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Socialization in the "Virtual Hallway": Instant Messaging in the Asynchronous Web-based Distance Education Classroom

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Abstract

This research reports the findings from a survey that examined the differences in communication between students who used Instant Messenger (IM) services and those who did not in the same asynchronous distance education Web-based course. It was found that students who used IM services found it easier to communicate, felt a stronger sense of community, and had more venues for informal and social communication about not only class material, but also information about the school and their common degree program. In traditional classroom buildings, the common spaces such as hallways provide the venue for this informal communication; IM services can enhance the distance education environment by providing the "virtual hallways" for students and instructors to meet.

About the Author

Dr. Scott Nicholson is an assistant professor at Syracuse University in the School of Information Studies. His primary research focus is bibliomining, or the application of data mining to libraries, in library management. However, he teaches many courses in the distance mode and is constantly seeking ways to enhance the distance education experience; this research results from one of those experiments.

Introduction

Many traditional universities are reaching new student populations by offering traditional college courses in an asynchronous Web-based environment.

Schools have been working to replicate the learning experience from a traditional classroom in a Web environment that replicates the lectures, discussions, assignments, group work, and exams of the classroom. Instructors use chat rooms, discussion areas, e-mail, and the telephone for the informal communication that normally occurs before and after class, in the hallways, and in the professor's office.

In the asynchronous Web classroom environment, however, there is no such thing as "before and after class"; the lesson is ready for the students when they log on to the system. There are no hallways or common gathering spaces, as course participants go directly to the virtual place of learning. In the traditional physical classroom, students and faculty must use common spaces such as classrooms, hallways, and foyers that encourage social connections and informal communication that enhances the actual pedagogical experience. These common spaces encourage discussion about class material, assignments, other courses, events in the school, and other topics in a casual manner that might not be appropriate to discuss during class time. Additionally, these spaces allow students from different courses to meet and discuss issues.

An Instant Messaging service (IM) is a tool that can be used to reproduce the role of these common spaces. These services make it easy to communicate with others who happen to be online at the same time, and can serve to provide a stronger sense of community in the solitude of asynchronous online coursework. Students and faculty can use these services for discussions that may not belong in the public discussion boards attached to a class. These services can be set up to allow communication between members of different classes, allowing a much stronger sense of community to grow between students in the same program who are not taking the same course. In order to explore the impact of this technology in an asynchronous distance course, the results of a survey of students who did and did not use the technology in the same course are presented.

Description of a Typical Instant Messaging Service

INSERT Figure 1 here

An instant messaging (IM) service consists of a small program that runs in the background on the user's computer that is connected online to a central hub program elsewhere on the Internet. Other users are connected to the same hub and are running similar client software. In order to

an IM session. The user then enters a short message, which is sent to the hub. The hub relays the message to the recipient, and uses some type of notification, such as a sound or a blinking icon, to alert the recipient of the message. The recipient can respond to the message either with a brief response or by opening a chat window for an extended conversation.

As thousands of people can be signed into a service at the same time, there are tools provided to organize IM contacts. These systems allow you to add user names to a "Buddy List" or "Friends List," which can be sorted into several sub-lists. When a user on a list logs on to the IM service, a notification message or sound is played; these notifications can be customized to the subgroup in order to give the user an idea of the importance of the new visitor. In addition, a user has the ability to block or ignore other users; this is an essential tool in dealing with spammers.

One common concern is that, once installed, the IM service forces a user to be "always on." This concern stems from a misunderstanding of the features of the tool. The user has the ability to have the IM client load automatically or to load only when the user is ready to participate in the IM service. In addition, most IM services allow a user to be invisible, which allows the user to see who else is online without being seen; however, this does not prevent the user from sending messages.

Many people confuse Instant Messaging with online chat rooms. The main difference between the two is the notification for participation. In a chat room, a user must open the program and watch the chat window to see if others enter. In the real world, this would be comparable to a student lounge, as students can talk if they are sitting in the room or set a time to meet. With IM, the program runs all the time in the background, and if two people happen to be using their computer at the same time, they can chat; this is similar to the hallway or foyer in a classroom building which provides a common place for chance meetings with others.

Security Issues Caused by Instant Messenger Services

One fact to be aware of is that IM services can create some security issues on a system. One concern is that the information sent via IM is unencrypted, and thus someone could intercept and read messages sent via IM, just as someone can intercept and read unencrypted e-mail. Therefore, sensitive information like passwords should not be sent over IM (Kessler, 2002). However, there are tools such as Impasse that will encrypt messages sent over the free IM services(Woods, 2002a).

