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Peer Review of Teaching in Web-based Courses in Nursing

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With the explosion of college-level Web-based courses, concern has arisen about the quality of online courses. Peer review of online courses is one method of ensuring that these courses meet the highest standards. Although numerous colleges and universities use peer review for classroom presentations, clinical experiences, and course materials, peer review of an online course may require a different type of expertise. This article describes the process for conducting a peer review of teaching in Web-based courses and explains how documentation of peer review of an online course can be used for faculty development, promotion and tenure decisions, curriculum decisions, and program review.

With the explosion of Web-based courses in nursing, accrediting bodies, students, administrators, faculty, and other stakeholders are concerned about the quality of the courses and the teaching and learning that occur within these courses. Nursing faculty are accustomed to demonstrating the scholarship of teaching and assuring course quality through peer review and accreditation processes, but these mechanisms are yet to be developed and tested for Web-based courses.

Peer review, or the process of colleague evaluation of one's teaching, is a key element of teaching scholarship. According to Glassick,[1] all scholarly work should be guided by reflective critique, which then enhances the quality of subsequent efforts. Peer review of teaching involves identifying norms and values and developing guidelines and procedures for observing the teaching and learning that occurs within the course. Peer review of teaching is situated in a larger context of improvement of curriculum, courses, and faculty teaching, and it must be accompanied by resources for faculty development, mentoring, and modeling of master teaching.

Participating in the American Association for Higher Education's (AAHE) Peer Review Project of the mid-1990s provided the impetus for the School of Nursing at Indiana University–Purdue University at Indianapolis to more systematically make peer review of teaching a norm. At present, the school has a number of opportunities for colleagues to exchange ideas about the work of teaching, and peer review of teaching has become a requirement in personnel decisions, such as those related to promotion and tenure and teaching merit awards. Although there is an assortment of strategies for "making teaching community property"[2] available to faculty members of the School of Nursing, one of the most frequently used is classroom observation. As a result of the AAHE initiative, a process for the classroom visit was developed and approved by the school faculty governing body. Such guidelines have been valuable in both formative or developmental and summative appraisals of the quality of teaching.[3] With the widespread use of Web-based courses and increasing numbers of faculty who are using Web-based collaborative work tools to support teaching and learning in their course, the school needed to adapt these guidelines and procedures for use with Web-based courses. A tool has been developed for peer review of Web-based courses and is currently being piloted (Figure 1). The purposes of this article are to discuss one way to develop guidelines and procedures for conducting peer review of Web-based courses and to explain how these guidelines and procedures can be used at schools of nursing.

Developing Guidelines for Peer Review of Teaching in Web-based Courses

As with other course delivery methods, the purposes of peer reviews of Web-based courses are similar to those of classroom or clinical peer review.[4] This includes a review of the syllabus, course materials, teaching and learning activities, and formative and summative assessment/evaluation strategies. Unlike peer review of classroom or clinical courses, however, reviewers of Web-based courses must also examine the teaching and learning principles used within the course as well as principles of instructional and graphic design. Chickering and Gamson's [5] "Seven Principles for Good Practice in Undergraduate Education" provide a framework for reviewing the use of teaching and learning principles in Web-based courses.

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Seven Principles of Good Practice in Undergraduate Education

Student-faculty Interaction

"Frequent student-faculty contact in and out of class is a most important factor in keeping student motivation and involvement."[6(p1)] How can students enrolled at a distance in a Web-based course have frequent student-faculty contact? Technology can provide even greater opportunities for student-faculty contacts when used appropriately. The collaborative tools used in Web-based courses provide an opportunity for all students to have frequent faculty contact through the course assignments, bulletin boards, chat rooms, and private e-mail. These communications between students and faculty may also occur at a much faster rate with the use of technology [6(p2)] and may allow the students (and faculty) more time to reflect on the responses given.[7] Students who may have been reluctant to ask questions or to seek guidance are often empowered through the use of communication technology. Students and faculty can introduce themselves online and can reveal whatever they choose about their academic backgrounds, interests, and other personal information to get to "know" one another in the electronic environment.[8]

Reviewers can also examine ways faculty use tools within the course to promote interaction. For example, digital cameras can be used to scan photographs of both the faculty and students in the electronic classroom . This allows the distance learner to visualize not only the faculty member, but also other students in the course. In addition, students (or faculty) who may be from a different culture, or who have language difficulties, can take more time to respond to the communication. Using this principle, and given access to the course, the peer reviewer can readily determine the frequency of student-faculty contacts in a Web-based environment. Although the content of private e-mail should remain a private communication between students and faculty, faculty members may choose to share the number of e-mail messages that have been sent and responded to in a particular course.

