

INTEGRATING WEB BASED LEARNING AND INSTRUCTION INTO A GRADUATE MUSIC EDUCATION RESEARCH COURSE: AN EXPLORATORY STUDY

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The purpose of this study was to develop and evaluate Web based components for a graduate music education research course. The first phase of the study began with development of two types of Web based materials for a music education research seminar. On the basis of student outcomes, student comments, and a generalized impression of the course, this instructor believes that the Web based components of this course were successful with higher student test scores resulting from Web based portions of the course in comparison with the more traditional instructional units. The second phase of the study was carried out with 12 graduate music education students enrolled in a similar music education research course at a different university. Student and instructor recommendations from Phase I resulted in certain modifications to the instructional procedures used in Phase II. To compensate for the lack of communication during the web lessons that was cited as a problem during Phase I, e-mail communication with the instructor was emphasized during Phase II. Unlike the first course, in which Web based and on-campus instruction were blocked in relatively large units, the calendar for Phase II was designed with Web based and traditional instruction alternating throughout the course. Data from the second phase of the study generally support the findings from Phase I. However, with this larger group of students, greater diversity in the degree of Web use was observed.

Web based Learning and Instruction (WBLI) holds many advantages for learners, particularly adult learners who must balance school with professional and home responsibilities (Brown, 2000; Keating & Hargitai, 1999; O'Leary, 2000). In a study conducted at the University of Central Florida, adult students identified the following benefits of WBLI (Hudson, 2000):

1. Ease of communicating helps students to interact with online classmates and to develop even closer relationships than they would with "live" classmates.
2. WBLI courses provide opportunities to search the Web and master computer skills that are essential in today's world.
3. WBLI enables students to communicate with other students and their instructors at any time throughout the day, making it easier to share information and ask questions.
4. The flexibility of WBLI allows adult students to continue to meet family and job responsibilities while pursuing an education.
5. WBLI helps students to develop self-sufficiency and to engage in independent thinking and research.

Reduced costs, accessibility, flexibility, and improved technological capabilities have resulted in an increasing interest in WBLI among higher education institutions and faculty (e.g., Bonk & Dennen, 1999; Brown, 2000; Childers & Berner, 2000; deVerneil & Berge, 2000; Shave, 1998; White, 2000).

Research indicates that both undergraduate and graduate students hold generally favorable attitudes about WBLI (Angulo & Bruce, 1999; El-Tigi, 2000). However, students still have many misgivings about taking a course entirely through the Internet (Angulo & Bruce, 1999).

Implementation of WBLI certainly takes many forms. Shave (1998) described four models of using the Internet for course delivery.

1. *Informational (Level 1)*. The Internet provides relevant course information such as syllabi, calendars, and announcements.
2. *Supplementary (Level 2)*. Other resources are included in addition to informational materials such as additional references and practice materials. Supplementary materials are not required for the course, but may enhance the learning.
3. *Dependent (Level 3)*. Students must use the Internet to access major course components. This level includes additional materials beyond the Informational and Supplementary levels.
4. *Fully Online (level 4)*. The entire course, including materials and activities, is on the Internet.

In a similar vein, Reeves and Dehoney's (1998) ongoing qualitative study of faculty use of the Internet at the University of Georgia identified six functions: (a) course management, (b) instructional text, (c) instructional graphics, (d) Internet resources, (e) software, and (f) communication.

Research indicates that WBLI can be as effective as traditional instruction in terms of student test performance (Germain, Jacobson, & Kaczor, 2000; Teeter, 1997). McCollum's (1997) study of a college statistics class indicated significantly higher midterm and final exam scores for students participating in an online version of the course in comparison with students in a traditional classroom version of the course.

Duchastel (1996-97), however, points out that merely using the Web to support a traditional model of university instruction fails to tap into the full potential of WBLI. A six-point model of WBLI is proposed that (a) specifies goals, (b) accepts diverse outcomes, (c) requests knowledge production, (d) evaluates at task level, (e) builds learning teams, and (f) encourages global communities.

