INSTRUCTIONAL DESIGN AND ASSESSMENT

"Blogging" About Course Concepts: Using Technology for Reflective Journaling in a Communications Class

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Objective. Web log technology was applied to a reflective journaling exercise in a communication course during the second-professional year at the University of Mississippi School of Pharmacy, to encourage students to reflect on course concepts and apply them to the environment outside the classroom, and to assess their communication performance.

Design. Two Web log entries per week were required for full credit. Web logs were evaluated at three points during the term. At the end of the course, students evaluated the assignment using a 2-page survey instrument.

Assessment. The assignment contributed to student learning and increased awareness level for approximately 40% of the class. Students had few complaints about the logistics of the assignment.

Conclusion. The Web log technology was a useful tool for reflective journaling in this communications course. Future versions of the assignment will benefit from student feedback from this initial experience.

Keywords: reflective journal, Web logs, communication, self-assessment

INTRODUCTION

Engaging pharmacy students in thinking about course content within the classroom setting can be a challenge. That challenge appears to multiply significantly when students are asked to reflect on course content outside of class time. And yet, in the interest of deeper learning and an awareness of lifelong applicability of course material, that reflection on and mental application of what is taught in class is necessary, especially in a course on professional communication.

Reflective journaling is often associated with teacher education and humanities courses, but has also been used as a learning tool in a variety of other disciplines, including pharmacy[1-3] and other health professions education.[4-7] Journal writing may be viewed as "a device for working with events and experiences in order to extract meaning from them."[8] Writing aids learning in a variety of ways, such as by increasing an active involvement in learning and fostering critical thinking or a "questioning attitude."[9]

Journaling may also be used as a learner-centered assessment tool,[10] to determine whether students are actually making sense of the content discussed in class. As self-assessment, this activity may reveal to students areas in which they need to devote more investigation, or request more assistance for understanding. Self-assessment facilitates the transfer of learning out of the classroom and into different contexts. For the instructor, review of student journal entries may reveal insight into the general level of meaning being constructed by students from course content; and that may guide future class discussions, perhaps to reiterate some idea that was missed, or to expand a valuable path of learning that was uncovered. Either way, the assessment can be a formative one for students and for their teachers, and the ongoing feedback may be valuable.[11]

Despite these advantages of using reflective journals as learning and assessment tools in coursework, the phrase "reflective journal" may meet with consternation from both students and faculty members. Students sometimes perceive a journaling requirement as "busy work," for which they do not have time. Faculty members may be conscious of the time element involved in efforts to evaluate student journals and to generate appropriate mechanisms for that evaluation. They may also find disappointment in student effort or attitudes toward the assignment.

The applicability of reflective journaling as a tool for learning and assessment was noted, as this tool had

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potential to foster several outcomes of our course in professional communications, including developing skills in communication, critical thinking, self-learning, self- and social awareness, empathy, and sensitivity to cultural differences, among others. (These outcomes reflect abilities composed of knowledge, skills, and attitudes that the University of Mississippi School of Pharmacy has adopted for its curriculum, in keeping with the 2000 Accreditation Council for Pharmacy Education [ACPE] standards[12] and the 1998 Center for the Advancement of Pharmaceutical Education [CAPE] general ability-based outcomes.[13]) Once the decision was made to incorporate reflective journals into the course, the choice of mechanism remained.

Web logs, or "blogs," to use the more common, shortened form of the term, have become a widespread Internet publishing phenomenon. A blog has been defined as "a website which contains periodic, reverse chronologically ordered posts on a common webpage."[14] Blogs take on various forms and meanings, depending on the author and the purpose for which the blog is undertaken. Some blogs are personal (diaries, "news" pages for friends and family, photo journal, etc), while other blogs have a public purpose (business meeting minutes, collaborative research notes, broadcast news, book club discussions, etc). Blogs have also been applied to education in such varying capacities as class management tools, course communication, professional development, content delivery, and reflective journaling. Published discussions of the outcomes of those educational applications are usually positive.[15-17]

The blog reflective journal has potential advantages over a hardcopy version of the same assignment. The software inserts a date and time stamp on each entry, allowing an instructor to know exactly when entries were made. This is advantageous if regular reflection is deemed important to learning throughout the term (and prevents students from hastily writing the total number of entries required on the night before the journals are submitted for evaluation). In addition, the electronic nature of the medium provides superior portability for the instructor (ie, many files on one CD rather than many separate student journals to transport), and the ease of electronic spell checking.

