Ripped Apart at the Seams: Re-Tailoring the Computer Training Program at Brown University

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ABSTRACT
In this paper, we describe the process we went through to redesign our training program in order to make it more targeted to the individual user, more responsive to a constantly changing environment, and technologically more sophisticated. We also outline a number of the products that came out of this process, including the following: on-line registration, self-evaluation tool, post-course quizzes.

Keywords
Computer Training, User Support, On-line Content Design, Job Specific Training, Course Follow-up

1. INTRODUCTION
As the number of technology users on campus increases and the ways people use technology broadens, it becomes even more critical that University training departments continually re-evaluate their approach to, and understanding of, their target community and to acknowledge and address the diversity of that group. The Computer Education department at Brown had been focused on providing training on the campus-wide, officially supported applications. We realized, however, that this traditional, "one size fits all" training program had become outdated. While the technology was becoming increasingly specialized and task-specific, our training program was not. Consequently, we redesigned our training program by identifying key user groups within the community and recognizing that, even though these groups may be using the same computer applications, their training needs are significantly different. We are now better able to identify and address user's specific needs in terms of content, focus, approach, and timing.

In the course of this redesign, we realized that, despite being a technology department, we were still using the technology available to us in a fairly primitive way. Specifically, our use of the web was confined to having links to static information such as documentation, course descriptions, and current class schedules and a registration page. With increased interactivity as our goal, we analyzed everything from course registration to post-course follow-up to see what components could be delivered more effectively over the Web. We were able to design (without a lot of experience or resources) an interactive, content-rich, user-centered web site. Projects included designing an online registration system that includes a self-evaluation tool, online training applets, an interactive course catalogue, quizzes and course evaluations, and a tip and trick mailing list. These projects will be outlined in the discussion that follows. As a result of these changes, we are reaching a broader segment of the Brown community and have increased the effectiveness of and user satisfaction with our program.

2. ISSUE AND PROBLEMS
First, a little information about ourselves: Brown University provides free training to all students, staff, and faculty. At Brown, the undergraduate population is 5,600; graduate student population is 1,600. There are 970 faculty and 2,100 staff. The Computer Education staff currently consists of a Training Coordinator, a User Education Specialist, a Faculty Liaison, and a Staff Assistant who handles the course registrations. Other members within our larger work group, User Services, also serve as trainers upon request.

Over the past year, we had over 1,800 course registrations from staff and an additional 150 from faculty. In addition, over 225 faculty attended faculty-specific workshops on topics such as PowerPoint Basics, Introduction to Web Publishing and Introduction to Excel. Overall, 250 courses, workshops, or lectures were offered.

Review and analysis of our existing training program began in Spring 1999. We found that getting people to attend classes was not a problem. Classes, for the most part, were very popular if attendance alone was taken as a gauge. What made us suspicious of their effectiveness, however, was that while there had been developments in the field of Adult Education and certainly enormous changes in the field of technology, our training program kept offering the same type of classes and the same topics in the same format. Classes were generally three hours long on topics such as Word Basics and Excel Basics. The focus was entirely on giving an introduction to the commonly used computer applications at Brown. Very little instruction was given at the intermediate level and none at an advanced level. This review led us to believe that, while the skill level of our user population was moving forward, our training program was not keeping up in

terms of more advanced content. We also discovered that many people attended the same class multiple times. We concluded that either our classes were too long, with so many topics covered as to prevent retention of course material, or that lacking more advanced course offerings, people attended the same class more than once, hoping to extract a few additional skills with each session.

Additionally, our out-of-class administrative support systems, such as course registration and post-course follow-up, were not making the best use of the available technology. Course registration was done either by phone or by filling out a form on the web that generated email that was then copied and pasted into a database. Our post-class follow-up consisted only of handing out the traditional smile sheets at the end of class and having the instructor review them. We found that these evaluations did not provide us with a real sense of whether those who attended class were able to apply what they learned to their actual work situations. We wanted a more systematic way of polling the students 1–2 weeks after the class met to get their feedback on the effectiveness of the course material in helping them do their jobs more efficiently.

One class on web publishing was offered in an on-line format; however, it was extremely time and labor intensive on the part of the instructor. Other than that class, there were no on-line training/review options for people who could not attend class or simply needed to brush up on what they had previously learned.