Exclusive use of WBLI in lieu of traditional instruction may make it difficult to cultivate a "community of scholars." A case study of an online graduate course revealed that students perceived a lack of interactivity between students and their instructor and that the "graduate school experience" was diminished for some participants (Baylen & Tyler, 1998). Simi-

lar findings were reported in Donaldson and Thomson's (1999) study of undergraduate college students' communication preferences.

WBLI is a complex process involving a number of interrelated needs, concerns, and expectations on the part of both the learner and the instructor. Because of this complexity, qualitative approaches are recommended for WBLI evaluation (Baylen & Tyler, 1998; Michalski, 2000; Reeves & Dehoney, 1998).

The purpose of this study was to develop and evaluate Web based components for a graduate music education research course. Qualitative methodology was employed in this exploratory action research project. Using different data sources and/or different data collection techniques in qualitative research helps to insure dependability of results, a process sometimes called *triangulation* (Bogdan & Biklen, 1998). Data sources in the present study included student interviews, written student course evaluation narratives, numerical student course evaluations, student tests and products, and my (the instructor/researcher's) field notes and journal entries.

Phase I

The first phase of the study began with development of two types of Web based materials for a music education research seminar: (a) materials to supplement traditional classroom instruction, such as the course syllabus and calendar, links to useful Web sites, and review questions with sample responses; and (b) materials to be used in lieu of traditional on-campus classroom instruction (i.e., "virtual lectures" with links to Java applets and gif formatted images illustrating various course topics, and practice quizzes over each unit of material). This was a small scale exploratory study with relatively modest integration of Web based components within the context of the course. The course calendar consisted of approximately 65% traditional classroom instruction with Web based supplements (students attending classes on campus with access to additional readings and materials online) and 35% Web based instruction (students participating in Web based lessons off-campus). Four graduate music education students enrolled in a summer research seminar participated in this phase of the study.

Data sources included my journals and field notes, student products (quizzes and other assignments) and an anonymous course evaluation form which students downloaded from the course Website and returned in addressed postage-paid envelopes that were distributed on the last day of class.

Findings from the first phase of the study indicated that students found the combination of Web based classes with traditional classroom instruction motivating and effective with all students rating the Web based lessons as "extremely effective" on the evaluation form. Open-ended items on the evaluation form included:

What were the greatest strengths of the Web lessons?

"I could study whenever I want and spend as much time as I want reading and taking notes." "I could learn at my own pace."

What were the greatest weakness of the Web Lessons?

“Lack of interaction.” “Couldn’t ask questions.”

Please describe any ways that the Web Lessons could be made more effective.

“Putting only the material that we should know on the Web or having an outline for reading. Sometimes I got too deep into the material, because I couldn’t figure out what exactly I was supposed to read.”

Do you have any other suggestions or comments regarding the Web Lessons? If so, please elaborate.

“I don’t know if it would work, but I think it would be good to have 40/60 proportion of Web to classroom lessons. On Web we can read about types of research, and other things, and in class could do math and address the questions. It would be good to have the schedule when we switch from the classroom to Web and back every other or couple days.”

While they appreciated the convenience of the Web based lessons, the students indicated reservations about taking a course in which 100% of the classes would be Web based. The course calendar was arranged with the block of Web based classes sandwiched between two blocks of traditional on-campus classes. The students and I found this arrangement to be effective. However, some students also suggested alternating Web based and traditional instruction throughout the course and increasing the proportion of Web based lessons. Examination of student test responses and other products indicated high levels of content mastery under both instructional conditions.

Phase II

The second phase of the study was carried out with twelve graduate music education students enrolled in a similar music education research course at a different university. Web based materials developed in the first phase of the study were refined and were incorporated into the second course. Student recommendations and my own reflective journal and field notes from Phase I resulted in certain modifications to the instructional procedures used in Phase II. In order to compensate for the lack of communication during the Web lessons, cited as a problem during Phase I, the emphasis upon e-mail communication was increased. I made a point of e-mailing students frequently and encouraging students to e-mail their questions, comments, and concerns to me. Unlike the first course, in which Web based and on campus instruction were blocked in relatively large units, the calendar for Phase II was designed with Web based and traditional instruction alternating throughout the course.