Also contributing to the popularity of Web logs, the elements required for utilizing blog technology are generally free to those users having access to a computer and Web connectivity. All students in the professional program at The University of Mississippi have a laptop computer; and network access is available in the pharmacy classrooms, throughout the school and at other University sites. This portability of computing access contributes to the strength of student enthusiasm for communicating through electronic media such as e-mail, listservs, announcement pages, and instant messaging. Thus the potential for reflective journaling, combined with student access to and interest in communication technology at The University of Mississippi School of Pharmacy, drew the authors to explore the use of Web log technology in the professional communication course (78 students enrolled) during the 2003 fall semester.

DESIGN

A variety of Web log software was available; and *Movable Type* (version 2.64, downloaded as freeware in 2003) was selected for its apparent simplicity of use and compatibility with our network infrastructure. Previously installed and available for our use were an intranet server and a database server; we used separate servers, but the same effect could be garnered through use of a single computer. Most available browsers were compatible with our chosen blog technology. (Additional information on the hardware and software used is available from the author by request. *Movable Type* is a product of Six Apart, San Francisco, Calif. Other blog software programs are available at no cost for educational use, as well as some services [such as blogger.com] requiring no resident server.)

Students' technical needs were basic. Internet access was imperative, but connectivity speed was not critical; even dial-up modem access was satisfactory for the limited transfer of data that most Web log entries required.

From the student user's perspective, the Web log software was similar to Web-based e-mail systems. After logon, an entry could be typed into a text box, and "published" through the use of a single "submit" button. Edits could be made before or after the entry was posted, but the original time and date of the entry were preserved (important in this case, as the evaluation of student performance on the assignment included a date requirement.) Each entry was automatically added in chronological order to other entries on the Web page comprising the student's journal and archived monthly.

Prior to this assignment, only one student in the class had experience with Web logs (as revealed through a "technology use" survey distributed on the first day of class). Therefore, a large portion of one class period was devoted to describing the assignment and the expectations of student participation. This investment of class time was anticipated to facilitate student performance and decrease student apprehension on this semester-long exercise.

The description of the assignment that was distributed to students enunciated the programmatic curricular

outcomes that the exercise was intended to foster (abilities defined in our program as communication skills, social skills, self- and social awareness, critical thinking, self-learning, empathy, and sensitivity to cultural differences). These outcomes were also broader goals of the course itself and the professional curriculum. This exercise was intended to facilitate development of these skills and attitudes through the application of course concepts outside of the class setting.

To bring the intended educational objectives of the assignment into closer focus, the following were behaviors expected of students: (1) identify communication observations, (2) self-assess communication performance, and (3) apply course concepts outside of the class setting. It was suggested to students at the initiation of the assignment that these actions may improve communication skills and may influence attitudes toward communication by enhancing an understanding of the implications of communication in practice.

The student participation requirement of 2 entries per week (for full credit) was designed to match the frequency of class attendance (Mondays and Wednesdays) and introduction of new course material in the related class discussions. Most students in the class reported spending an average of 15-30 minutes on each blog entry. In each of these entries, students were encouraged to demonstrate: engaged thinking about communication issues, creativity, thinking beyond the obvious, and a conversational style (informal, but with correct spelling and general grammar). Because of the online nature of the Web log, students were encouraged to explore and include relevant hyperlinks that they discovered and found to be useful to their understanding, or as an illustration.

In a detailed introduction to the assignment, students were reminded of the importance of respect within the context of the class and in professional communication in general. While guidelines were provided to deter inappropriate entries (no defamatory or offensive language, no plagiarism, etc), students did not receive a comprehensive list of things to avoid in blog entries in order to maintain a respectful environment. They were asked to supplement the guidelines by using their own professional judgment when composing their entries.

Students were provided with information on the expectations for their performance on this assignment, including the actual rubric (available from the author) whereby they would be graded 3 times during the semester. In order for the value of the assignment to be evident to students, and for their efforts throughout the semester to be adequately rewarded, 10% of each student's course grade was allotted to this exercise. Other case-driven written communication assignments, such as business

letters and resumes, and performance and content examinations accounted for the remaining 90% of the grade.

