grades, class handouts, notices, schedules, etc.
- ◆ electronic exhibit areas for class projects
- ◆ Internet-based lab work and research projects
- ◆ Internet-wide critique of work

How does CCU implement these activities in our classes? As of this writing private newsgroups are not supported, but individuals with University computing accounts can access Usenet newsgroups through a public news server. E-mail collaboration is facilitated by the Majordomo mailing list manager on a DEC Alpha minicomputer running Digital Unix. This mailing list manager allows

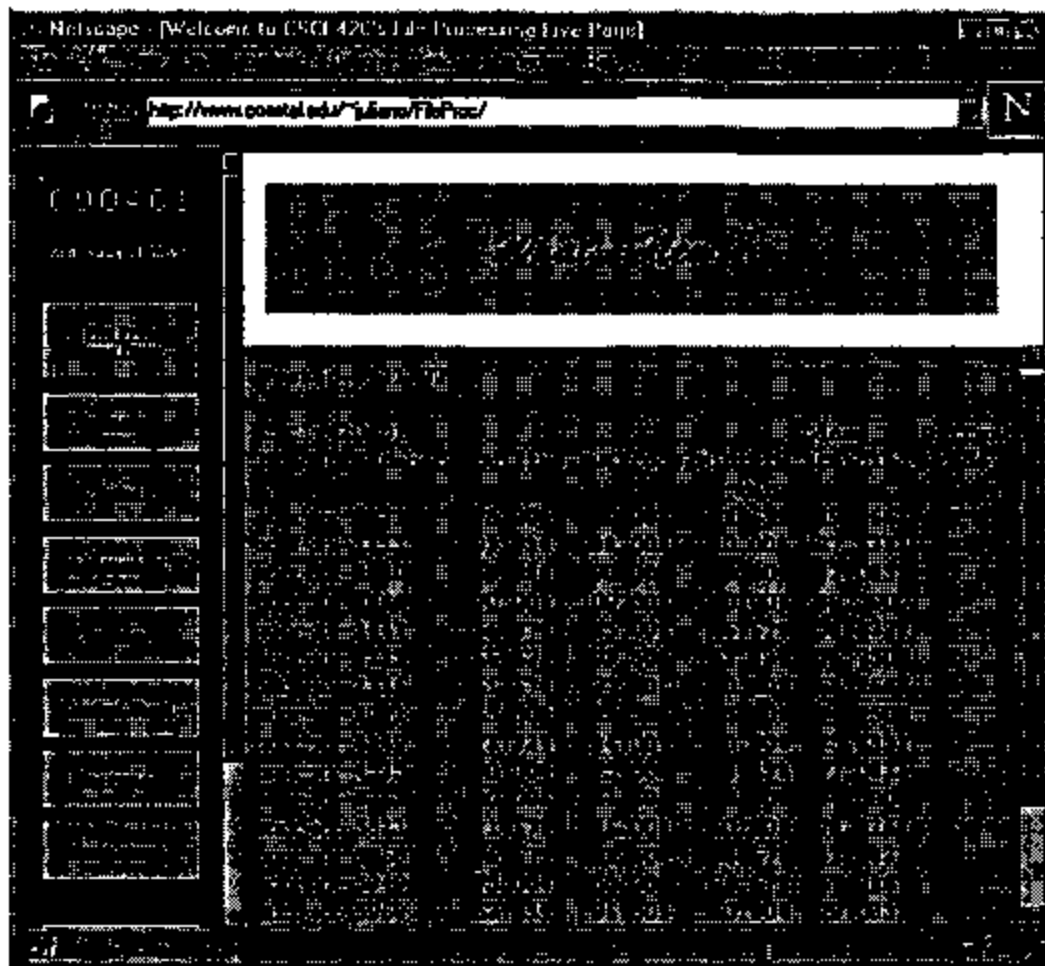


Figure 2 Using a Web page to post grades.

faculty to set up their class mailing lists so e-mail messages can be broadcast to all students registered in that class and the professor. The package was also used to set up mailing lists for specific majors, faculty in specific departments, as well as academic organizations and clubs. Several departments have also set up jobs mailing lists for their students. Major-specific job openings, whether local, regional, or national, are distributed through this medium. Most faculty use Pegasus Mail for Windows running on the University's Academic LAN when sharing (drafts of) documents that pertain to a project they are collaborating in, or even working documents for a University committee they are participating in.

E-mail is also used for the submission and critique of assignments and similar work. For example, in the Department of Computer Science, all courses that incorporate programming in the Unix environment require that these assignments be submitted via e-mail. In our Computer Applications class, students are sometimes asked to submit their wordprocessing or spreadsheet assignments as attachments in Pegasus (see Figure 1). Comments, criticisms and suggestions can then be sent back to the students via e-mail. CCU also offers some M.B.A. courses in its joint program with Winthrop University through distance learning (DL). A DL-enhanced classroom housed in the CCU campus is used. The facility supports two-way teleconferencing and has proven quite successful.

The last four items in the list above are best implemented as Web pages or components of Web pages. As an example, the author uses course-specific web pages to facilitate posting of grades (see