

USING THE WEB IN THE CLASSROOM

Pamela P. Peterson*

INTRODUCTION

The purpose of this paper is to convey how I use the Web in my classroom and what I learned along the way. I have used the Web as a supplement to my class since Fall term, 1995 and have gained a great deal of experience since then in both Web-assisted and on-line instruction. This paper is organized in the following way. In Section 1 I describe the courses I teach and how I came to use the web in my courses. I detail several innovations in the site in Section 2. I offer ideas on future plans in using the Web in my classroom in Section 3. In Section 4 I make a comparison of my experience of teaching an on-line course with a Web-assisted course. I provide summary remarks in Section 6.

BACKGROUND

I teach Finance in the College of Business at Florida State University. I have been at FSU since 1981 and have taught several different courses, but my teaching consists primarily of an undergraduate course in financial management, FIN3403, and a doctoral seminar in empirical research, FIN6842. I have been using Web-based teaching materials for both courses, which are located at <http://garnet.acns.fsu.edu/~ppeters>.

My research is primarily empirical in nature, with an emphasis in applications to corporate finance issues. The combination of the doctoral seminar and research has required me to keep up my computer skills, especially in FORTRAN programming and operating systems, first with a terminal and later through a personal computer. I have worked with different main frame and mini-computers and with different operating systems. I shared programs with students and colleagues before the arrival of the first browser and used e-mail long before it was called e-mail. This background has prepared me for Web applications and the changing world of Web development.

I first used the Web in the FIN3403 course during the Fall of 1995, but this was quite limited. In this first term, I put a few lectures on the Web in the event that I was not able to attend class (because of a bad back). As it turns out, I did not miss any classes, but a few students took a look at the lectures and expressed an interest in more material available through the Web. And so it began.

In the following semester, I put the basics up on a course web site: syllabus, schedule, and lecture outlines. During the term, several students suggested that I put the problems that I used in class (using overheads) on the web because it was sometimes difficult for them to write down everything. So, up go the problems. Then, of course, the solutions shortly followed. Then came the additional problem sets. Then came the exam solutions. The result of this semester's efforts was a structure for the material that consists:

- Syllabus and schedule
- Lecture outlines
- In-class material
- Practice problems
- Exam material

The result of these efforts is a student-driven web-site, <http://garnet.acns.fsu.edu/~ppeters/fin3403>. And while I do not advocate that students determine a course's content or performance measurement, I do advocate letting the students help determine ancillary materials. All my teaching experience would not have told me that students would be doing capital budgeting problem sets on a Friday night, but some actually do. An unexpected result of responding

*Florida State University

to student suggestions has been that my students have come to expect that I can put anything up on the Web and that I can do it instantaneously. It does take time and effort to do this, but the last two years have told me that it is worthwhile – at least for my students.

After some success in using Web-based material for my undergraduate course, I also put up a site for my doctoral course, including computer-based exercise sets. The attraction of using the Web for the doctoral seminar is that the readings list is dynamic – I can add readings throughout the term as they are published, resulting in an up-to-date list.

All of my course material is freely available to the world.¹ I sometimes joke that I use the Gates strategy of development and marketing, but seriously I recognize that I am a teacher and if I wind up teaching beyond my classroom then I am doing my job. I regularly get e-mail from students all over the globe who used my notes to pass their test at another university. I think that it is great that I am teaching so many students because that's my job. It may seem idealistically naive, but I have published a textbook and yet get a greater satisfaction out of my efforts in teaching on the Web than through print.

I should note that it has not always been smooth-running. My first web pages had too many graphics. I once chose a background that I thought looked great, but turned out to look awful on American On-Line (AOL). I sometimes miss a “/” or a bracket in my HTML code, which throws the rest of the web page into chaos. I used HTML table commands before AOL could handle tables.² But I learn my lessons and continue onward.

Along with using Web-based material, I also use e-mail extensively in my course. I check e-mail throughout each day, including weekends (but I rarely get e-mail during football games). The first time that I encouraged e-mail communication, only a few students took me up on it. Over the past two years, however, the students have become so comfortable with e-mail that even I receive questions over spring break.