3. PROCESS

Our first step after completing our self-analysis of the current training program was to hold a series of focus groups to which staff and faculty were invited. These were held in the summer, which made it unfeasible to invite students to attend. The feedback from these four groups confirmed to a great degree what our own analysis had indicated: the "cookie cutter" approach to delivering training was outdated and no longer effective in helping our users attain the skills they needed. Some frustrations that were voiced included the following:

"I work in a small academic department, which makes it impossible for me to leave to attend a 3-hour class."

"I have attended many of the training workshops in the past. I get so tired of the instructor endlessly pulling down menus from an application and demonstrating various features that I will never remember how to use when I get back to my desk."

"The classes should be run more frequently. It seems that whenever my schedule would allow me to take a class, the semester of computer training has just ended or the classes have already filled."

We also polled our instructors and found that one of their biggest frustrations in the classroom was dealing with students who did not have the appropriate skills to assimilate the material that was being covered. Additionally, the problem of how to handle students who clearly had already mastered the bulk of the course material but were only there in the hope of "learning one or two new things" was mentioned.

Our number one priority was to eliminate the "one size fits all" methodology of our course offerings. Instead, our goal was to offer "tailor-made" training, instead of "ready-to-wear." To that end, we wanted to divide up our participants into more manageable groups. Fortunately, that task was relatively easy since we had three identifiable groups on campus, all with different needs and demands (students, staff, and faculty).

Beyond the initial dividing up into students, staff, and faculty, we considered trying to divide Staff members even further according to job descriptions. We had some informational meetings with the Human Resources Department in order to determine whether it would be feasible to identify groups of people across the University who shared similar job responsibilities or had to routinely perform similar tasks. We learned that this approach was not feasible primarily because of the way jobs are classified at Brown, but also because this way of grouping training participants did not address the primary concern of both our instructors and those they instructed: that classes were populated with people of different skill levels. Different skill levels in a class made both teaching and learning more difficult. In fact, we have found that grouping people together in terms of the jobs they do exacerbated this problem. We have long offered Departmental Training for any Department who had six or more people. These training sessions are among the most difficult to teach because even though all the participants have similar work experiences, the skill level is so varied as to make the group all but unmanageable. Because of these considerations, we decided that we needed to focus our attention on developing a way to help those registering for classes to be able to better select sessions that were appropriate for their skill level and work on the applicability issues at a later time during the training process.

So in order to meet our primary objective, eliminating the "one size fits all" framework, we outlined the following major goals:

- Develop training programs targeted at the three identified groups: faculty, students, and staff
- Develop more job/task specific training
- Make it easier for students to choose appropriate classes
- Provide more effective and dynamic course follow-up
- Create a community of learners
- Make better use of the web for administrative and educational tasks

4. MAJOR GOALS

4.1 Develop training programs targeted at the three identified groups: faculty, students, and staff

4.1.1 Students

Previously, we offered a series of classes on using Brown-specific computer applications, such as "Using E-mail at Brown" or "Connecting to the Brown Network via Modem." Whereas these classes were very popular two years ago, attendance dropped off severely in the fall semester of 1999. Our supposition is that more students arrive on campus having already mastered some basic computer skills such as using email and browsing the Internet. Therefore, the classes we offered had very limited appeal except to the truly novice user. We decided to take a different approach in spring 2000 and offered a series of four workshops targeted towards professional development. These were offered in the early evening and were very well attended. Over 125 undergraduates attended these four sessions.

Based on the success of these workshops, we have expanded our catalog of student workshops and will be offering a very full schedule of classes in the first few weeks of the fall semester and periodically throughout the rest of the year. We also conducted an on-line survey of students to get their feedback on the types of courses they would like offered and when they would be most likely to attend these courses. We received over 250 responses and from those responses have designed a catalog of courses that will be offered at times convenient for students to attend. This approach to student training will also help to fulfill the goal that has been identified by the Dean of the College of increasing computer literacy in the undergraduate population.

In addition to the classroom sessions, we have designed a series of on-line training modules to help students whose schedules don't allow them to attend traditional classes learn new computer skills over the web whenever or wherever they want. These modules were developed using a freely distributed, easy-to-use program called LeeLou (available at www.quarbon.com) and will be introduced in fall 2000.

4.1.2 Faculty

Previously, there was little offered in the way of faculty-specific computer classes. The belief that "faculty don't come to training" had become ingrained and, as a result, this area of our user population had been overlooked. Faculty were included in the course announcement mailing and a handful did attend the traditional 3-hour classes. But, again, our feeling was that the timing and content of these classes were not suited for faculty.