While most students had little difficulty generating topics upon which to reflect, some were challenged by this or lacked confidence in their own ability to generate appropriate topics. Therefore, the instructor posted "bloggable questions" to aid in application of course content and to support further discussion on most of the course units (examples are included as Appendix 1). While the questions were not employed by all students as springboards for reflection, anecdotal comments revealed that the availability of these prompts was important to some and facilitated their completion of the assignment.

Within the first week of the assignment, the instructor and teaching assistant reviewed blog entries to provide formative feedback. This feedback and encouragement were provided through the "comment" function of the Web log software, to increase student confidence or to facilitate improvement where needed. For those log entries that were particularly creative or insightful, comments were posted by the instructor or teaching assistant to encourage consistent performance along the same fashion. Such a level of instructor feedback was not possible throughout the semester; but early feedback was expected to demonstrate to students the importance that the instructor placed on the assignment.

Student performance was evaluated to facilitate appropriate student attention to the assignment, and to reward their active participation by awarding the activity some credit toward the overall grade for the course. Given that formal assessment may inhibit reflection,[8] care was taken to assure students that entries would not be criticized or assessed based on opinions or other subjective or attitudinal expressions that students wished to include. Evaluation of blog content was limited to 3 components: frequency of postings (2 per week for full credit), clarity in writing (appropriate grammar and spelling), and whether the entries appeared thoughtful, engaged, and relevant to course content.

Evaluation occurred at 3 points during the semester, approximately 4 weeks apart. The 3 evaluations of the students' work were divided between the instructor and the teaching assistant to minimize rater bias, with the instructor evaluating each student's blog at least 1 of the 3 times during the semester and the teaching assistant evaluating each student's blog at least 1 of the 3 times. To further facilitate interrater reliability and objectivity in scoring, a 10-point rubric was developed. Before the initial evaluation of students, both evaluators independently rated the same 5 Web logs and then compared ratings.

At the end of the term, student feedback was solicited on several aspects of the assignment, including

Table 1. Student Perceptions Regarding the Use of Web Logs ("Blogs") for a Reflective Journaling Assignment in a Communications Class (N = 75)

Perception	Agree, %	Disagree, %	Mean (SD)
The description of the assignment was sufficient. (n = 74)	73	5	4.0 (1.0)
The web log technology functioned well. (n = 74)	74	4	4.1 (1.0)
The web log site was difficult to access with my computer. (n = 74)	3	86	1.5 (0.9)
I needed more suggestions for "bloggable ideas." (n = 74)	58	18	3.7 (1.2)
The evaluation rubric for the web log assignment was fair. (n = 73)	58	12	3.7 (1.1)
The web log assignment carried too much weight in the overall point structure for the course (the average of the three blog evaluations accounted for 10 of the course grade). (n = 73)	21	51	2.5 (1.3)
Perceptions of Learning through the Assignment			
In my web log entries, I was able to relate concepts from class to everyday situations. (n = 75)	71	4	4.0 (0.9)
Sometimes concepts became clearer as I wrote about them. (n = 75)	32	31	3.0 (1.1)
The web log assignment was not at all valuable to my learning. (n = 75)	35	41	3.0 (1.4)
Writing about class concepts makes me less likely to forget them in the future. (n = 75)	45	23	3.3 (1.1)
Thinking Outside of Class			
It was challenging to apply class concepts to outside situations. (n = 75)	41	33	3.1 (1.1)
I thought of communication outside of class more than I would have if there had been no web log assignment. (n = 73)	58	22	3.5 (1.3)
I enjoyed thinking about communication issues outside of class. (n = 75)	11	57	2.3 (1.0)
I don't like to think about course concepts except during class time. (n = 75)	43	29	3.2 (1.3)
Thinking about the concepts outside of class made me more conscious of my own communication skills. (n = 74)	42	34	3.2 (1.2)

Items were rated on a 5-point, Likert-type scale, with 1 = "Strongly Disagree" and 5 = "Strongly Agree." In this table, "agreement" was interpreted if the response was a 4 or 5; "disagreement" if the response was a 1 or 2. (Those who responded with the 3 point in the center of the scale were interpreted as "neutral.")

structure (technical aspects, logistics), process (perceptions of the assignment), and outcome (perceptions of learning and awareness). This input from students was deemed critical to examining the performance of the assignment itself, to see whether the desired outcomes had been achieved and how to improve the assignment for successive iterations.

