Picking Tools for Distance Learning: A View from the Trenches

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Abstract: In this study of students in an online graduate program in educational technology, a Web-based survey was used to collect information about attitudes on and satisfaction with distance learning after they had completed multiple courses. Students who have taken more courses are more satisfied overall and have developed specific preferences for tools that allow multiple forms of interaction. Results are detailed and recommendations developed from their responses. In particular, the students indicated the importance of having a mix of synchronous and asynchronous tools that allow both opportunities to individually pursue content and the capability to build community with others in their classes.

When an instructor undertakes the design of an online course, there are typically many tools and strategies from which to choose. Recommendations come from experts based on experience (Brooks, 1997), research studies (Zhao, Lei, Yan, Lai, & Tan, 2005), collected best practices (McIsaac & Craft, 2003), and common wisdom (Bangert, 2004).

In this study, the researchers focused on the views of the students participating in online courses (Young & Norgard, 2006) as one source for design expertise. One of the

problems with many earlier studies is that student information is collected after a student has completed only a single online course. However, in the few studies that have examined the attitudes of more experienced online students, attitudes and satisfaction levels are more positive although there are no significant changes in learning outcomes (Arbaugh, 2004). Further, recent studies suggest that there is a change in student satisfaction with online courses over face-to-face that has increased over time (Zhao, Lei, Yan, Lai, & Tan, 2005).

The purpose of this study was to examine student attitudes after they had participated in multiple courses in an online graduate program in educational technology at the University of Hawaii at Manoa. To provide further voice for online students, this article includes three authors who are students in the program who have added their expertise to interpreting the results and developing recommendations for instructors. The data from this study are used in developing recommendations on tools and related strategies for designers of online instruction.

Methods

In order to better understand how students perceive tools for distance learning, a survey was conducted in spring 2007. The study was conducted as part of a course the students were taking on educational research. The survey instrument was jointly designed by the students and the instructor as a way to learn about research methods. The questionnaire contained 40 Likert-scale and 12 open-ended questions on attitudes toward distance learning, tool preferences, online community participation, and general evaluation of the online graduate program.

The study participants were 20 students finishing their first year in the program. The online program uses a hybrid, cohorted structure in which students meet face to face for three weekends as part of their online courses in the first semester, then all following courses are completely online. The survey was completed at the end of their second semester as part of a completely online class.

The students are typical of those enrolled in a college of education, with more females (75%) than males (25%). Students are predominantly working adult professionals, with 45% over 40 and only 15% under 30. Very few (25%) considered themselves technical experts before entering the online program, and 45% had never taken an online course. However, many had experience in distance learning, with 40% having taken more than two previous online courses.

Results

The students surveyed indicated that overall they had positive attitudes towards distance learning. When asked after a year of courses if they would prefer distance learning over face-to-face learning, 75% agreed with the statement and another 20% were neutral. Only one student continued to have a preference for face-to-face classes.

While those students who entered with high confidence in their abilities to take online courses did not change their attitude over time, of those with less confidence, half had improved their confidence levels and only one remained unconfident. Ninety-five percent agreed that online learning is an effective way to learn.

During the program, the students experienced multiple tools for distance learning and collaboration (Menchaca, Hoffman, Leong, & Eichelberger, 2007). These included a commercial course management system (WebCT), an online conferencing system for synchronous audio, file sharing, chat, and breakout rooms used for small group discussions (Elluminate), along with a number of freely available Web tools including Skype and Google Tools. Students had access to the University of Hawaii at Manoa's online library resources, including databases, journals with full text, and electronic books. Students have email through the University and are members of a listserv for the class to ease communications both about courses and other administrative issues related to being part of a distance program. Some students used instant messaging among themselves as well as Web-based video conferencing, but this was not widespread.

From the survey results, students were pleased with the tools available for the program, and particularly liked the mix of synchronous and asynchronous delivery. When asked if the tools used met their needs, the students overwhelmingly agreed they did (Figure 1).