Rate the following using a scale from 1–5 with 1 being the lowest score and 5 being the highest score.

Course materials

1. Goals or learning outcomes of the course are clearly stated.
2. Goals or learning outcomes are appropriate to the level of the learner.
3. Course guidelines provide a clear indication to students as to their responsibilities in the course.
4. Course guidelines provide a clear indication of how student progress will be evaluated, (e.g., required papers, participation, discussion, or debate).
5. Course guidelines provide a clear indication of how the grades will be assigned, (e.g., standards for papers, quizzes, discussion).

Principles of Good Practice

6. Students have an opportunity to interact with the faculty member, (e.g., asynchronous, synchronous communication, private e-mail, telephone, or fax).
7. Students have an opportunity to interact with each other, (e. g., asynchronous, synchronous communication, private e-mail, telephone, or fax).
8. Students are provided with prompt feedback on assignments.
9. Students are actively involved in the learning process.
10. Students spend a sufficient amount of time in the learning process.
11. The faculty member sets realistic, yet high expectations for all students in the teaching-learning process.
12. The faculty member respects diverse talents and ways of learning, (e.g., a variety of learning experiences are assigned).
13. Students are expected to cooperate with one another on assigned tasks.
14. Students have an opportunity to interact with the faculty member, (e. g., private e-mail, discussion forums, chat sessions, telephone, or office visits [either virtual or real]).

Graphic design principles

15. Web page design is inviting to look at and draws the students_ attention.
16. There is evidence that the principle of proximity is adhered to throughout the course.
17. There is evidence that the principle of contrast is adhered to throughout the course.
18. There is evidence that the principle of alignment is adhered to throughout the course.
19. There is evidence that the principle of repetition is adhered to throughout the course.
20. Fonts are sans serif rather than serif.

Additional comments

Figure 1. Peer review of a Web-based course

The reviewer can also examine the course for evidence of informal interaction between student and faculty. Chat rooms can be used for holding office hours, and a student lounge or "cyber café" may be used as a place for meaningful discussion that may or may not be directly related to the course content.

Collaboration Among Students

Learning occurs during interaction with others, including classmates. Although students in Web-based courses are at a distance from one another, technology can actually increase student-student interaction and collaboration. Here, the reviewer can look for

group assignments, virtual debates, chat rooms, and the use of e-mail, all of which can contribute positively to student learning.[9] Students can also be assigned to critique each other's assignments,[8(p6)] another means to enhance student-student interactions. The peer reviewer can evaluate both the group assignments and the outcomes within the course to evaluate student-student interaction and collaboration.

Active Learning

Tools in Web-based courses can provide even greater opportunities for active learning than are often found in a traditional classroom setting. Peer reviewers can look for examples of simulations, library searches, reflective papers, and other assignments in a Web-based environment that requires active learning. In contrast, a traditional classroom setting might require students to passively sit in a classroom, take copious notes, and memorize content for an exam. The peer reviewer can examine the student assignments and student responses to evaluate whether the course assignments are structured to encourage active learning.

Rich, Rapid Feedback

Compared to a traditional classroom setting, technology allows for not only more frequent feedback, but can also be a quicker method of communicating with students. Through e-mail, bulletin boards, and the use of online "hidden text" comments on a student assignment, rich feedback can be provided in the online environment. Peer reviewers can also look for evidence of the use of classroom assessment techniques.[10] These allow students to show what they have learned and how they have applied it, and give faculty an opportunity to redirect students who are not grasping critical course concepts. A note of caution should be added here, however. As with instant messaging and instant communication through technology, students may expect faculty members to respond to their queries or grade their assignments immediately. In a Web-based course, faculty members need to inform students at the beginning of the course when they will conduct "virtual" or real office hours, and how soon students can expect to have feedback on their assignments. A peer reviewer of a Web-based course may not be able to evaluate the frequency, amount, and length of time it takes for faculty members to provide feedback, because often feedback is given by telephone, private mail messages, or mailed to students. However, peer reviewers may receive this information directly from students.

