DRAFT: Lazar, J. and Preece, J. (1999) Implementing Service Learning in an Online Communities Course. *14th Annual Conference, International Academy of Information Management.* Charlotte: NA. 22-27.

Implementing Service Learning in an Online Communities Course

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ABSTRACT

Service learning is when students take part in community service related to their academic study, in a way that the academic lessons are strengthened by the real-world experience. This paper describes the process of implementing service learning in an Information Systems course on Online Communities at the University of Maryland Baltimore County. In this paper, we present the background of the course topic, and discuss the structure needed to implement service learning. The actual community projects performed by students over a two-year period are described. We also present some of the lessons learned, to assist other instructors who are trying to implement service learning in an information systems course.

INTRODUCTION

Service learning is a growing trend in university classrooms. Service learning is a combination of community service and academic study, related in a way that they strengthen each other (Jacoby, 1996a). In service learning, the students perform community service that relates to their course topics. In addition to achieving the academic goals of the class, students have the experiences of political, social and ethical quandaries that they will face once they leave the university. At the same time, the students are able to help the community. This paper describes the process of implementing service learning in a graduate class on Online Communities.

SERVICE LEARNING

Service learning has been defined as when "...students engage in activities that address human and community needs together with structured opportunities intentionally designing to promote student learning and development" (Jacoby, 1996b, p.5). In service learning, the students perform community service that relates to their course topics. This community service takes the form of student projects that will be useful to someone in the general community (Shneiderman, 1998). The service helps students to better understand the course concepts and theories, because the students have "real-world" experiences, utilizing what they learn in class. Students will have stronger educational experiences if they solve real-world problems, such as creating a spreadsheet to track the finances of a church, or creating a database to track the budgets of a small town, or developing an online community to support senior citizens.

Many class projects involve case studies or simulations involving fictional companies or organizations. To create a database for a fictional company, students would face hypothetical problems, but a student would not have the experience of dealing with real people or the real-world problems of an organization. Projects that just lie on the shelf at the end of the semester are a wasted resource which can be put to better use in the community. In working on projects in the community, students may have the experiences of dealing with political, social, cultural, and ethical

issues. Such real world, open-ended challenges are rarely experienced in fictional problems. By gaining real world experiences, students may be then better able to tackle similar issues in the workplace. In addition, students may make contacts that help them to get a job (Shneiderman, 1998).

THE ONLINE COMMUNITIES CLASS

A graduate seminar in Online Communities was offered in Fall 1997 and Fall 1998 in the Department of Information Systems at the University of Maryland Baltimore County <http://www.ifsm.umbc.edu>. An online community is a group of people with similar interests and goals who communicate using computer networks and software such as a listserver, bulletin board, chat room, MUD/MOO, or some combination of these systems (Lazar and Preece, 1998). There are millions of online communities on the Internet and new ones are created daily, especially as their role in e-commerce, health, and education is becoming more well-known (Preece, 2000). Online communities are a growing field of study (Cohill and Kavanaugh, 1997; Jones, 1999; Kiesler, 1997; Lazar, Tsao and Preece, 1999; Preece, 1998; Rheingold, 1993; Schuler, 1996).

The goal of our Online Communities class is that students should understand the social and technical issues that contribute to successful online communities. This is achieved through discussion of key topics, led by students. However, the core of the class is a semester long project during which students work in small teams to create or improve an online community. In order to do this, the students must do a thorough analysis of the community's needs and then create a website with a communication tool such as a listserver or a bulletin board. The students are taught community-centered design, which involves iterative design, expert reviewing, and user testing to identify usability and sociability problems (Preece, 2000). The focus is on collecting requirements so that the team's design will fulfill the community's needs. Students also learn about the technological components of an online community. A class listserver encourages the class to be a supportive learning community from which everyone benefits.

IMPLEMENTING SERVICE LEARNING

There are many different models of how to implement service learning in a class. For instance, some classes offer a fourth credit option, where students who take part in community service receive four credits instead of the traditional three (Enos and Troppe, 1996). Another option might be to have service as a small component of the class, or make it optional, in place of another paper or project (Enos and Troppe, 1996). The model of service learning utilized in the Online Communities class is "service as a significant requirement of the course" (Enos and Troppe, 1996). The service to the community takes the form of a semester-long project.

From the beginning of the online communities course until the end, the major focus in the course is on the service project. The lectures present material that provide the students with the knowledge that they would need to work on successive stages of their projects. A period at the end of each class is set aside so that students can raise problems, tell others what they have achieved, and have their interface reviewed for usability problems.

At the beginning of the semester, students form groups. In the online communities class, students are given opportunities to work with different people and organizations. The students choose the group that interests them the most. From there, the students and the community members form a partnership, and together, decide the course that the semester project will take. This is a basic component of service learning, that decisions are not one-way, but rather, are made jointly (Jacoby, 1996b). The only constraints are that the time period of the project should be approximately the same length as the semester, so that the students can see their project through from beginning to end, and that the project must involve creating or modifying an online community. Students are also encouraged to continue their involvement after the semester ends. The students and their community partners decide what the balance of the work should be. For example, some projects involve revising software to support an already-existing community, some projects focus on evaluation of an existing community, and other projects involve creating a new community.