Another concern is that free IM services can open gateways to a secured network by bypassing a firewall. There are a number of tools available

to deal with this issue, such as secure IM services that live outside the firewall and firewalls that filter out unwanted intrusions that can come through file sharing and IM services (Woods, 2002b; Piccinini, 2002). By using Jabber (an open-source XML-based IM service) or another private IM service, many of these security issues can be alleviated.

Related Literature

Jeong (2002) presented findings from his implementation of IM software in both local and distance courses. His focus was on the student-teacher interactions, and he spent more than 12 hours a day online available for students. Students appreciated not having to wait for answers to questions, and appreciated the more informal context of IM conversations. Surveyed students felt that the potential for IM software to be useful in the distance learning environment was very high (8.39 out of 9).

Nardi, Whittaker, and Bradner looked at the use of IM software in the workplace (2000). They discovered that IM software was frequently used for social and informal communication which they called outeraction. Outeraction is defined as "a set of communicative processes outside of information exchange, in which people reach out to others in patently social ways to enable information exchange" (p. 79). While it could be argued that social communication is one form of information exchange, the concept that IM was used for social communication which led to work-related communication is applicable to the current study.

The importance of social interaction in learning was proposed by Vygotsky, with the proposal that "learning occurs in a social or interpersonal context prior to its becoming internalized or individualized within an intrapsychological category" (as cited in Katz & Rezaei, 1999). It has been further examined by situated learning and social constructive theorists (Katz & Rezaei). Mercer and Fisher discussed the importance of not only the learning from the teacher-student social relationship, but also the learning that occurs in student-student social interactions (as cited in Katz & Rezaei).

Podoski, in his 2001 thesis, created a java-based IM tool designed for the educational environment. Since most of the freely available (and heavily commercialized) IM tools are not ideal for use in the distance education environment, Podoski developed a tool more appropriate for this application. One of the main issues is that distance education students use different computing platforms, and may be in a lab or at work where installing an IM messenger is not appropriate. Podoski created a Java-based IM client that can be run from any system that can execute java applets with features appropriate for the distance education environment.

Focus of this Study

This study is based on a survey taken by thirty students of a core class for the Masters of Library Science degree at the Syracuse University School of Information Studies. The course was taught primarily through WebCT in an asynchronous manner, with discussion boards, written short lectures, regular small homework assignments, group work, and a large final paper. The other pedagogical aspect of the course was a three-day residency at the start of the semester; not all students were able to attend this residency due to the travel problems caused by the September 11, 2001, tragedy.

During this residency, one of the students familiar with IM services asked if there could be some coordination through the instructor to provide access to an IM service. American Online's IM client was chosen, as that was the most common service among students who already used IM services. Training documents were created and presented to students via WebCT along with lists of the AOL IM user names of students who were participating. The instructor also participated in the IM service and was available for online consultation.

At the end of the semester, the students were given a survey which looked at all aspects of communication used in the course. This survey was based on work by Small (1999) (and replicated by Small and Paling(2002)) that compared distance students to those in residence. Out of the thirty students who took the survey, thirteen did use the IM service and seventeen did not. Eight of the students in the class did not fill out the survey.

One bias involved with the group of students using the IM service is that they are a self-selected sample. The IM service was not required; therefore, differences may exist between the two groups of students simply because one group was self-selected and chose to adopt the technology. While biased, these samples are representative of any course where use of the IM service is not a required communication method, as the same self-selection mechanism will be in place.

Demographic Information

The two groups differed in several demographic aspects. Those using the IM service were enrolled in more courses in that semester and were younger than those who chose not to use the service (see Figures 2 and 3). One concern about this finding was that there might be an underlying positive correlation between age and number of courses; a chi-square test run on both groups combined showed that age and number of courses are independent (p=.96).

INSERT Figure 2 Here

INSERT Figure 3 Here

One surprising demographic finding is that students who used IM were more likely to be married (69% IM users were married, as compared to 41% non-IM users). In addition, the MLS students who used IM were more likely to work in a library (75% IM users worked in a library, as compared to 41% of non-IM users).

Differences in Communication Behavior

There were some differences in communication behavior between students who used the IM software and those who did not. For example, students who used IM software reported communicating with more students each week than those who did not use IM. They found it easier to communicate about class material and easier to communicate in a social manner with other students. They also used the WebCT discussion boards and the telephone less often than students not using the IM software. However, there was not a clear difference in the frequency of e-mail use between the two groups.

