Using Seminar Blogs to Enhance Student Participation and Learning in Public Health School Classes

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Introductory classes at public health schools often use a lecture format to teach a large group of diverse students. This structure does not utilize principles associated with enhanced learning outcomes and good practice in education, such as promoting student interchange and collaboration, encouraging active learning, and facilitating different learning styles.[1–3] Active learning "involves students in doing things and thinking about the things they are doing"[1(p2)] and has been found to be effective for learning content and "probably superior to lectures in promoting the development of students' skills in thinking and writing"[1(iii)] Examples of active learning include case-based discussions, debates, simulations, cooperative learning, and problem-based learning.

Some educational settings have created a more active learning environment through the introduction of educational online technologies, such as "Web logs" (a name that has been condensed to "blogs"). Blogs started out primarily as a self-publishing movement for professional and armchair journalists writing for an open online press.[5–7] Some writing and humanities classes have adapted this digital diary format as a way for students to immediately and publicly present their work and obtain commentary and feedback from teachers and fellow classmates.[8] The educational use of blogs has expanded to include diverse age groups (see http://educational.blogs.com) and fields of study.[9] Blogs can be used in education as individual platforms for sharing personal and professional commentary, as course platforms that invite comments on controversial questions from students (such as the class blog for the Harvard University course Justice: Moral Reasoning[10]), and as collaborative research platforms. Harvard Law School's Berkman Center for Internet and Society has organized projects to explore the potential benefits of blog technology in a variety of educational and community-building projects and contexts (http://cyber.law.harvard.edu/

home/weblogs_at_harvard_law).[11] There are also organizations that promote online education and publish articles that describe these endeavors (such as http://www.educause.edu/apps/er/index.asp and http://www.sloan-c.org/index.asp).

Despite this burgeoning use of innovative technology in educational and professional settings, research assessing the impact of blogs and online discussion groups on student learning is limited. Publications in peer-reviewed journals are scarce.[9] We have found no studies describing or assessing blog discussion groups in public health classes.

In an effort to promote student collaboration and learning in a graduate level environmental health course, we introduced the use of what we termed "seminar blogs" (small groups of students engaged in online discussions of cases and news articles). We surveyed students on the impact on their learning and solicited feedback about their experience. We hypothesized that this intervention would increase student participation and enrich learning of environmental health issues. We also hypothesized that, although

Objectives. We evaluated whether "seminar blogs" enhanced learning in a large graduate-level introductory public health school class.

Methods. Sixty students were divided into 6 online blog groups. Students posted their assignments (case analyses, news commentaries), prompting comments from other students. Anonymous poll surveys of students were conducted at midpoint and at the end of the course.

Results. Sixty percent reported that blog participation enriched their learning quite a bit, 34% a small amount, and 6% not at all; 54% said that the blogs provided opportunities to learn from classmates. When comparing writing on the blog to speaking in class, 60% found it easier, 30% about the same, and 10% harder. About 65% said that skills attained by participating in blogs were useful for current or future work. Major criticisms involved time issues.

Conclusions. Small seminar blogs offer opportunities for increased student participation, interaction, and learning. To be most effective and appealing, assignments for postings need to allow sufficient time for commentary. This educational technology has potential to expand the classroom experience and is worthy of further development and testing. (*Am J Public Health.* 2008;98:1658–1663. doi:10.2105/AJPH.2008.133694)

there was little face-to-face contact, some level of group dynamic would develop within the separate groups.

METHODS

We implemented the use of seminar blogs for the first time at a school of public health's course, Introduction to Environmental Health, which met twice a week, 2 hours per session, for 8 weeks in a lecture hall. The course fulfills a 2.5-credit requirement for environmental health, so it attracts a diverse group of students with little background in environmental health. It took place in the second half of the first semester, so students had already experienced taking other courses. The course consisted of lectures by core faculty or guests, with some in-class discussions of case vignettes, but no associated, small, face-to-face seminar groups. Students could choose ordinal or pass/fail grading, and assessment was based upon graded assignments (case analyses, news commentaries), group project, midterm examination, and class participation.

Six separate blog sites, each headed by a teaching assistant (TA), were created with the Blogger.com free software available through Google. Each blog was set up to be accessed only by invited participants. Students could view and participate only on their individual blog sites, but TAs and faculty were able to view all 6 sites. The TAs could individualize their Web sites by selecting from several templates and organizational structure options. Before the course, the TAs participated in a 2-hour training session that included skill-building exercises for leading seminars and hands-on practice with blogs and Blogger.com. An information technology expert (F.S.) also imbedded the blog links into the course Web site so that it was easy to toggle back and forth between the blog and the course Web site, which contained standard course content, such as readings and lecture notes.