INNOVATIONS

What I have done differently than other sites has not been in the area of how the material is presented or how the site is structured. I am sure that there are better looking and more organized sites. Most of my innovation has been in the context of communicating with students. Probably the one innovation that has become indispensable is *Course Communications* (<http://garnet.acns.fsu.edu/~ppeters/fin3403/commun.html>). This file is one of the most popular aspects of the course site. This file is updated for each class period, detailing what I am lecturing on that day, as well as pointing to the location of the pertinent lecture notes and problems. This avoids that question I used to hear often: “I missed class today. Did I miss anything important?” I have also found *Course Communications* to be useful in communicating occasional information, such as the location of a help session.

Another innovation is on-line office hours. I found that I get the most questions, not surprisingly, the night before a test. What I established two years ago was on-line office hours the night before each test; I promise to be on-line from, say, 8-10 p.m. the night before a test and be prepared to answer any or all questions regarding the next day's exam. If a question is asked (and answered) that may benefit all students, I forward the question and response to the class mailing list. I get a lot of e-mail traffic from students the night before a test, typically one e-mail per five students enrolled.

It seems an appropriate situation to include a chat room or a similar device to permit students to interact with one another (and myself). I established such a chat room, which enabled interactive chat and the posting of questions and responses. What I learned is that my students did not use this device. The reason may be that these students like to work in small groups or by themselves and do not want or seek out help from the class as a whole.

Still another useful aspect of the FIN3403 site is the use of a survey (<http://garnet.acns.fsu.edu/~ppeters/fin3403/survey.html>). I keep a survey web page that students are welcome to complete at any time to let me know about the different web-based material.³ Out of 220 students last spring term, for example, I received over 180 survey responses during the semester.

A recent change involves posting Microsoft PowerPoint lecture slides, in addition to the lecture outlines, linked to the *Course Communications* page. This is new because we recently enhanced the lecture hall with a computer capable of handling PowerPoint.⁴ My concern was that, even though the PowerPoint slides represent highlights of the lecture – primarily used to guide us through the lecture and provide some illustrations – students would likely want to have access to this material. Because of the ease of exporting PowerPoint to HTML, this seems like a little effort that may benefit the student. However, because this is a new addition to the site, I do not yet have student feedback on its usefulness.

FUTURE PLANS

The temptation is to add more bells and whistles to the web site, but I think that there is a point at which there are diminishing returns to web-based material and that technology may actually get in the way. A few items on my wish-list of changes to my Web-based material include:

- Java or Java Script applets for financial calculations. I have experimented with a few this term, but would like to expand this.
- Add video and audio components to lectures notes. It would be great to be able to offer additional assistance for those students in need on certain topics (for example concept review).
- Allow student-created material. I would like to provide a vehicle for students to pose problems and/or solutions.

The toughest part, at this point, is determining the value-added of any additional material. Any changes that I make in the future other than updating of the content will be small and evaluated (with student input) at each step.

ON-LINE COURSE VS WEB-ASSISTED COURSE

I recently completed teaching a 10-week on-line course in financial planning through FSU's Center for Professional Development. This course is designed for students interested in satisfying the educational requirements to sit for the Certified Financial Planning (CFP) exam. There were twenty-seven students enrolled in the course from locations ranging from California to Maryland.⁵ This was an interesting, yet frustrating experience. As an instructor, I had total control over how the material was organized and presented. As an instructor, I had no control over access to the site.

I used what I learned from my Web-assisted course and embellished – trying to anticipate the students' needs. What was different from my Web-assisted course is that the lectures are not merely outlines, but are self-contained presentations on the material, with examples, definitions, and illustrations. I tried to envision what I would do in the traditional classroom, and make sure that that information was conveyed to the student in the Web pages. I do have to admit not being 100% on target. There are a few topics in which I had to add material during the term and there are a few areas in which I would add additional problem sets in the future. Another difference is that students in the on-line course rarely used the material during the workday because most had full-time jobs. I noticed that most of the e-mail was sent on weekends and during the wee-hours of the morning (for example, 3:00 a.m.).⁶

There is a steep learning curve to conducting an on-line course, for everyone concerned.⁷ The first time for any organization is trying. Many of the participants had never used the Internet before and required answers to such questions as "What is a URL?" and "What is a link? ". In addition, there were numerous server and security issues. There were times when none of the paid participants could access the material. There were times that the whole world could access the site. When the server went down, the students turned to me to resolve this, even though we had told them that I could do nothing about the server. This was very frustrating because most of my time was devoted to dealing with non-finance issues, unlike my experience with the Web-assisted course material.

