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MUSIC AND NONMUSIC MAJORS' PERCEPTIONS OF COURSE WEB SITES AFTER PARTICIPATION IN A COMPUTER MANAGED FIELD EXPERIENCE

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Ninety-four students enrolled in a one-semester community based service learning course in a large university participated in the study during the spring, summer, and fall semesters of 2004 and the fall semester of 2005. Students in an Arts in Medicine Service (AIMS) course volunteered individually on a weekly basis to engage patients in a local general medical hospital through direct contact with music and arts projects. The course was managed by a Web site in lieu of weekly class meetings. The Web site included a syllabus, a semester calendar with weekly updates of pertinent announcements and assignments, and a resource page with many links to Internet sites for project suggestions and to instructor designed course management tools, including an online form for submitting weekly reports. Students' evaluative ratings of the AIMS Web site were positive and not related to the amount of course Web site experience prior to participation in AIMS. Students' enthusiasm for course Web sites in general was high but significantly lower than their course-specific evaluative rating. Perceptions of general enthusiasm were not related to the amount of previous experience with course Web sites. Nonmusic majors' perceptions of general enthusiasm, however, were significantly higher compared to music majors. Students' perceptions about the functions of course Web sites were consistent with generally accepted intended purposes, such as providing helpful resources, saving students' time, promoting independence, and enhancing class instruction. Almost all of the efficacy perceptions were not related to academic major or amount of course Web site experience. The course Web site design and applications coupled with students' positive evaluation of its implementation provides a model for computer based management of field experiences such as community-based pre-service music education observation and participation courses.

In a relatively short period of time several changes have affected course offerings in higher education. College students' use of computers increased from 54% to 85% during the 1993- 2003 decade (National Center of Education Statistics, 2006). In 2005 64% of US college campuses reported having strategic plans for wireless networks, up from 24% in 2001 (Green, 2005). During this time instructors designed diverse computer applications (Twigg, 2003) ranging from non-interactive Web enhanced courses that primarily supplement traditional face-to-face courses (Ballard, Stapleton, & Carroll, 2004) to fully online courses that provide all information, communication, interaction, and assessment only through computer access. (For purposes of this discussion one term "computer-enhanced" will include the entire range of possibilities of technological applications in university courses.) As a result of increases in computer usage, accessibility, and instructional applications, it is obvious that current students have many options for selecting computer-enhanced courses. What may be less obvious, however, is

whether the presence (or absence) of technological applications is an important variable in students' selections of specific courses or degree programs. Examining the relationship between students' participation in computer-enhanced courses and their perceptions of usefulness, enjoyment, and self-efficacy might provide practical information for music educators designing similar experiences.

Research suggests *general* computer use may be related to perceptions of usefulness and enjoyment of using computers. A meta-analysis of studies examining characteristics of computer users, systems, and amount of use indicated that the amount of usage related positively to perceptions of ease of use and perceptions of usefulness (Mahmood, Hall, Swanberg, & Leonard, 2001). The effect of professional levels, educational levels, and computer training levels on computer usage was positive but the magnitude of the effect was lower than users' perceptions of usefulness. Zhang (2002) compared industrial employees' and college students' self-reports of enjoyment, anxiety, attitudes of usefulness, and perceptions of self-efficacy related to using the Internet. Employees reported less anxiety and more self-efficacy than college students. Employees also reported more enjoyable Internet experiences and felt the Internet was more useful compared to college students' responses. Although instructional applications were not isolated for comparisons in either of these studies, the results suggest that college students' perceptions regarding general usage may affect their preference for computer-enhanced courses.