. One of the key findings is that students who used IM were more likely to agree with the statement that they felt a sense of community with classmates (Figure 4). While students who chose to use IM services felt it was easier to form friendships with other students, there was not a difference in how important they felt it was to form friendships and personal networks with other students

INSERT Figure 4 here

Usage of IM Services

Those students who did use IM were asked follow-up questions about the service. There was considerable variability in the frequency of use, but a majority of the respondents used it either frequently or rarely; therefore, there was a polarization of frequency of use.

Students were asked how often they used the service for different topic areas. The least frequently discussed topic of IM communication was

including group work) was discussed more frequently than group work, but was never discussed very frequently. As the WebCT courses are designed to encourage discussion only about a particular course, the IM service provided a place to talk about other issues that concern the students. The most frequent areas of discussion were topics about the Information Science school or Masters of Library Science program in which the students were enrolled and social communication (see figure 5).

INSERT Figure 5 here

Open-ended questions about the use of the IM services elicited several patterns. Several students commented about using the service to discuss this class and other classes the students had in common in an environment not monitored by the instructor. To quote one student, "a private communication channel from me to other students, outside the eye of the professor, was useful and fun." In this particular distance education environment, the only channels of communication for the students were under the auspices of a course; there were no other school-coordinated virtual spaces for distance students to meet socially.

Most students felt that IM services could help with group assignments, even though few students actually used the IM service for group work. Many open-ended comments echoed the same idea – if groups could set a time to meet in IM, then it would be a great tool for getting group work done. However, if the group members are setting a time to meet, then they could meet in a traditional chat room as easily as an IM environment.

The instructor of the class did not have regular IM office hours, unlike the earlier discussed work by Jeong(2002), but did have the service running at various times during the day. Students appreciated this, and several commented that they liked the ability to get immediate feedback and answers. In the use of the service, almost all conversations between the students and instructor had a social aspect, which several students discussed in their open-ended comments. As one student pointed out, "it was neat to see the instructor was in and out of class just like the rest of us. Even if I didn't need to communicate with him I had the sense that we were all in it together."

Several students noticed that IM was not used often for class material. "I think it's actually the wrong technology to help facilitate learning, due to its inherent one-on-one nature," commented one respondent. Even though it was not used for course discussions, several students felt it was valuable as a social tool; in fact, one student called IM a "very fun waste of time."

The most common topic of discussion in the open-ended comments was the social aspect. The IM service was used mainly for social communication, not only between students, but also between the students and instructor. Students felt that it "enhanced bonds" and "bonded us

emotionally." One student appreciated the "social conversations about librarianship" and another felt that it "contributed to a sense of support, community and access." It also helped one student to "feel less isolated." Social communication came through as the most important and frequent topic of discussion through IM.

IM services allow communication at a more personal level; when every post to a class discussion board is planned out, the communication can feel cold and distant. One user of IM, in discussing the connections to other students, said that "I felt more connected to them as friends, rather than simply as classmates. Nothing else I used to communicate was as funny and friendly and warm as the conversations I had via IM."

Aiding Acceptance and Use of IM

If the IM service is not required, then some students will not use it. The students in this survey were asked why they did not choose to use the IM service. The most common answer was that they just never got around to installing it, but all of the choices and answers given are in figure 6.

INSERT Figure 6 here. .

When asked to comment further on this topic, several students mentioned a concern with the amount of time it would take to use the IM services. Another common concern was that the service would be too intrusive or distracting. Both of these call for a need for education about the features of the service that allow you to shut it off or monitor visitors without being seen yourself. When IM services are installed, the usual defaults leave the program in a very intrusive mode; students can learn how to shut off some of these features and calm their worries.

Some students installed the software but never got around to using it. Some of them said that they didn't understand it and either didn't have the time to learn it or felt embarrassed asking questions about it. Another student commented that she didn't want to send the first message and waited for others to take the first step. There was a sense of nervousness from many of the students who didn't use the service, as explained by one student:

"I was not sure that I wanted to be in quite so much contact with my fellow students. It takes me a while to warm up to new people, and I just wasn't ready to sign up for 'all-access.' I was also not really sure how much I would want to use IM, since I often work very independently, and wasn't sure how it would fit in with my way of working. Perhaps as I get to know my fellow students better as I move through the program, IM will seem more attractive and useful to me."

Recommendations and Conclusion

In this asynchronous distance education course, there was no easy way for distance students to meet and talk outside the classroom. Focus was placed on providing tools to pass along course content; however, tools for social communication were lacking. From the survey, it was clear that IM was useful in filling a social communication need (see Figure 6). However, in distance classrooms that are already meeting social needs though other methods, IM may not be as useful.