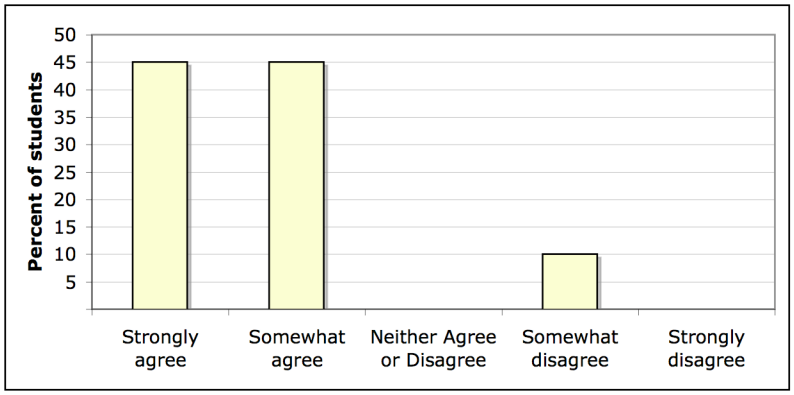

Figure 1. Student indicating tools met their needs

In open-ended comments, they discussed how the tools were effective. They noted that having a single course management system kept all course materials organized and in one place so they always knew where to look, as well as providing 24/7 access. Items of use mentioned included the drop box for ease of submitting assignments and the calendar to keep deadlines clear. Describing the online discussions in WebCT, one student said,

> *I have learned a great deal from the discussion posts. They give the opportunity to post my thoughts, learn from others in the class, find reference sources and post assignments on-line.*

The library's online materials were commonly mentioned, as many had been undergrads when online books and journals were not available. But the highest praise came for those tools that allowed them to talk in real time, either as a whole class (Elluminate) or in

smaller groups outside of class (Skype). Noted one student, commenting on the synchronous class sessions using Elluminate,

> *It's effective because it's interactive. I also like to "be" at class and get answers from instructors right away.*

Because the students in the program are geographically scattered and come from different islands in Hawaii, there was little opportunity to meet in person to discuss assignments and develop group projects. Skype filled an important need for conference calls among students and conversations with faculty advisors. As one student described it,

> *Both text chat & phone: allows simultaneous talking among a group (which has now gotten larger to accommodate up to 10!). Easy to indicate when you are available and see when others are available. Works well...and now also supports video chat too (is still a little strobe-like, but available if you need to show something).*

The majority of students indicated that synchronous communication was necessary for successful learning (Figure 2), and their comments indicated that they valued the immediateness of interactions with instructors and students.

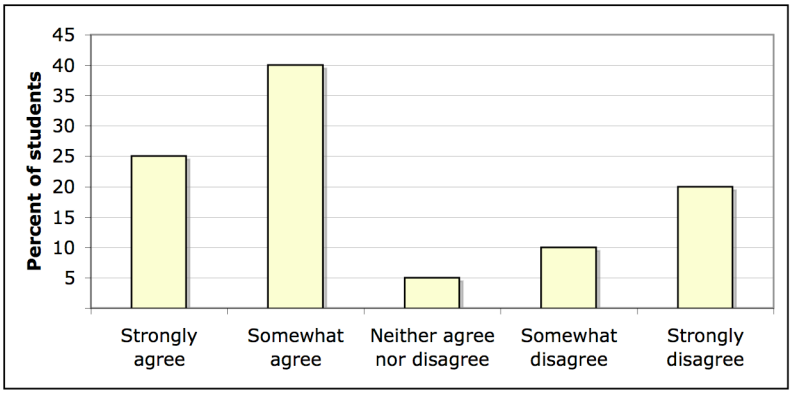

Figure 2: Students indicating synchronous meetings are necessary for successful learning

Although many studies suggest that video conferencing is a solution to create a more "real" presence and face-to-face feel, the students had mixed reactions to this kind of tool. Among issues for implementing more video has been the lack of broadband Internet access for students in some areas of the state. But overall, students were not demanding this capability (Figure 3). Other tools mentioned as possible additions to the mix included use of podcasts or pre-recorded Web video of professor-created content such as lectures (although Elluminate sessions were already recorded and posted), while other students were more interested in seeing enhancements to existing tools. As one student indicated when asked about other tool possibilities,

> *Not sure - maybe something that allows for video conferencing when necessary? Even though I am more than comfortable not talking directly to anyone (SKYPE*

really works well for me!), I can see where needing to actually see either the student or teacher presentations would be beneficial.