Self-report of students' perceived development regarding the learning outcomes was also gathered: Did students think of communication outside of class more than they would have without the assignment? Were students more conscious of their own communication skills because of the reflective experience? Was their awareness of communication concepts as they relate to "the world" increased?

To facilitate data collection, a 2-page paper survey instrument was distributed to students during class, near the end of the semester. Student participation was anonymous and voluntary; 75 of 78 students in the class responded. The project was reviewed by the University of Mississippi Institutional Review Board for the Protection of Human Subjects and awarded exempt status.

The majority of the survey items were attitudinal (23 items rated using a 5-point Likert-type scale). Selected attitudinal items have been presented in Table 1. Two additional items were short-answer format (type of Internet access used and average time spent per blog entry). Students provided additional comments in response to 2 open-ended prompts (suggestions for improving the assignment for subsequent classes, and general comments regarding the assignment). Data were analyzed using the Statistical Package for the Social Sciences (v. 10.0).

ASSESSMENT

Student participation in the assignment provided evidence of achievement of the educational objectives. As stated, this application and observation of class concepts in an external environment was also expected to facilitate the objective of improved communication skills and attitudes. Through self-assessment and reflection

made visible in their blog entries, some students identified areas of communication in which they wished to develop further, such as assertiveness. Others recognized an increased confidence in their skill set, or an increased ability to develop appropriate skills for professional communication.

While students' attitudinal development was difficult to characterize, reflection on class topics and discussions appeared in at least some cases to influence student attitudes in a positive fashion (see student examples included as Appendix 2). Specific attitudinal objectives included increasing empathy and sensitivity in interactions; blog entries made it evident that such development was effected for some students, at least. For some, the exercise may also have increased curiosity about the topics, as evidenced by the consultation of additional resources on subjects about which they wrote. Examples of student entries provide evidence of student development according to the objectives of the assignment and are included in Appendix 2.

As stated, the University of Mississippi School of Pharmacy has a laptop computer requirement; so all students had computing technology available for their individual use. Most students (75%) used a high-speed Internet connection to access their Web logs. The largest proportion of students reported using an Ethernet connection as their primary mode of access (37% versus 25% who used a 56.6k modem, 20% who used cable modem, and 14% who used a digital subscriber line [DSL]). Ethernet connections were available to these students within the School of Pharmacy facilities.

Students did not have many complaints regarding the logistics of the assignment. Most (73%) considered the description provided sufficient and only 1% of the class needed a more detailed manual than the one created by the instructor for the use of the Web log software. Regarding the technology, 74% believed that it "functioned well," and only 3% agreed that web site access was difficult.

While perceptions of the fairness of the evaluation rubric might be subject to performance bias, 58% agreed that the rubric was fair. And 1 in 5 students (21%) believed that the assignment carried too much weight in the overall point structure for the course (10% of final grade). However, students' written comments suggested that perceptions of the assignment could have been improved through the provision of more topic guidance: corroborating this, 58% agreed that they needed more suggestions for blog entries. Most of the respondents indicated that they found it harder to make time for blogging at the end of the semester (85%); the instructor anticipated this, given other end-of-term activities taking place.

Seventy-one percent of the respondents agreed they were able to relate concepts from class to everyday situations through their Web log entries. By self-report, nearly half the class (45%) indicated that writing about class concepts made them less likely to forget those concepts in the future.

Not all students recognized the contribution of this assignment to their learning, however. When asked their level of agreement with the statement "The weblog assignment was not at all valuable to my learning," 41% disagreed. But 19% of the class selected "strongly agree," suggesting that those students saw no value in this exercise. Several of these respondents who saw no value provided negative comments in the open-ended item at the close of the survey instrument, venting that the assignment was "busy work" and that this was "not an important class."

Fifty-eight percent of students agreed that they thought about communication outside of class more than they would have without the assignment; and 42% agreed that this thinking made them more conscious of their own communication skills. Four in 10 students agreed that it was challenging to apply class concepts to outside situations. The instructors were pleased to see that the assignment provided some challenge, as that perception by students may cause more higher-order thinking in the form of analysis and evaluation.