Experience-based perceptions of self-efficacy also might affect students' choices. Osika and Sharp (2002) found that most students perceived themselves as lacking computer skills required for fully online courses, but a study by Jenkins and Down (2003) indicated that participation in a single online course positively affected perceptions of competency. Comparisons of graduate students enrolled in either an online or traditional format of a graduate level education core course indicated that at the end of the course students in the online format rated online courses more positively than students in the traditional course format. The researchers isolated the students' interpersonal qualities as measured by the Catell Sixteen Personality Factor Questionnaire and found the groups to be highly similar, thus strengthening the positive effect of participation. Research with undergraduate students, however, suggests that personal characteristics may be more important than participation. Results of a study by Concannon, Flynn, and Campbell (2005) indicate that undergraduate students' success in computer-enhanced courses was related to self reports of study habits and career plans In fact, in-depth analyses of relationships between students' self-regulation and learning styles and their ability to use inherently different types of computer managed instructional tools suggest that predicting success and positive perceptions in any computer-enhanced course is very complex and only remotely related to availability, access, and student participation (Dabbagh & Kitsantas, 2005; Drennan & Kennedy, 2005).

Most aspects of traditional lecture-type courses such as information presentation, communication, and assessment are easily adaptable to technological applications. Music theory courses, for example, were among the first in music curricula to require computer access (Hullfish, 1972; Pembrook, 1986). Instructors and students, however, might place different values on specific computer applications. Frey, Faul, and Yankelov (2003) found that applications used most frequently by instructors in traditional courses were not necessarily the applications most valued by the students. Traditional courses other than lecture based, particularly those with practical components such as labs, simulations, collaborative project development, and field experiences, present additional challenges. Newby and Fisher (2000) evaluated students' perceptions of a computing course's lab experience. Not surprisingly, students' attitudes were related to their success but the more relevant finding indicated that reported enjoyment of the lab experience was strongly related to perceptions of usefulness of computers, similar to the earlier reported finding regarding general computer use by Zhang (2002). A more recent experience based attitudinal study (Thomas & MacGregor, 2005) illustrates this effect. High and low achievers in both synchronous and asynchronous online group projects exhibited different socio-emotional and task related behaviors as measured primarily by content analysis of online interactions during project development. At the conclusion of the study, however, all participants, regardless of achievement, behavior observations, or group placement, reported favoring face-to-face meetings. They perceived online methods functioning as possible support for offline traditional group project development. These studies illustrate the participation affect on perceptions of computer-enhanced courses that probably impact students' future selections.

Although most music curricula include music technology courses (e.g., Hagen, 2001) consistent with National Association for Schools of Music standards, few music education programs offer computer-enhanced core courses (Price & Pan, 2002). A survey of music education undergraduates (Barry, 2003) revealed positive attitudes about technology in general even with the apparent void of computer-enhanced required courses at that time. Innovative applications of technology in music education, such as managing listservs of music education mentors for graduate students (Bush, 2001) and providing online music education methods course resources and quizzes (Bauer, 2001), received positive evaluations by participants and supports the design of other computer applications in music education. A practical component in the music education curricula that lends itself to technological applications from an instructor's perspective is the management of pre-internship field experiences. Students observe or teach music in classroom settings usually on a weekly basis and submit documentation to instructors for evaluation. In some programs, the experience is offered as a single course. In other programs, the field experience may be an extensive assignment in a core course. A search for studies related specifically to computer-enhanced field experiences or community based practica in mu-

sic education was unsuccessful. Issues raised in the previous review, however, are relevant. Can instructor-selected computer applications designed to expedite the management and evaluation of field experiences in a course similar to music education practica function as intended for students? After completing a computer managed field experience, are students' general perceptions about computer-enhanced courses more or less positive than perceptions about the specific course Web site? Are post-participation perceptions of students with more previous computer-enhanced course experience different from those of inexperienced students? The career plan, or professional interest variable (Concannon, Flynn, & Campbell, 2005) is also included by comparing music and nonmusic majors' post-participation perceptions. This article describes a computer managed field experience model for music education practica and provides the results of analyses of music and nonmusic majors' perceptions about computer-enhanced courses, and course Web sites in particular, after a semester of participation.