Another component of service learning is reflection, that the students have the chance to talk about their experiences with their fellow students and professors (Jacoby, 1996b). This will ensure that the service-learning experiences are viewed in the context of the related research, practice, and the course. To ensure adequate time for reflection, time is allotted in each class period for the students to discuss their project progress and get feedback. Over the course of the semester, the allotted time per class period increases from about 10 minutes to about 45 minutes per class period. As in any group project, the instructors need to keep an eye on the dynamics of the group members (Gasen and Preece, 1996). The main approach for monitoring group dynamics is to communicate with all

students in the class, individually, on a regular basis. In the final class session, the students give 45-minute presentations on their project and their experiences. The partners, the community members, are invited to these presentations, and may discuss the experiences from their point of view.

COMMUNITY PROJECTS CREATED BY STUDENTS

In the Fall 1997 and Fall 1998 classes, students worked on a total of six different projects. Developing successful online communities involves much more than being able to design and implement software, as the student teams learned. After students initially chose projects, those that appeared risky because of time constraints or over-ambitious goals were not pursued. While some of the projects were successfully implemented and continue to be used, unfortunately, other projects faced problems that hindered their implementation or failed to be used as much as the teams anticipated. These different experiences will be discussed in the next section. The lessons learned will also be discussed, and suggestions made that hopefully will help to prevent others from incurring the same problems. With hindsight gained from experience, we are refining our project management techniques to reduce these problems.

In this section, we provide a brief overview of some of the projects. In particular, we focus on their current status, since from the community service perspective, a successful project is one that continues to live on and bring benefits to the community after the students have received their grade. From an educational perspective there are other success criteria that include: students developing and demonstrating that they have learned new concepts and skills, students gaining a deeper understanding of social as well as the technical issues that impact on successful information technology systems, and students developing personal philosophies that are mutually beneficial to themselves and society.

Down Syndrome Online Advocacy Group

Parents of children with Down Syndrome have many Internet resources related to parental and sibling support. In August 1998, the course instructors were in contact with two people who are both parents of children with Down Syndrome. It was identified that there was a need to develop Internet resources so that parents would have access to research related to Down Syndrome. The community members wanted to see the Internet resources developed, but had did not have the time, the computer expertise, or the money to create such resources.

The two students met on numerous occasions throughout the semester with the two project leaders from the community. The two community leaders lived within driving distance of Baltimore, so face-to-face meetings were feasible. The students also sent out e-mailed surveys to a distribution list provided by one of the community leaders. Between the interviews and the surveys, the students were able to determine the requirements - both in terms of content, and in terms of graphical design. Since December 1998, the website <http://www.dsoag.com> has been operational. The community leaders continue to manage it and add resources to it.

Quiz Bowl Online

Quiz bowl is an activity where teams of students from different universities compete on academic questions, similar to the television show “Jeopardy!” One class member in the Fall 1997 class, who was a quiz bowl player, thought that an evaluation of the quiz bowl resources available on the Internet was needed. In September 1997, there were resources available to quiz bowl players, such as listservers, newsgroups, and web pages. However, quiz bowl players felt that there were many functionality problems.

A group of students undertook a study of the Quiz Bowl community using paper and web-based surveys, and found that there were several usability-related problems. The students created a new website to serve as a centralized repository of resources related to quiz bowl. The website, called the “Quiz Bowl Online,” included documents, subject lists, and a bulletin board. The website was available starting in December 1997 at <http//sta.umbc.edu/~qb>. The website was well received by members of the quiz bowl community. In May 1999, the web server on which the Quiz Bowl Online resided crashed. In July 1999, the web server was restored, and the Quiz Bowl Online was re-established on the web.

Anesthesiologist Community

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The anesthesiologist community was an already existing-community of anesthesiologists who informed each other about new techniques and research in anesthesiology. The communication component of this online community was a listserver managed out of Yale University. The community already existed when the student researcher began work, and the goal of the project was to learn more about the information-seeking behavior of community members and evaluate current and future needs. Because the listserver was closed and moderated, the population of community members was well-defined. Interviews and electronic surveys were used to learn more about the community. Response to the electronic survey was very low, n=80 out of 2600+ members of the anesthesiology list. Respondents to the survey indicated a need to save many of the posts from the listserver for later reading. This was an interesting finding, because a complete archive of posts was available, linked to the listserver's web site. Other findings related to the professional background and level of computer experience of community members. At the end of the semester, the findings were presented to the community members.

The St. Marks School Project

St. Marks is a Catholic primary school in the State of Maryland. The project was carried out during the fall of 1997. The goal of the graduate student team was to evaluate the needs of the teachers and then help develop an online community for the teachers. As part of this goal, the project team agreed to assist in installing a network in the school.