We knew that some faculty were interested in incorporating technology into their classroom delivery, particularly with course web pages. We developed a series of workshops that were marketed directly to faculty and graduate teaching assistants and offered them in the break just before spring semester started. Attendance greatly exceeded our expectations. Sessions on PowerPoint and using Excel to manage course grades were very popular, as were the sessions on creating web pages.

4.1.3 Staff

Offering specific series of classes to students and faculty enabled us to develop classes for the general course schedule that were tailored to the needs of the staff. We offered several "series" of classes. One on using the desktop publishing features of Word was very popular, as was a series of short sessions on using various features of Excel. Instead of offering classes three times a year (fall, spring, and summer), leaving large gaps in between sessions, we schedule shorter, more frequent sessions and routinely schedule multiple offerings of the more popular classes.

4.2 Develop more job/task specific training

Our re-design of training classes looked at both form and content. Classes are now one and a half hours long (as opposed to three hours), with an occasional class being scheduled for two hours. Feedback from both instructors and participants has been almost uniformly positive. Some of the comments made by participants:

"Prefer the shorter format. You can gain more from focusing on topics at specific skill level, instead of spending time reviewing things you may have already learned."

"I prefer the shorter classes to the 3-hour classes. They contained too much information at once and took up a large portion of the work day."

"I'm much more likely to sign up for a 1.5 hour class than for a 3 hour one."

"3 hours is too long to concentrate."

"I love the shorter format. I can retain so much, and then it gets overwhelming."

In terms of content, we developed classes that only teach a few features of an application but teach those features in depth with ample time to practice and master those skills. Instead of focusing on teaching a software program comprehensively, we focus on what the applications are good at doing and design and market classes centered around those tasks. Examples include the following: Creating Form Letters and Labels in FileMaker Pro; Using Netscape Composer to Create and Edit Web Pages; Managing your Email using Mailboxes, Filters and Stationary; Automating Data Entry in Excel; Creating Newsletters and Brochures; Keeping a Gradebook in Excel. No longer do people need to come and sit for three hours in the hopes of learning "one or two new things."

That being said, we have not abandoned the idea that it is valuable to learn a program in depth. Instead of offering three hour long classes, however, we offer a series of classes on a specific application. Participants can choose to come to all in a series or only one or two. An example would be the series on the desktop publishing capabilities of Word that involved eight separate one and a half hour classes with title such as "Taming Tabs and Indents" and "Formatting Long Documents."

4.3 Make it easier for participants to choose appropriate classes

In selecting which courses to take, two factors come into play: people need to find a class that is appropriate for their skill level and that is relevant to their job. While we chose to devote the bulk of our time to the former issue, which is discussed below, we did not ignore the latter. Creating course titles that relate to a specific job task (e.g., "Creating Newsletters and Brochures in Word") and making very detailed course descriptions available on the web make it easier for students to make good decisions in terms of which class is most applicable to them.

We found it critical, however, to develop a way of steering students to the appropriate classes so that their skill level matched what was required to learn the course material. A major improvement was to add to the registration process a self-evaluation tool. For this tool, we are heavily indebted to M.I.T's IS Computer Training Program. We modeled our Self-Assessment Tools after their own, which is found at: http://web.mit.edu/is/training/assess/index.html. The idea is to have training participants, as part of the course registration process, answer a series of questions about the particular program that the class will use. Based on their responses, they are asked to evaluate whether the class they are signing up for is appropriate, whether because they lack certain skills or because they have already mastered the content that will be covered. Their responses are also sent to us via e-mail, so that we can review them prior to the class, and they become part of the participant's registration record.

The addition of the self-evaluation tools to the registration process has provided a number of benefits. We now have the opportunity of "counseling" students about the courses they have selected, sometimes recommending additional training before taking the class in question. Sometimes we contact those people ourselves who we feel are signed up for an inappropriate class. We never use the results to prevent people from coming to a specific class. People are grateful to be given further information that helps them decide whether or not the class would be worth their time. Also, the overall results give us information about what kind of skill sets people on campus have, which in turn aids course development. For instance, we discovered after reviewing the self-assessment tool results of people registering for Excel Basics that most people had many of the skills being taught in the class with the exception of using formulas and functions. We designed a class that focused exclusively on formulas and functions, and it quickly became one of our most popular classes. Finally, instructors review the results before class, giving them in advance some insight into the skill level and variety of the group.