Another piece of social communication that is missing from the distance education environment is socialization between students in different courses. A well-designed IM service might provide students with the tools to speak with other students in the same program, instead of just those in a single course. A physical hallway in a classroom building provides a spot for students and faculty from different classes to meet; IM services can serve as a virtual hallway facilitating communication between distance students and faculty.

It is also apparent that training is needed, as not all students are comfortable about using IM services or are aware of the features that can make it less intrusive. IM services may be more easily adopted by those in synchronous courses, as those students are more accustomed to doing things at a certain time. When students are involved in an asynchronous course, however, they may feel threatened by the idea of having to be online at certain times in order to use the services. In addition, if students are living in varied time zones around the world, it may be very challenging to discover shared times for IM communication.

In order to implement IM services in the classroom, there are three choices. The best choice would be if the software used to administrate the course had a built-in IM service; if done correctly, this would run seamlessly in concert with the course, even allowing students who are in different courses to find each other. A second choice is to use an external service hosted by the school, which would require customization to meet the needs of the program.

The third, and most realistic, choice is to use one of the commercial services, such as Yahoo or AOL for the IM needs. In order to implement this, the school should provide a database-backed Web site where students can enter their real name and IM identification, as well as provide training materials and encourage use. This will have the advantages of lowering risk, expense, and training time, in that some of the students will already be familiar with the service. There are, however, several disadvantages: the students will be bombarded by corporate advertising while running the free service, spammers frequently use these services to send IM advertisements, and the students are open to messages from anyone else who uses the service.

INSERT Figure 7 here

In conclusion, Instant Messaging services are useful in providing a tool for social communication in the asynchronous Web-based classroom. While the tool could be used for communication about course materials or group work, they were not used very frequently for course content in this particular situation. Training is needed to educate students about not only how to install and use an IM service, but also to show students the important features so they know how to make the service less intrusive when desired. Students appreciate having a non-monitored space in which to communicate, and the implementation of IM services can provide students with a much stronger sense of community and belonging when they greet each other in the "virtual hallway."

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Figure 1: Diagram of Instant Messaging system

	1	2	3
% IM	39%	**46%**	15%
% Non-IM	**59%**	35%	6%

Figure 2. Number of courses taken in the semester studied

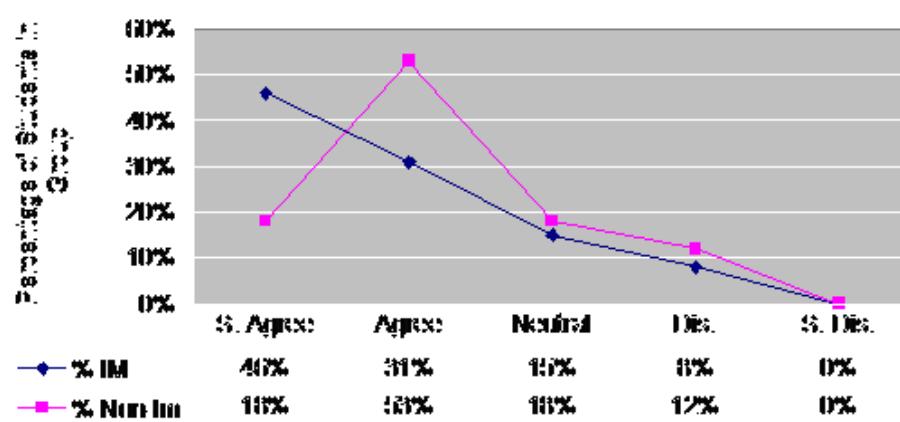|	20-29	30-39	40-49	50-higher
% IM	**54%**	15%	31%	0%
% Non-IM	24%	**41%**	29%	6%

Figure 3. Age Range of Students

Figure 4. Level of agreement with "I feel a sense of community with my classmates."

	Group Projects	Classroom Material	School / MLS program	Social communication
Very frequently	0	0	2	4
Frequently	1	4	3	1
Occasionally	4	5	4	3
Not frequently	1	1	1	3
Never	7	0	3	2

Figure 5. Frequency of Topics Discussed in IM

Why did you choose not to use the Instant Messaging service?	Non-IM	% Non-Im
I didn't understand what it did.	4	24%
I didn't really see the value in it.	0	0%
I just never got around to installing it.	7	41%
I used a computer at work or in a lab, so couldn't install it.	2	12%
Other	2	12%

Figure 6. Reasons for Not Adopting IM

Students Using Instant Messaging Software:

Felt a stronger sense of community with classmates

Formed friendships with peers more easily

Used the service for social interaction and discussion

about the school, rather than course material or group

work

Communicated with more students each week

Found communication with other students to be easier

Figure 7. Common Factors of Students Using the IM Service