We divided the students among 6 blog seminar groups, 10 students to each blog. Based on information from brief student bioprofiles obtained during the first class, we distributed those with blog experience and medical or science backgrounds evenly among the groups. Students received e-mail invitations to the blogs from their TAs' instructions on how to join and participate. Students posted their assignments (500-word limit) on the blogs (an analysis of a case vignette, a position in a pesticide debate, and news commentary). Students would read and comment on the 2 to 3 new postings that appeared on their blogs each week. Students posted case analyses and discussed them online 1 to 2 days before they were discussed in the classroom, and for as long as interested afterwards. Students were graded on their individual assignments that were posted but were not graded on the content of comments on the blog. Course participation was 10% of a student's overall grade, and blog participation was considered an important component of class participation.

At midterm and during the last week of the course, students were asked to complete anonymously an online survey asking about their blog use and perceived impact on learning of environmental health and facilitating interactions with classmates. The survey also asked about ease of blogging compared with speaking in class, the development of group dynamics, potential usefulness of blogging in their work, and advantages and disadvantages of seminar blogs. The data were collected and put into an Excel spread sheet (Microsoft Corp, Redmond, WA), and prevalence rates computed with SAS statistical software version 9.13 (SAS Institute, Cary, NC). Feedback on blog use was also obtained informally from TAs and contributed to ongoing adjustments in the blogs.

RESULTS

Class Description

The class of 60 students consisted of 45 medical doctors (MDs) in the master's of public health (MPH) program and 1 MD in the master's of occupational health program, 3 lawyers in the MPH program, 7 first- or second-year master's students, 2 nondegree students, 1 PhD candidate in biostatistics, and 1 doctoral student in environmental health. The students also represented a variety of concentrations: 4 in occupational or environmental health; 10 in quantitative methods; 8 in international health; 16 in health care management and policy; 7 in clinical effectiveness; 3 in law and public health; 8 in family and community health; 1 in biostatistics; 1 in society, human development, and health; 1 in humanitarian assistance; and 1 staff member. For 21% of the class, English was not the native language. Only 15% had prior experience in using blogs or setting up Web pages.

Survey Results

A total of 87% (n=52) answered the midterm survey and 83% (n=50) the end-of-course survey. For 85% of students, getting started at using the blog was rated "easy" or "very easy." From the midterm survey, we discovered that students thought comments to a blog posting needed to be researched, resulting in perceived excessive time commitment and less participation. We then clarified that comments need not be researched, but like a comment in a face-to-face seminar, could be short, and yet thought provoking.

After clarifying the expectations at midcourse, students spent less time on the blog in the second half of the course, with 70% reporting 1 hour or less per week on the blog, 18% greater than 1 hour but less than 2 hours, and 12% more than 2 hours.

Students were asked to rate how blog participation enriched their learning, as "none," "a small amount," or "quite a bit." Figure 1 shows that, at the end of the course, about half of the students thought that participation in the blog enriched learning of core course material and noncourse environmental health issues quite a bit. Nonnative English speakers found the blog to be more helpful, with 78% reporting that blog use helped in learning core material quite a bit (vs 36% native speakers), and 78% in learning of environmental health issues quite a bit (vs 57% native speakers). We also found that students who reported getting the most out of the blog had a similar distribution of time spent on the blog as the rest of the class.

Most students found that blog participation provided more of an opportunity to learn from classmates and hear their perspectives (Figure 2). Most students (60% of the whole class and 80% of nonnative speakers) found it easier to write a post or comment than to speak in the class (Figure 3). A total of 64% of students said that they could apply the experience of using the seminar blog in their current and future work.