DISCUSSION

In general, most students in the class did an admirable job varying the communication situations about which they wrote. Observations and reflections came from external settings, suggesting that students were directly applying class concepts in the environments in which they found themselves, such as the pharmacy workplace, other pharmacy classes, and everyday life (including relationships, sports, and other leisure activities), thus fulfilling one of the major objectives of the assignment.

Responses were widely varied on this evaluation. All but one of the attitudinal items had responses ranging from 1 ("strongly disagree") to 5 ("strongly agree"). Such a broad range of responses hints at the variety of learning approaches and preferences that were represented in this class of students. Many students were positive, while others were generally negative about the assignment. The only item that did not experience a full range of responses was "I needed a more detailed manual on the use of the weblog software." (No one strongly agreed with that statement, but responses ranged from 1 to 4.)

As determined by anecdotal discussions with students, it seems they are seldom called on to reflect within the context of a course. And yet this assignment

rewarded thoughtful, engaged reflection that was attentive to the student's own learning. This type of "thinking" might be somewhat foreign and perhaps unpleasant for some (a perspective that some of the student responses reflected). However, the instructor believed that having a reflective assignment that requires critical thinking, analysis, and synthesis was a valuable addition to the learning tools used for this class.

Entries into the Web logs often demonstrated sincere thought and/or honest self-reflection, but there were also lackluster entries that suggested some compositions were written only to get credit for maintaining the required frequency. These less thoughtful entries were often made during the last few weeks of the course, when attention may have been diverted from the assignment to other curricular requirements. Indeed, 35% of students indicated on the end-of-semester evaluation that the assignment had no value to their learning. However, it is unknown how many of those students would have indicated the assignment added value to the course if they had been surveyed earlier in the semester. Perhaps blogging has a limited life as a learning tool within a course, given the time it requires in light of the increasing curricular responsibilities students face as a semester progresses. Some students were comfortable with their "writing voice," and adapted well to this assignment. Their first entries were insightful, intelligent, and written with some indication that the practice of reflection was not new to them. Other students had to gain confidence in their "writing voices" over time, becoming more comfortable with the task as they acquired more experience with it.

One serendipitous benefit of the assignment from the perspective of both teaching and learning that emerged was the uncovering of supplemental examples and resources for the class. With permission, and changing the identifying information, communication situations about which students wrote might be valuable illustrations for use in discussions with future classes. Likewise, in the course of investigating an interesting communication concept for a blog topic, some of the more motivated students provided links or quotes or other information that might be useful for future classes.

Limitations

These results of the student evaluation of the assignment should be interpreted with caution for a variety of reasons. Interpretation of attitudes measured through self-report is limited, in that responses may represent bias due to social pressures, time constraints, unrelated situational factors, or a variety of other factors. This evaluation was an attitudinal "snapshot" taken at one point in time (the end of the semester); student attitudes toward this assignment may have fluctuated across the term. In addition, because of the proximity to the end of the semester, student responses may have been influenced by the composite curricular workload at that time (perceived as heavy), and by the pessimism that is sometimes evident in general student evaluations of courses.

Implications for the Future of the Assignment

While student attitudes toward the assignment may vary, instructors nevertheless believe thinking outside the class is important, as it facilitates higher order thought and therefore has implications for a host of broader outcomes in pharmacy education. Therefore, the assignment will be employed again during the next iteration of the course. However, its success may be facilitated by a few changes, interpreted from this first experience.

Evaluation of student performance was time-intensive on the part of the raters (15-20 hours of combined rating time per 4-week evaluation period). Most students thought the rubric was fair, but 1 in 10 did not. This suggests there is room for improvement. Although considerable effort was devoted to the operational descriptions of expectation levels for each criterion in the rubric that was applied, the "creative" aspect of the "content" criterion was perceived by students as difficult to meet. That criterion will be modified to clarify performance expectations. For the next iteration of this assignment, consideration will be given to the shift from a "moderate-stakes" to a "low-stakes" writing assignment (ungraded),[17] or a "check, check-plus, and check-minus" grading system.