Data sources included my journals and field notes, student products (quizzes and other assignments) and an anonymous course evaluation form which was completed during the last class meeting, collected by a student monitor and returned to the instructor.

Data from the second phase of the study support the findings from Phase I. Students found the incorporation of Web based course components both useful and motivating. Most students found the increased use of e-mail communication helpful. The only exception was one student who explained, "If I had e-mail at home, it would have been [useful] but since I don't it was an extra step to e-mail assignments." As in Phase I, these students expressed generally favorable attitudes toward the Web based components of the course: "It provides a lot of interesting and useful URLs and it saves time. . . ." "Yes [the Web site was helpful]. . . . I've never been in a class that tried to do this." "Yes. I can find a lot of information." Nine students reported fairly extensive use of the Web site, exploring links for additional reading and information on course topics. However, with this larger group of students, greater diversity in the degree of Web use was observed with three students indicating that they only used the Web site to meet specific assignments: "I did not use it unless assigned."

Discussion and Conclusions

Results of this study are consistent with El-Tigi's (2000) survey of 142 students, finding that students held generally positive attitudes about their course Web site and that course Web sites were perceived to save time, provide 24-hour accessibility to resources, facilitate course preparation, and provide for increased understanding of class expectations and objectives. These students responded to WBLI in much the same manner as the graduate students in Angulo and Bruce's (1999) study: Despite generally positive attitudes, they held misgivings about taking a completely Web based course.

Both student data and my field notes and journals indicate that WBLI was as effective as traditional classroom instruction. The conclusion that WBLI is appropriate and effective for a graduate music education research course is consistent with the high level of satisfaction reported in Baxter and Miller's (1998) survey of faculty with experience teaching graduate courses via the Internet. Unfortunately, with only a 38% return rate, the generalizability of Baxter and Miller's findings is questionable.

The ongoing process of developing and testing the relatively modest Web based materials described in this paper required many more hours than I had anticipated at the outset of the study. My experience in this study was consistent with other research indicating that developing and maintaining course Web sites is extremely time consuming (Baylen & Tyler, 1998; Teeter, 1997). While WBLI holds much promise as an instructional tool, issues concerning faculty workload and credit continue to present challenges. A report by the Web Policy Committee at the University of Oregon (Bothun, Brownmiller, Felsing, Fickas, Haller, Johnson, Stirling, Sauver, & Watson, 1995) pointed out the importance of providing faculty incentives for development of WBLI materials and recommended that administration develop

an explicit policy regarding tenure related credit and/or consideration for merit based pay increases.

It is important to note that this study was conducted with graduate students, learners who generally were highly motivated and had well-developed study skills. It is likely that a modified approach would be required to achieve similar success with less sophisticated learners. For example, a recent study of undergraduate students revealed a lack of motivation to use course Web sites without some specific incentive such as an assignment or course requirement (El-Tigi, 2000). In contrast, Teeter (1997) found that students in an online education course had higher motivation than students in a traditional classroom course.

According to Baylen and Tyler (1998), "The Web can become a static learning environment if interaction is not occurring between the learner, content, instructor, or technology" (p. 10). The WBLI in the present study used informational and supplemental materials and, in some cases, even utilized Web dependent materials (Shave, 1998). While effective, however, these materials failed to tap into the full potential of WBLI. Students enjoyed having ready access to the instructor via e-mail, but while some informal student collaboration did occur, communication and collaboration among students was not supported by this course. Future versions of this course should allow for more student communication and collaboration so that a true online learning community develops (Dial-Driver & Sesso, 2000; Donaldson & Thomson, 1999; Hudson, 2000).

Results of this study indicate that Web based components can provide a useful supplement to traditional classroom instruction and in some situations, can serve as a valid substitute for traditional on-campus instruction in graduate music education research courses. This exploratory study was field based and quite small in scope, and should not be generalized to other situations. More research is needed to explore fully the implications of WBLI for higher education.

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