The blog groups had little face-to-face contact among blogmates. Students were asked to rate the degree to which personalities of some people came across over time through their written comments and postings: 8% replied "not at all"; 60% replied "a small amount"; and 32% replied "quite a bit." When asked to what degree they had developed as a group and felt like a group member by the end of the course, 34% said "not at all," 62% said "slightly," and 4% said "quite a bit." The survey also asked students to characterize the group dynamic, if any, that had developed by the end of the course. We defined a negative dynamic as excessive competitiveness, tension, or lack of trust that discouraged participation, as well as decreased sharing and learning from each other, and a positive dynamic as cohesiveness and trust that makes one feel more comfortable to participate, share, and learn from one another. None reported a negative or even slightly negative dynamic, 40% felt no dynamic
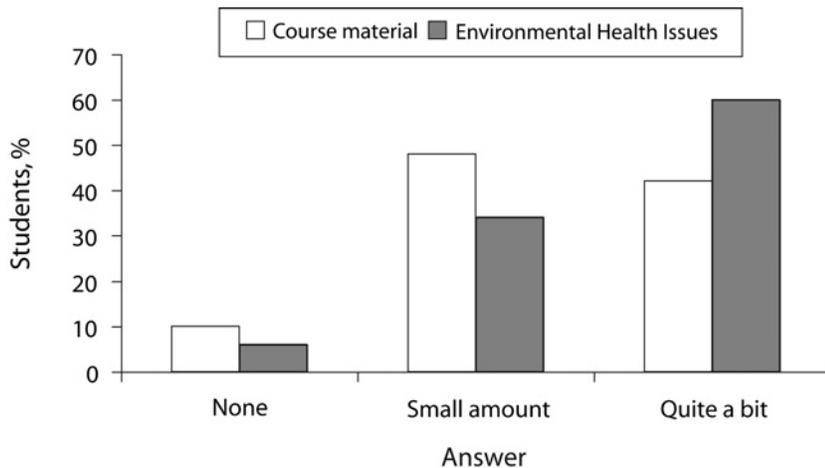
FIGURE 1—Students' answers to the question, "How much did blog participation enrich your learning?"
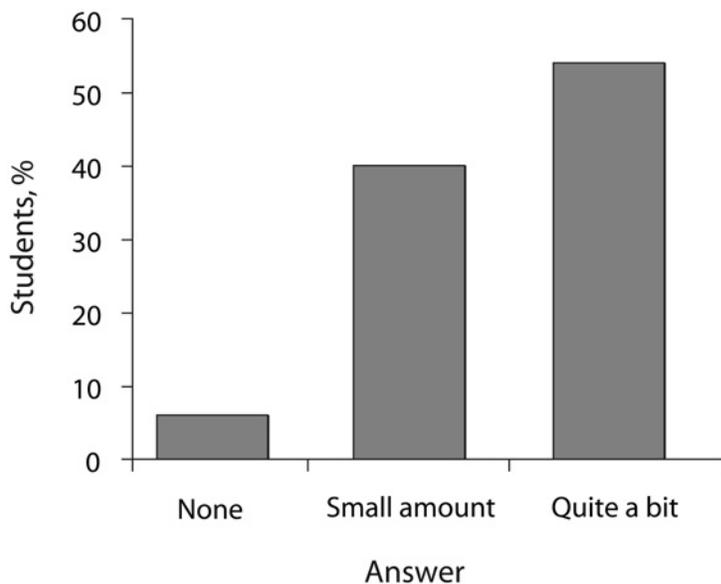

FIGURE 2—Students' answers to the question, "Did the blog provide more opportunity to learn from classmates?"

Once we felt free to post our comments and thoughts we had some great exchanges. Also, better than a scheduled lab, I could do my postings on my own schedule.

It is easier for me to create coherent thoughts in writing. You can revise your words before committing them to the blog and this makes what you have to say both more organized and more representative of your thought process than the spoken word may be.

As a nonnative speaker, I always have a hard time in class discussion because of delay in hearing and speaking. This innovative thing gives me a chance to say what I want to say without wasting classmates' time in the traditional classroom.

We also asked students what they liked least about participating in the blog and what they would like to see changed. Their answers described too many assignments and too many postings, not enough time allotted to comment on postings and other comments, too much time needed to comment because of too many postings, feeling forced to comment, and lack of face-to-face contact. Some specific quotes include

There were far too many assignments. . . . I would have gotten more from less . . . in other words quality, not quantity."

I really didn't really like being "forced" to comment.

I think blogs are more fun when they include like-minded people who are interested in the same kinds of things. . . . I think our blogs were formed to emphasize diversity, but I wonder if it would have been better to emphasize similarities in background or interest.

I've realized I'm not a blogger type.