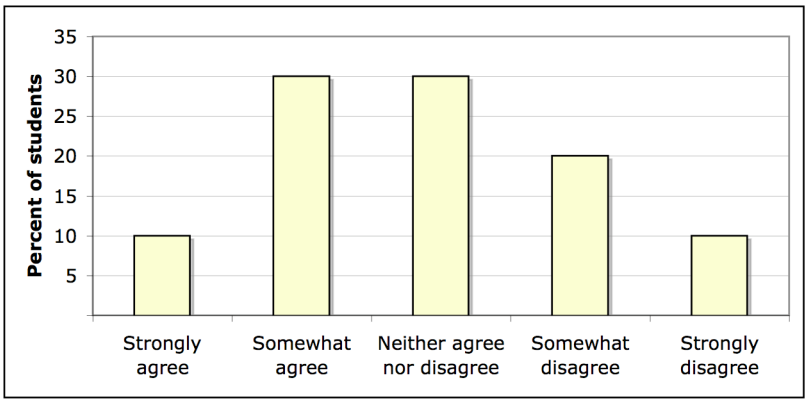

Figure 3. Students indicating synchronous sessions would be better if they included video of the participants

What was particularly clear in the student comments was the importance of feeling connected to their learning community, both within classes and in the program as a whole. They felt that the tools supported them in this, resulting in positive attitudes towards learning more generally in the program (Figure 4).

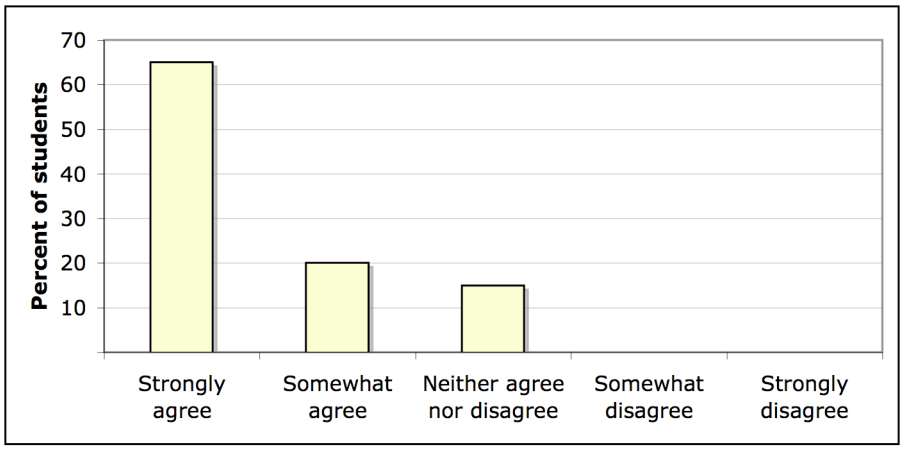

Figure 4. Students indicating the different discussion formats (Skype, WebCT, Elluminate) allowed for good community building in classes

Students rated the online graduate program highly with an overall mean of 4.15 on a scale of 1 to 5 (where 5 is the highest). No students rated the program below average. The tools worked for their needs, and they were successful in meeting their learning goals as indicated in their comments. When asked to describe the experience of being in the program, a student said,

Awesome, awesome, totally! The near future will develop a need for more online instructors so it is best to get this type of education. F2F is a thing of the past….. [The program] is the perfect situation in which to learn.