The level of computer awareness and experience among the staff of the school was very limited, yet results of a survey showed that most teachers were eager to learn more about computers and believed that the project held great promise for the school. They looked forward to being able to e-mail each other, receive announcements from the administration electronically, and view student records and reports to see how children were performing in different subjects. Unfortunately, the school misunderstood the need to get software licenses before installing the equipment and consequently could not get the software installed in time for our team to implement and test the online community as planned. The project team obviously could not install the software until after school had purchased the software licenses. Months after the semester ended, the school still had not purchased their software licenses. Instead, the school had to be satisfied with the web prototype that the students had developed.

IFSM Student Online Community

This community was developed by a project team in the Fall of 1998. The goal of the project was to develop an online community to support both academic and social collaboration between undergraduate Information Systems students at the University of Maryland Baltimore County. A careful and full analysis of requirements was carried out with the physical community of students. Over 100 students completed a survey to gauge interest in the community. Once the surveys had been collected and analyzed, the project team began in-depth interviews with students and faculty.

The development team informally interviewed the students. A web-based community site was iteratively developed through cycles of design-test-redesign with the community; a process that we refer to as community-centered design (Preece, 2000). The community site contained web pages, a chat room, a bulletin board, and other resources. The chat and bulletin board used freeware software, downloaded from the web, and then incorporated into the community. Unfortunately, the look and feel of the various components varied because of their different origins, which had severe repercussions for the usability of the community. As students moved between components they had to register and login as though they were entering a completely different community. This is an unfortunate problem that plagues many community development projects that rely on ready-made software downloaded from the Internet (Preece, 2000). Consequently, the member of the faculty who was to oversee another group of students in launching and maintaining the community became disillusioned with the software and did not want to use it.

Marsh Scientific Research Project

The goal of this project was to support science and environmental geographers who are doing research on vegetation and climatic changes in the Maryland's Chesapeake Bay. The Bay is a rich habitat that is under some threat from increased pressures caused by farming and a growing human population. Data has been collected by NASA satellite and is available to the researchers. A team of computer scientists and geographers thought that it would be valuable for the scientific researchers to be able to communicate about their successes and problems in

accessing the data and also to discuss their ideas. Unfortunately, it was difficult to locate other geographers who might represent the user community, and the student development team had to rely on the insights of a few committed individuals.

Believing that a prototype would be valuable for demonstrating the concept to the geographers, the project team progressed. However, it became clear that rather than welcoming collaborating, the scientists could see no point in it at all. The concept of collaboration was quite alien to the group; they were not used to collaborating, and it is not part of their intellectual culture. Consequently, this project has not been used, but the prototype was developed, in an attempt to win over the scientists to a collaborative culture.

LESSONS LEARNED

The overwhelming truth from our experience of developing online communities is that the community must be strongly involved with the development team throughout development. The old saying that "you can lead a horse to water but you cannot make it drink" can be written for this context as "you can develop a community but you cannot make people come to populate it." Being involved means being present to assist the student teams in developing or modifying the community. But being involved also means continuing to be available to moderate and manage the community after the semester is over and the students have completed their projects. The community leaders may call on the students for additional assistance or questions, but in most cases, the students cannot be expected to continuously manage the community. This applies to any community development, but it is particularly important for service learning projects, when one of the learning objectives is to leave a legacy that will benefit the community.

The following summary of lessons learned from the projects described above is intended to guide others wishing to engage in similar service learning projects.

1) There must be community partners who WANT to see the community built, and will make the time to meet with the students. If the community partners are not very interested in seeing the online community built, the project will not be successful. This was a major problem for the Marsh Scientific Research community project.

2) There must be community partners who will continue to manage the web resources when the semester ends and the students go on to other courses. This was a problem for the IFSM student community project that was abandoned. It was also a key reason why the Anesthesiologist, Down Syndrome Online Advocacy Group and Quiz Bowl projects were successful. This is also important for student morale. Even though students may not have time to continue to give input to their projects, they are eager to know that their projects are helpful and are actually being used.

3) There are always surprises! For instance, in St. Marks, it was expected that the software licenses had been purchased, which was not the case. It was a surprise to discover that collaboration was not viewed favorably, in the Marsh Project.

4) Poor usability can kill even creative and well-conceived projects. Unfortunately, there are inherent usability problems when software is downloaded from the Internet and incorporated into a community site. While this may seem obvious, it is a tough problem for these projects as students cannot be expected to develop all the community components from scratch in the time frame available to them.

5) Involving students in intensive and frequent review of each other's projects is extremely successful. Not only were the final designs superior because of the feedback, but the students learned more about usability testing. Furthermore, the students learned to work together and value each other's contributions.

SUMMARY

Service learning was a good educational paradigm for the Online Communities class. Students had good

experiences with their projects, worked with real users, and faced "real-world" problems. However, it is necessary to provide a large amount of structure in the class to ensure a good experience for the students. Information Systems as a field presents excellent opportunities for service learning. By the time students reach graduate student level they have acquired useful technical skills, and many communities are in need of these skills. If implemented well, service learning can be appropriate for many information systems classes. However, we end by giving the students the final word - several commented that this class was the most challenging and required the most work of any in their graduate program but that it was also the most enjoyable and satisfying experience.

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