We observed that students were also able to use the blog as a visual medium for expression, either by adding pictures to illustrate their posted assignments or by drawing a schematic. To illustrate, we have provided a link to a demonstration blog (http://seminardemo. blogspot.com) that contains copies of postings and comments from one blog (removing student names and identifiers) and involves discussion of 2 cases (oil in the Niger Delta and asthma in a lower-income community) used in the class session on environmental justice. At the bottom of the student's posting of the case analysis, one can click on comments to view the interchange from the other students.
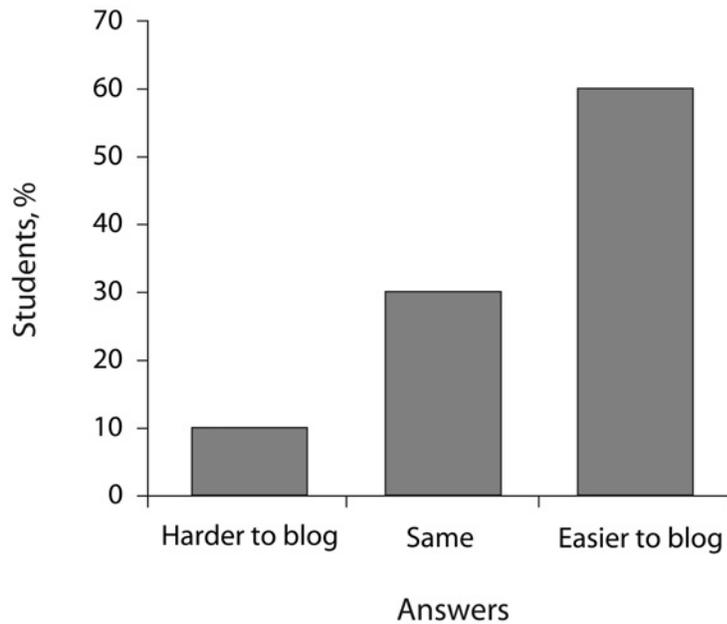
had developed, 50% suggested that a slightly positive dynamic developed, and 10% felt there was a positive dynamic.

In the surveys, we also asked students to comment on what they liked best about participating in the blog, and their answers included exchanges with other students, hearing different perspectives, flexibility of time of participation, having other students see and comment on their postings and opinions, helping them to stay on top of class work, and providing a way to participate without having to speaking in class. Some illustrative examples are as follows:

FIGURE 3—Students' answer to the question, "How do you compare participation on the blog to speaking in this class?"

In their postings and comments, students can also provide links to other relevant sites. This sample blog is open, but in the real class, only the group members and faculty had access to the blog.

In another example, as part of his case analysis, a student drew a diagram depicting interrelationships between fossil fuel dependency and environmental and health impacts related to oil in the Niger Delta. The instructor (R.H.G.) read his analysis before the class session and then displayed his diagram in the whole-class session, where it became the focal point for the case discussion. This student, who previously had not spoken in class, was able to explain his diagram, and in doing so, helped to lead the class discussion.

DISCUSSION

Seminar Blogs and the Educational Experience

We introduced seminar blogs into a large graduate-level course at a public health school. These small blogs acted as vehicles for discussion of case analyses and peer feedback, and encouraged explorations of other related topics of interest. The majority of students reported that participating in the blogs substantially enriched their learning of both core course and other environmental health topics, and provided more opportunities to interact with their classmates.

There are a number of reasons that the seminar blogs may have contributed to student learning. In general, the seminar blogs stimulated student engagement and collaborative learning, which educational research has demonstrated promotes a broad range of student learning outcomes.[1,3,12,13] In addition, by combining clear goals and structure (posting of assignments) with the free-flowing nature of blogging, we created conditions thought to be conducive to adult learning: opportunity for self-direction and autonomy; connection of course learning to one's own knowledge and experience base; and making the learning and material relevant and applicable to one's own work.[12,14,15] The ongoing discussions on the blog allowed for sharing perspectives based upon different life experiences, and exploring issues that felt relevant to individuals, even if outside the immediate core curriculum. The seminar blog also provided another avenue for student expression through visual means and writing, which was particularly helpful to those who were less inclined to speak in class, nonnative English speakers, and those with more-visual learning styles. The small-group blog also allowed for prompt feedback; by posting their assignments on their group blog, students received feedback on their assignments not just from a TA, but from their peers, in real time, and close to the class session relevant to their assignment.

The blog also enabled student–faculty contact. When questions arose after a class session, guest speakers could communicate subsequently with students on their blogs. The course director (R.H.G.) observed postings and interchanges among the students in each of the blogs, and sometimes dropped in to add comments of her own. Sometimes, the faculty–student blog interaction prompted a subsequent face-to-face conversation. Overall, the seminar blog encouraged practices put forth as principles that enhance education: encouragement of student–faculty contact, cooperation among students, active learning, prompt feedback, emphasis on time on task, communication of high expectations, and respect for diverse talents and ways of learning.[2]

Although online educational innovations appear to be very promising, there has been very little published assessing impact of educational blogs.[9] Our student reports of enhanced learning and student interactivity are similar to results from a study published by the Brisbane Graduate School of Business that summarized survey data from students using its "MBA Blog,"[9] In the Brisbane blogs, students were given no specific instructions other than to make contributions based on the subject matter that they were studying. Participation was optional, but students were given credit for "meaningful" contributions. A total of 50% responded to a survey, and 66% said that they agreed or strongly agreed that the blog assisted them in learning in the course, with 12% disagreeing or strongly disagreeing. There was a strong endorsement of the MBA blog for increasing student interactivity, with 77% stating that they agreed or strongly agreed that it increased the level of meaningful intellectual exchange among students.