4.4 Course follow–up

In the past, we provided no course follow-up other than passing out evaluation sheets at the end of class. These evaluations traditionally do little more than point out egregious problems with the instructor or equipment in the classroom. For the most part, participants think "everything was fine," "the items covered in class were appropriate" and "the instructor was great." While we want participants to have a positive in-class experience, the goal is that they take what they learned in class and use it in their professional lives. We considered a number of ways to survey the past participants to see if and how they were applying what they learned. The familiar problems with surveys confronted us: a low response rate and their intrusive nature. We wanted to provide some incentive for people to fill out a survey, something of benefit to them. What we came up with was post-course quizzes.

The goal of the post-course quiz is to provide reinforcement for what was taught in class by having the students answer a set of multiple-choice questions. The quiz is short with a maximum of 10 questions being asked. After taking the quiz, students are asked to fill out a post-course questionnaire, which asks them if and how they have been able to apply what they learned in class on the job.

The quizzes are designed to be non-threatening (quiz results are anonymous) and interactive. The student finds out immediately how they scored. We can view the results of the quiz (without a user's name attached to the answers) to gauge how effectively students retained what was covered in class.

Our plan is to have quizzes available for all our courses, with students being asked to take them 1–2 weeks after the class meets. We are in the early stages of this initiative, having just sent out a first batch of quizzes to students who attended classes this summer. We are still not getting the desired rate of response. People take the quizzes but don't fill out the questionnaire. We are looking for ways to motivate the students to complete the questionnaire and will be marketing this new tool in our departmental newsletter in September. We are pleased, though, that people are getting the opportunity to test and strengthen their knowledge after they leave the classroom.

4.5 Community of Learners

In addition to more formal course follow-up, we felt that creating a community of learners on campus would foster continuous learning and would reinforce the skills and knowledge that people gained during the workshops. This goal, while vastly important particularly in a University environment, is somewhat amorphous. We have tried to achieve it in the following ways.

We have started a regular feature article in the monthly Computing and Information Services newsletter which showcases one staff or faculty member and how he or she has used the skills that they learned in class. The articles, which include a picture, have been very well received, as people tend to pay more attention to articles with a human interest side to them–a refreshing change from the technical focus of the bulk of the newsletter articles. People can nominate themselves to be a candidate for one of these articles by responding to the post-course evaluations.

Another approach is to promote use of existing newsgroups on specific computer applications by making them accessible through a link on our web page. The hope is that users can start to post and respond to queries about using a particular function or feature of an application, thereby fostering building a group of like users and increasing not only the community, but also self-sufficiency.

We also inaugurated a "Tips and Tricks" list. This is an e-mail list that people can sign up for in class or at our web site. Relevant tips are sent out bi-weekly along with announcements about course additions and changes.

4.6 Make better use of the web for administrative and educational tasks

Although we have undertaken many new initiatives over the course of the past year without increasing the number of staff working in our group, fortunately we were able to significantly reduce the amount of time spent on administrative tasks by putting the available technology to better use in this area. For example, we made course registration via the web mandatory and were able to have the data that students entered be imported automatically into the database that we use to track all our course and student data. Scripts built into the database automatically generate e-mail confirmations of course registrations, eliminating the need for a staff person to manually do this task.

We totally redesigned our Computer Education web site so that it is able to pull course descriptions and meeting times directly from a database and display it on the web. This had the additional benefit of allowing us to publish very brief "course announcements" of the latest course offerings on paper mailings and direct people to our web site for complete course descriptions.

Using this same technology of publishing data to the web and receiving the data from the web directly into a database, we are able to display the post-course quizzes and then view the results.

We are also using our web space to do more effective and interactive 'publicity.' We have posted student, staff, and faculty course catalogs that describe the kinds of classes that we offer and approximate schedules. As well, staff members can put their name on a 'request list' for a certain class, and if that list reaches a certain number, we schedule that class. Faculty can request the services that the classes teach (e.g., newsgroups) and follow links

to examples of how others have used those services in their classes. Students have access to the on-line learning module in case they do not find what they need on the class schedule. All of the groups can make suggestions and recommendations for future class topics.

5. Conclusion

The past year has been a time of tremendous change and growth for our computer training program. Having gone through a thorough self-analysis of our previous program, received input from our "customers," and coming up with a set of clearly articulated goals made the process a very focused one. Having several small successes early on only encouraged us to keep going and continue to try new initiatives. Over the next year, we will continue to refine our processes and look for new areas in which to strengthen and develop our programs for our diverse community of computer users at Brown.