Time on Task

Students enrolled in Web-based courses are often not required to be physically present on campus, which not only saves the students' time, but the asynchronous learning environment allows the student to enter the course when they are ready to learn within the framework of deadlines given by the faculty member for completion of assignments. Web-based courses require as much time (or more time) as on-campus courses because the students must read and prepare for the assignments, complete the assignments, and are often required to participate in class discussions. Course software can record the length of time of student participation in the course and provide documentation of student time within the course. A peer reviewer of a Web-based course can evaluate whether students are actively engaged and spending time within the course environment, as well as learning outcomes. Students can also indicate the amount of time spent on the course.

High Expectations

Faculty communicate high expectations for achievement through objectives or learning outcomes written at appropriate levels of complexity, as well as by identifying the criteria for evaluation of assignments. Additionally, students can generate the criteria in a collaborative way.[6(p4)] A peer reviewer of a Web-based course can judge whether the criteria were appropriate, communicated effectively, or student-generated, and whether or not the faculty or the students used the criteria appropriately.

Respect for Diversity

Web courses give faculty and students new ways to accommodate students' different talents and ways of learning. Students can be given a wide range of assignments, virtual experiences, and tasks that require analysis and reflection. Students who are exceptional can move through the assignments quickly and go on to higher level assignments, while students who require more time are able to get more feedback from either the faculty member or other students, which help them to learn better and achieve higher goals.[6 (p4)] A peer reviewer of a Web-based course can evaluate the variety of assignments and experiences provided within the course that addresses different learning styles and talents.

Guidelines for Reviewing Instructional Design Principles

In addition to the Principles of Good Practice,[5(p306)] a Web-based course must adhere to basic principles of instructional design. These include such items as a comprehensive course syllabus, information about how to retrieve electronic reference materials, required assignments and assessment strategies, setting realistic and measurable course outcomes or objectives, selecting course activities to meet the course outcomes, clear instructions for all of the assignments, ongoing student assessment throughout the course, and ensuring that the assessment strategies adequately measure the course outcomes or objectives. In addition to these items, the course should have appropriate copyright compliance if outside materials are incorporated into the course.

Guidelines for Reviewing Graphic Design Principles

Because Web-based courses use technology to deliver the courses, it is also important for faculty members who are teaching the course to pay attention to ce graphic design principles. Students may need an orientation to

the specific course software to orient them to how to navigate through the course.[11] Providing the students with an information manual can also ease the stress of learning a new technology. An "inviting" Web design is essential to keep the learners motivated and give them a sense of consistency throughout the course. The course design should include a well-balanced layout with links for the student to be able to "bookmark" where they have stopped, links to "home" or other university services (eg, libraries), clearly marked exits, and instructions about how to ask for help either with the technology or navigation. Each Web page should have a navigation tool or tool bar at the top to guide students. Counters and splashy graphics that may consume a great deal of memory and other miscellaneous clutter should be avoided. If graphics are used, they should pertain to the content of the course to provide visual cues to the learner. If the course uses audio, video, or animation, these elements should be in close proximity to text and should contribute to learning. Students may become frustrated if the Web design requires a great deal of time to download on their computer.

Four graphic design principles should be adhered to in any Web-based course. These principles include: alignment, proximity, repetition, and contrast.[12] *Alignment* refers to pages being lined up in a similar manner. The Web page design should select one type of alignment and use it on the entire page. Attention should be paid to both vertical and horizontal alignment. For students in the United States, the (vertical) course content often proceeds from left to right, because this is what most Americans have become accustomed to. If the designer chooses to center the alignment, all content should be centered. *Proximity* refers to relationships that develop when items are close together. The headline or subhead should be close to items that are related to the topic. *Repetition* involves repeating certain elements that tie the course content together. Examples of repetition include the navigation buttons, color, format, layout and typography.[12(p114)] *Contrast* is the element that draws the individual's eye to the Web page.[12(p118)] and may be provided with the use of color, graphics, font, or focal points.[12(p119)]

Font attributes are also an important consideration. Are the fonts sans serif or serif, which is more difficult to read?[12(p214)] Are non-standard fonts kept to a minimum? Is the font size easy to read and in both upper and lower case? Is the text color appealing and does it contribute to ease of reading? Bold text or italics should be used only for emphasis on a particular concept. Is there plenty of "white space" on the page layout?