In our survey, most students reported that the personalities of the other bloggers came

through to some extent in their postings and comments. However, most felt only a slight sense of group belonging developed from blog participation. Some educators have noted that participants in online discussion seem to project their personalities into the online discussions and so create feelings of social presence that build online discourse communities.[16] Gunawardena and Zittle define "social presence" as the "degree to which a person is perceived as 'real' in a mediated communication."[17(p8)] Some studies involving online courses and Web conferences have found perceived social presence to be an important predictor of students' satisfaction and learning, but not necessarily performance on tests.[16–18] It is possible that a greater degree of group belonging may have developed over a longer course time.

Our inclusion of online seminar blogs occurred within the context of a larger, face-to-face classroom experience, and could be termed a "hybrid" or "blended" learning experience.[19] The Sloan Consortium (http://www.sloan-c.org/index.asp), which has promoted online learning and "asynchronous learning," has also explored "blended learning," which integrates face-to-face and online learning.[20] In our course, we also included other experiences to promote active and collaborative learning, such as class case-based discussions, in-class debates, and small group projects. We found that student interactions on the seminar blogs added yet another dimension and avenue for active learning within a large-class environment.

This initial blog innovation also identified problems: most importantly, requiring too many assignments per week to be posted made it difficult to have a sustained discussion on any one topic. To make seminar blogs effective and appealing, the number and length of assignments posted needs to be limited, and sufficient time (with boundaries) needs to be provided for commentary. Because the size of our blogs was small, like a seminar group, it provided more opportunities for actual interchange and greater ease in keeping up with posts and comments than might occur in class blogs of much greater size.[10]

On the technical side, Google's free software Blogger.com, offered more functionality (ease of adding pictures, diagrams, links to other Web sites and resources) than did the online discussion tool available through our course Web site. In addition, using Blogger.com gave students experience with free software available for their use outside of the school setting. Interestingly, although only 15% of our students had any prior experience using blogs, 64% said they planned to make use of blogs in current or future work.

Limitations

A limitation of our study was the short time frame (8 weeks) for this particular course, which may have been too brief a period to fully assess the capacity of developing group dynamics and social presence through participating in a seminar blog. In addition, this study was a descriptive study based upon student self-report of effects on learning and participation and did not assess the impact of the blogs on specific measurable educational outcomes with a comparison group. We think that the positive endorsement of blog use from most of this diverse class of mature, midcareer students, along with its creation of opportunities associated with good practices in education, speaks to the potential of this and similar technology to enhance learning, and makes it worthy of further testing and development.

Other Applications and Future Studies

The use of seminar blogs has applications in a variety of other educational settings, both within public health and elsewhere. Blogs could be used as an adjunct to an in-class experience, as we did in our course. Seminar blogs could also be used in situations of distance learning, in which students observe lectures online, or by video cast, but then engage in seminar-type discussions via a blog.

We also identified issues in need of further study and discussion, including criteria for grading participation, desirable and effective incentives for participation, finding the balance between the requirement to participate and the freedom to choose to participate, and balancing the need to preserve privacy of participating students and the desire to facilitate students' interactivity.

Conclusions

The use of blogs is increasing in the public sector and among public health professionals (e.g., http://www.scienceblogs.com/effectmeasure, http://www.defendingscience.org, http://thepumphandle.wordpress.com, http://dotearth.blogs.nytimes.com, and http://www.npr.org/templates/story/story.php?storyId=17613637). Other technologies, such as wikis, a combination of Web site and word-processing document that allows groups to work easily on content together, are finding many educational applications that promote collaborative learning (e.g., http://www.wikiineducation.com/display/ikiw/Home and http://www.scienceofspectroscopy.info/edit/index.php?title+Using_wiki_in_eduction). Blogs and other educational technologies are creative and evolving innovations that have the potential to enrich learning and are worthy of further development, assessment, and use in public health schools and other educational settings. The authors invite you to continue the conversation about educational blogs and wiki's at our blog (http://teachpublichealth.blogspot.com). ∎

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Human Participant Protection

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