Other Applications of Web Logs to Pharmacy Education

The combined functionality and simplicity of Web log provide potential for utility in a host of pharmacy education applications. Portfolios of student work can thus be "collected, edited, and assessed, with the immediacy of publishing for a virtual audience,"[17] which may include instructors, preceptors, or colleagues. Service-learning programs often use reflective journaling,[3,18] for which a Web log is readily applicable. Experiential preceptors who manage a large number of students could use Web logs as a management tool for maintaining a "recorded dialogue" with multiple students, and for sharing information in an online repository available at all hours. Similarly, students participating in nontraditional curricula may benefit from the management efficiencies offered by blogging. Blogs may be used to coordinate student educational and research projects, by enabling each team member (and advisor) to record ideas on a central Web log that is constantly accessible by all members of the team. Organizations and organizational committees could use

the Web log to post minutes and to coordinate activities. Student access to and pervasive use of computer technology make any of these possible.

Each of the above applications may also have implications for faculty members involved in teaching and research activities. Course development and test writing in team-taught courses could be facilitated through this means. Faculty members could use Web logs to maintain a research journal or elements of a teaching portfolio. School-wide committees could benefit from the planning and recording functionality of Web logs. Finally, the potential of Web logs is enhanced by the simplicity of the software needed.

CONCLUSION

While thinking about course concepts and learning them are obviously different actions, it seems evident from this exercise and its evaluation that thinking does facilitate and reinforce learning for a significant number of students. Those who actively participated in the assignment were able to apply what they learned in class, and application of knowledge is expected to create deeper learning and increase retention of course concepts. This reflective self-assessment of communication skills also contributed to further development of that skill set through raising students' awareness of their own communication as well as that of others. A positive influence on the attitudes of many student participants toward communication was an added benefit.

In the case of this course, the return from the weblog assignment was definitely worth the investment of time and energy. And with improvements suggested by the feedback gathered from students (eg, revision of the rubric, provision of additional "bloggable topics," etc), the exercise may prove even more fruitful in future iterations of the course.

ACKNOWLEDGEMENTS

REFERENCES

1. Dawson K, Gleason T, Lakey S, Schwartz C, Tennant T. On becoming group facilitators: identifying communication concerns using qualitative methods. *Am J Pharm Educ.* 2000;64:114S.
2. Lloyd KB, Buring S, Krueger J, et al. Increasing awareness of nontraditional women's health issues through an interactive, innovative women's health elective. *Am J Pharm Educ.* 2002;66:84S.
3. Kearney KR. Students' self-assessment of learning through service-learning. *Am J Pharm Educ.* 2004;68:Article 29.
4. Anderson R, Schiedermayer D. The art of medicine through the humanities: an overview of a one-month humanities elective for fourth year students. *Med Educ.* 2003;37:560-2.
5. Collentine D. Improving critical thinking skills through reflective clinical journals [masters thesis]. Chicago: Saint Xavier University, 2002.
6. Grant E, McKenna L. International clinical placements for undergraduate students. *J Clin Nurs.* 2003;12:529-35.
7. Riley-Doucet C, Wilson S. A three-step method of self-reflection using reflective journal writing. *J Adv Nurs.* 1997;25:964-8.
8. Boud D. Using journal writing to enhance reflective practice. *New Directions Adult Continuing Educ.* 2001;90:9-17.
9. Moon J. *Reflection in Learning and Professional Development: Theory and Practice.* London: Kogan; 1999:189.
10. Angelo TA, Cross KP. *Classroom Assessment Techniques: A Handbook for College Teachers.* Second edition. San Francisco: Jossey Bass; 1993: 263-6.
11. Bransford JD, Brown AL, Cocking RR, eds. *How People Learn: Brain, Mind, Experience, and School.* Washington, DC: National Academy Press; 2000:12;51-3;67-8;140-1.
12. Accreditation Council for Pharmacy Education. Accreditation standards and guidelines for the professional program in Pharmacy leading to the Doctor of Pharmacy degree. Available at http://www.acpe-accredit.org/standards/standards1.asp.
13. American Association of Colleges of Pharmacy, Center for the Advancement of Pharmaceutical Education. 1998 CAPE educational outcomes. Available at http://www.aacp.org/Docs/MainNavigation/ForDeans/5763_CAPEoutcomes.pdf.
14. *Wikipedia: The Free Encyclopedia.* Available at: http://en.wikipedia.org/wiki/Weblog. Accessed July 28, 2004.
15. Ferdig RE, Trammell KD. Content delivery in the "blogosphere". *Technol Horizons Educ.* 2004;31:12;16-20.
16. Holzberg CS. Education web logs. *Technol Learning.* 2003;24:52.
17. Kennedy K. Writing with web logs. *Technol Learning.* 2003;23:11-2;14.
18. Goldsmith S. *Journal Reflection: A Resource Guide for Community Service Leaders and Educators Engaged in Service Learning.* Washington DC: American Alliance for Rights and Responsibilities; 1995: xvi-8.