Implications

The results of the study indicate that the students' attitudes towards online learning, while generally positive prior to entering the program, improved over time as they became more confident in the online environment and were able to employ a range of tools to meet their learning needs. In general, students who elect an online program do so because they expect that this form of learning will work for them so positive attitudes are not unexpected. However, in the case of many of the students in this program, there were few or no options for other graduate-level education as the majority of post-bachelor programs are offered on the island of Oahu with a few on the island of Hawaii. As a result, some students would have initially preferred a more traditional classroom based, face-to-face education. But over time, even these students determined that online learning was as effective and at least an equal choice with the more familiar form of schooling.

The students liked the convenience of WebCT with its ever present content and structure that fit their mindframes of learning such as assignment sections with places to leave their work (drop box), directions from a faculty member about what to do, discussion boards to share ideas with other students, and online reading materials to interact with course content.

An important component in the student ratings was the use of tools that allowed real-time interaction both with the instructor and among themselves. The students used multiple tools, some directly required by the instructor like synchronous class sessions on Elluminate, and some optional for student-to-student interaction outside of "class" like Skype.

For almost all the students, Elluminate substituted well for the in-class immediacy and presence that comes in a face-to-face classroom as indicated by their open-ended responses. While the issues of schedule coordination are difficult for busy, working adults, these students were adamant that the slight inconvenience was worth the effort of making time for these sessions. Additional tools like Skype, email, and discussion boards added a component that allowed a level of individualization to interpersonal interactions. As the one student noted above, she didn't need to talk a lot with others but had the tools if needed, while other students used the tools for regular interaction that went well beyond just course content to more active socializing outside the classroom.

In general, these results reinforce the findings of other studies that found different students had different preferences, that a sense of community was important, and that a mix of synchronous and asynchronous tools worked well (Bernard et al., 2004; Burton & Goldsmith, 2002; Dixon, Crooks, & Henry, 2006; Zhao et al., 2005). However, one new finding that emerges from this study is a preference for consistency so that students rapidly settled on a particular mix of tools introduced in the program. This is particularly interesting in an educational technology program where students were actively studying new technologies in their courses, were clearly excited by emerging technologies as indicated by their choice of discipline, and were exploring the affordances of other tools.

These students quickly settled on a small set of tools and successfully substituted these for the familiar structures of their earlier traditional education. The students had a new virtual structure that had become secure and predictable, and they saw little need to make changes to it. Group norms were established for communication and learning. Rather than brick-and-mortar classrooms, desks and the ever-present instructor in the front of the room, these students had structure through WebCT and immediate interactions through Elluminate and Skype.

Conclusion

This study suggests that, much as Clark (1994) had argued earlier in his well known debates with Kozma (1994), the tool is not what makes a difference in instruction. If anything, the results of this study suggest that an instructor considering tools needs to spend effort creating an environment that successfully accommodates multiple learning styles and balances immediacy of interaction (synchronous) with the convenience of anytime access of materials (asynchronous). Further, it is critical to maintain a consistent environment rather than haphazardly adopting new technologies.

The students in this study came into their graduate program with certain expectations about how a class should operate. They were willing to accept new tools, develop a new framework for learning and interacting, and this resulted over time in positive attitudes and comfort equivalent to what they had in their previous, more traditional schooling. A key to success was not only creating a feeling of community within the program, but a set of norms about how things worked and would work in the future.

The changes in attitude are not unexpected. These students experienced a carefully designed program in which instructors took time to introduce them to new tools and provided support for using them to build community. Too often, little attention is given in the literature to the role required of an instructor who teaches online in terms of helping students acculturate to the new learning environment. This role is quite different from teaching in a face-to-face classroom, where students come prepared with over twelve years of experience in what to expect and how to act. By contrast, in the online environment, the instructor has to deal not only with content but also scaffolding students' learning how to learn online. Anderson (2001) refers to this as the dual curriculum of distance learning, in which a student must learn both content and process.

As this study suggests, students do improve their attitudes and skills about online learning when the right environment is provided. That environment does not require all the latest bells and whistles but needs care to include a balanced, consistent mix of tools and strategies.

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