Other Web-page design principles that should be evaluated include readability of the materials, correct spelling and grammar, and the avoidance of extraneous information. Lastly, if the target audience for the course speaks a different language, then the course should be provided in that language. A graphic designer who was not part of the design team can be used as a peer reviewer to evaluate Web-course design and layout.

Procedures for Peer Review of Teaching in Web-based Courses

In addition to developing the guidelines discussed above, faculty must also develop procedures for peer review of Web courses. Procedures typically include stating the assumptions and norms that guide the peer review, developing the criteria, defining the course review process, informing the students, selecting the peer reviewers, and suggesting how the findings of the peer review could be used.

Establishing Values and Norms

The first step to success of any peer review process is to have commitment from faculty and administrators that peer review is an important strategy for the development of the scholarship of teaching. In the discussions that must precede adopting a peer review process for Web courses, faculty must decide the purpose of the review, what to review, what data will be collected, and with whom and how the results of the review will be shared.[3(p331)] As with other types of peer reviews, peer reviews of Web-based courses may be done at the invitation of the faculty member teaching the course or may be mandated by the institution.[13]

Developing the Criteria for Peer Review

At the outset, faculty must determine what will be included in the review of Web courses. In addition to course materials and evaluation strategies, faculty must develop review criteria that are appropriate for Web-based courses, such as those described above. A checklist (Figure 1) may help guide the review process and communicate to both the reviewers and the faculty member what elements of teaching and learning in Web-courses are valued and thus the focus for review.

Defining the Course Review Process

Decisions about when to seek peer review must consider the stage of course development as well as the point in the course when the teaching is reviewed. We decided to conduct the review after the course had been developed (and revised!) and taught for one year. This gives faculty the opportunity to test and revise the course design and teaching strategies, but yet provides feedback early enough in the course development process to obtain feedback for course improvement. Delaying the peer review also allowed faculty to present the Web course at national teaching and learning conferences, and to write articles about the development of the course. In this way, the faculty could gain informal peer feedback and evaluation from a national audience before a more formal review from colleagues from the academic setting.[14]

Unlike the peer review of a classroom visit which tends to represent a "moment" in the course, the review of Web-courses can reveal teaching and learning over a longer period of time. Thus, the time for the review should be selected to occur well into the course so that there is an opportunity for the reviewer to observe how the principles of good practice in education[5(p306)] are operationalized in the course.

Informing Students

As with classroom visitation, faculty must inform the student that he or she is seeking peer review of teaching in this Web course. Students in Web courses need to know the purpose of the review, when the review will occur, and what will be reviewed. In traditional courses, the peer reviewer often meets with groups of students in the absence of the professor to discuss the course and evaluate the faculty teaching. In the Web course environment, it is possible to set up a separate online discussion group for students to give feedback to the peer reviewer. Special "chat rooms," which are not recorded, are also available for peer reviewers to meet with students to discuss student learning.

Selecting Peer Reviewers

Reviewers of Web courses may be peers within the discipline or a colleague outside of the discipline who is familiar with principles of teaching and learning in Web-based courses. Peer reviewers for Web courses may also be members of a technological and instructional team who have had experience assisting faculty in developing the course, such as instructional designers, graphic artists, or librarians. These peer reviewers should be different from the individuals who helped to design the original course to prevent subjectivity.

Peer reviewers should be experienced in the review process, and schools of nursing may conduct orientation sessions for reviewers. One way to orient reviewers is to develop a simulation and practice using the review instruments to work toward inter-rater reliability and consistency in using the review process.