Appendix 1. Examples of "Bloggable Questions" Intended to Prompt Student Reflection in a Communications Class for Pharmacy Students

How do listening, empathic responding, and trust relate to each other?

What can you do to overcome some of the common personal barriers to communication that were discussed in class?

Most experts agree that listening is a vital communication skill. But realists acknowledge that it is impossible to give equal attention to every message and still accomplish the multitude of tasks that occupy every workday. How can you, as a busy health professional, respond to nonessential messages without alienating the people who deliver them?

Take a 4-minute on-line Listening Self-Assessment (at the URL http://www.highgain.com/SELF/index.php3) and see how well you listen. You will receive a personal profile indicating your level of attention, empathy, respect, response, memory, and open-mindedness. This could be a good tool for enabling self-improvement. Discussion of your results and your thoughts on those results are worthy of a blog entry.

How does silence in conversations make you feel? How do you usually interpret that nonverbal message?

Do you have a difficult time being assertive? If so, what can you identify in yourself that sometimes prevents you from assertive communication? And if you do not have difficulty with assertiveness, why do you believe that some *do* have a difficult time being assertive?

When or where have you observed aggressive communication behavior that would have been much more appropriately expressed as assertive communication?

Have you observed an example of an exchange in which persuasive communication caused more resistance rather than less?

Appendix 2. Selected Examples of Student Web Log ("Blog") Entries Made as Part of a Reflective Journaling Assignment in a Communications Class

Related to Learning Objective: Application of Course Concepts Outside Class

"In the last week, I've been doing some important communication. I have been going to talk to all my teachers and explaining my previous situation [illness], and feverishly (no pun intended) trying to catch up. When talking with teachers, I realized how important being a good, active listener is, and the advantages of it. During some of the meetings I felt like it was a manipulated IHS counseling session, with the teacher and I alternating roles. Sometimes, I was asking what I missed through open-ended questions to help me get all the information I need to catch up. Other times I had to answer to my absence, clarify, and explain what I know like a patient does. Overall, things have gone well. . ."

Related to Learning Objective: Development of Communication Skills Through Self-Assessment

"Today's lecture seemed to really hit home with me. I would certainly consider myself to be a person who has a problem being an assertive communicator. Two areas that seemed to stand out are inviting feedback and setting limits. I sometimes, usually always, have a hard time accepting criticism. Also, I am not one who easily admits my mistakes. I usually am defensive when someone approaches me with a mistake I have made. I seem to behave in this manner no matter how the criticism is presented to me. I have always heard about 'constructive criticism,' but I have never been able to accept it. One could see how this is a problem. I also have a hard time saying 'no.' This can lead to unwanted time strains, as well as unnecessary stress. I realize now that these are important areas of communication that must be overcome in order for me to become a more assertive, effective communicator."

Related to Learning Objective: Positive Influence on Attitudes

"Wow! Last week's lecture on cross-cultural communication was an eye opener for me! I truly did not realize how difficult communicating with those from a different cultural background could be. After M and I volunteered in class, I was amazed at how challenging it was to communicate with someone who does not speak English. It was very difficult! I also felt like we had to trust the interpreter to tell the patient exactly what we were saying. I can honestly say that I have a greater understanding of what communicating with those who speak a different language may be like one day. . .The following website. . .talks about the need for medical professionals to be patient and realize that communicating with others from a different culture is a learning process. It takes time and it is important to keep trying and to learn from your mistakes. http://www.findarticles.com/cf_0/m3045/18_144/ 65541850/p11/article.jhtml?term=cross-cultural +communication"