However, overall I think that it was a rewarding experience for the participants, CPD, and myself. We learned that some things worked very well and that others did not. We learned the time-demands of an on-line course, which are similar in total to those of a traditional course, yet proportionately more is devoted to preparation and development of the course materials in the on-line course.

SUMMARY REMARKS

The Web offers an opportunity to enhance our course material with tailored, low-cost ancillaries. Though I advocate the use the Web-based material in the course that I teach, this does not, however, mean that Web-based content is suitable to every course and instructor. In deciding whether to use Web-based material, there are several considerations. Most importantly, the material must mesh well with the instructor's style of teaching. I am the type of teacher who brings material to class so that students see a bit of the real world of finance (e.g., annual reports). I also post information and comics outside of my office. The Web-based material that I use is simply an extension of this and is in keeping with this style. But this is not everyone's style.

Another consideration is the time it takes to create and maintain the Web site. There are computer programs that make creating a Web page much easier, yet this is still a time-consuming process.⁸ Aside from creating the site, it is

time-consuming to update the site to make sure that it does not get stale. This is especially true in finance, an area whose content changes everyday. And managing the pages – that tend to grow in number through time – is a challenge. My course site has hundreds of web pages that are interconnected and it takes time to manage all of these.

Still another consideration is whether you are ready to give away creative content. Though there may be ways to secure a site that allows only certain individuals to view the site, it is still too easy for any person with legitimate access to simply copy and post any of the material from your secured site or give away the password. I have taken the position that anything I put up on the Web is available to the world. If I do not want the world to see it, I simply do not put it on the Web.

So where do you start? I recommend a simple set of steps to use to get going in this process, listed in Table 1. Probably the best way to really get started is to look at what is out there already. Look at what colleagues at other schools and in other disciplines have on the Web. You can start your search of these other sites by using the directories, such as the extensive listing of finance faculty web sites maintained by Ohio State University's Department of Finance (<http://www.cob.ohio-state.edu/~fin/findir/>).

The Web offers such great potential for education, yet learning the tools to effectively use the Web takes time and effort. Whether this effort is worthwhile in the context of your teaching is an individual assessment. My experience has shown me that the efforts are worthwhile in terms of students' learning and enjoying finance.

TABLE 1
Recommended Process for Beginning Web-Based Material

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| <p>Step 1: Define the problem</p> <ul style="list-style-type: none"> • Define the goals of the site • Identify the needs of the user | <p>Step 3: Organize the information</p> <ul style="list-style-type: none"> • Develop the site architecture • Organize the files in a logical manner |
| <p>Step 2: Know the user</p> <ul style="list-style-type: none"> • Understand the user's knowledge of computers • Understand how the user interfaces with the Web | <p>Step 4: Build the site</p> <ul style="list-style-type: none"> • Do it • Maintain it |

For more information on getting started, see <http://garnet.acns.fsu.edu/~ppeters/webwork/teach.html>

ENDNOTES

1. There are a few things to consider if you install security measures. Other than the obvious problems of maintaining the code to secure the site, you risk shutting out your own students if there are glitches. Further, if you use a simple measure, such as a password, how long do you think that it will take for the password to be posted by someone? Besides, if I put commercial note-taking services or fraternity files out of business, it would not be a great loss.
2. I still try new things, but I wait a bit now to make sure that most folks' browsers can handle them.
3. If a student wants to remain anonymous, however, they need to print the survey and slip it under my office door.
4. The prior computer was a 286 with a frayed plug.
5. The class consisted of persons working full-time, primarily in the financial industry and most with a four-year university degree. Many universities are pursuing distance learning strategies using the Web. And while I believe that there is a lot of potential for using the Web for learning, I think that this type of learning is best suited for the mature or continuing education student. I do not believe that the typical 20-year old university student is ready to learn a subject on their own through the Web.
6. Though I occasionally receive e-mails at unusual times of the day from my traditional class students, most of their e-mail is concentrated during the Noon-9p.m. period.
7. As an example, the person handling registration never thought to get the participants' e-mail addresses, so each had to be called for the address before the start of the course.
8. I write all my own HTML code for the pages, with the exception of a few that are translated from Microsoft WORD. I have found this to be less time consuming in the long-run because I can edit the pages directly on the server.