In the process used by our faculty, peer evaluations were provided both by a nursing colleague and non-nursing technology and education experts from the university's Center for Research on Learning and Technologies. The nurse expert and evaluators from the Center for Research in Learning and Technology who conducted the peer review of the Web course were given access to the course by receiving a guest identification code and password. The nurse (content) expert reviewed the content of the course, student interactions, assignments, student outcomes, content, active student learning using the approved school of nursing's peer evaluation forms. Peer evaluators from the Center for Research in Learning and Technology focused their review using the principles of good practice framework.[5(p306)] and graphic design principles.

Planning the Peer Review and Follow Up

As with traditional peer review of classroom teaching, review of Web-based courses begins with a meeting between the faculty and the reviewer(s). At this time, the reviewer and faculty established goals for the review and determine how the review will take place. The faculty should provide the reviewer(s) with curricular and course materials if they are not available within the Web course. The faculty member obtained the students' permission to have the peer reviewer read discussions or class assignments, set up a special chat room or bulletin board for the peer reviewer and students, and made available examples of online examinations and assignments that may have been sent by private mail.

After the review, the faculty and reviewer(s) should meet to discuss the findings. The reviewers may make a formal report or use the review instrument as the summary of the review. In the review described here, the reviewers provided the faculty member a comprehensive written report detailing the teaching and learning activities observed within the course and recommendations for future course development. The reviewers also held a conference with the faculty and answered questions and provided additional feedback. As agreed upon at the outset, the entire review was confidential, but the faculty could share the report with colleagues and/or use the report in submitting dossiers for promotion and tenure, merit, or other teaching awards at the university.

Using the Results of Peer Review of Web Courses

Once faculty establish and implement a process for peer review of Web courses, faculty, the course instructional team, and the school of nursing should have access to findings that can then be used for course improvement, program review and improvement, or awards. Regardless of how the results are used, the review process should stimulate ongoing dialogue about the scholarship of teaching[3(p329)] in Web courses as well as provide a mechanism for continuous quality improvement.

The primary use of the findings of peer review of Web courses is for course improvement. Feedback from course review can assist faculty to determine areas for improvement, both in the use of the technology tools and in the design of the course, and the teaching strategies and learning activities within the course. Findings may also be helpful to technology and instructional team members who are providing support for course development and implementation.

Web-course review standards can also be used prospectively in curricular review of courses. Many schools of nursing have course approval processes within the curriculum committee that require approval of new courses and/or new use of technology to support the course. Using the standards for Web course design and implementation can serve as quality assurance in the development and subsequent offering of Web courses. Peer reviewers from other courses are able to learn more about courses within the curriculum.[3(p330)]

Peer review of teaching, including peer review of teaching in Web courses, is only one element in a larger effort to assure educational program excellence. The peer review of Web courses, therefore, can also be used in the aggregate to identify areas of educational program improvement. Additionally, data collected during peer review, if available for public use, can be shared with stakeholders such as prospective students, college or university administrators, and accrediting agencies as evidence of quality teaching and course design in Web courses.

The results of the course review can also be used for the faculty's own professional development. Findings should suggest areas where additional developmental activities would help the faculty member develop his or her scholarship of teaching. Faculty can also include the course Web site and reflections about developing and/or teaching a Web-based course in a teaching portfolio.[3(p329)]

Peer review of teaching in Web courses is situated in the larger context of faculty rewards and recognition, and needs for peer review are often, in fact, driven by promotion and tenure committees[15] who are increasingly interested in evidence of excellence in teaching. The findings from peer review of teaching in Web courses, therefore, will serve faculty members who are seeking promotion or tenure. Additionally, evidence of peer review can be used as faculty submit dossiers for school, university, and national teaching awards.

The peer review process and standards developed at a school level can be used to shape the larger external culture of the campus and the profession in relation to understanding what developing and teaching high quality Web-based courses entails. These criteria can be shared with external peer reviewers of teaching dossiers, who might otherwise not have at their disposal a set of guidelines by which teaching excellence in Web courses could be judged.

Summary

In summary, peer review of a Web-based course requires a commitment on the part of the faculty, the peer reviewers, and the administration. The final report should be comprehensive and should incorporate many more aspects than a review of a classroom or clinical instruction session. The findings can be used to determine areas for improvement in the use of the technology tools, the design of the course, and the teaching strategies and learning activities within the course. Findings may also be helpful to technology and instructional team members who are providing course support.

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