Computer Managed Field Experience

Arts in Medicine Service (AIMS) is a service learning course offered by the College of Music as an elective for all undergraduate and graduate students in all areas of the university, including music students in all degree programs. Service learning courses, in general, are offered by universities to encourage and promote student involvement in local civic service projects. The AIMS course, in particular, provides volunteer opportunities in a general medical hospital's Arts in Medicine (AIM) program. The credit is variable from 1 to 3 credits and each hour of academic credit requires 2 hours per week of volunteer service at the hospital. Examples of AIMS projects include music performances throughout the hospital, art projects, puppetry, and recreational games. Projects are selected in accordance with students' talents, interpersonal skills, and preferences.

Course Requirements

The most relevant similarity between AIMS and a music education practicum course is the out-of-the-classroom learning experience dependent upon students' self-initiative, independence, and resourcefulness. Other similarities include accountability for time spent and assertiveness in relatively unfamiliar situations. After attending two orientation sessions at the hospital devoted to clearance procedures, protocol instruction, and project demonstrations, students volunteer individually on a weekly basis to entertain and engage patients and their family members with direct contact in arts projects. After the orientation sessions students access the course Web site which becomes the primary means of communication between the instructor and students for the remainder of the semester. The computer managed site is available on BlackBoard and Web-MC platforms and is designed to function as a management tool for assisting a diverse group of individuals through self-directed learning experiences. Student expectations include

accessing the Web site on a regular basis to obtain the latest updates, usually posted on a weekly basis. There is not a regular class meeting. The "classroom" is the hospital and the management of the course is completely online. Individual and small group problem-solving conferences with the AIMS course instructor or the AIM program director at the hospital are offered throughout the semester but very few students use this option. Each student maintains an individually based weekly schedule at the hospital. Although some students volunteer as partners, the majority of students interact alone with patients in the pediatric unit and the adult oncology, cardiac, and diabetes units.

The course Web site contains a syllabus, a semester calendar with links to weekly announcements and assignments, and a resource page with links to related Internet sites for project suggestions and instructor designed course management information links including an online form for submitting reports. At the end of each week each student submits an online report articulating personal experiences and reflections. The instructor, after reading a submitted report, provides verification of receipt of the report with feedback via a link on the Web site resource page. In addition to the weekly online report, each student completes an extensive on-site paper-pencil form signed by a unit nurse or staff member to document the time and AIMS projects after each daily visit. At the end of the semester each student submits an extensive final essay answering several open-ended questions about their experience tracing changes in interpersonal skills and resourcefulness.

Method

Students' Perceptions

AIMS students ($N = 94$) enrolled during the spring, summer, and fall semesters of 2004 and the fall semester of 2005 completed several off-line evaluations at the end of the semester. One evaluation included an instructor designed questionnaire eliciting perceptions of course Web sites. Students were asked to estimate the number of courses with Web sites they had completed prior to the AIMS course, to specify the subject matter of those courses, and to indicate the technological applications included in the course Web site(s). They were then asked to rate on a 7 point Likert-type scale (a) the overall quality of the AIMS course Web site and (b) their level of enthusiasm about course Web sites in general.

The second evaluation listed 13 thirteen statements using a 5 point response scale of agreement from strongly disagree, disagree, neutral, agree, strongly agree. The majority of the statements were taken directly from open-ended written comments from previous semester of AIMS students when asked about positive and negative aspects of courses with and without Web sites. Other statements were derived from the literature pertaining to the intended functions of course Web sites. It is important to note that the descriptive statements were general and did not contain any words pertain-

ing to the specific AIMS course. Seven statements referred to course Web sites and 6 were related to courses without Web sites. Only two factors, time and independence, had parallel statements in both sets of questions. Students marked a response that corresponded to their level of agreement with the statement.

Results

Demographic information indicated that a large majority of the 94 students were upper class women. A slight majority were nonmusic majors. Nonmusic majors reported only slightly more experience with course Web sites compared to music majors (Table 1).

Table 1

Students' Majors and Level of Experience with Courses with Web Sites

	Music ($N = 41$)	Nonmusic ($N = 53$)
Course Web Site Experience		
No previous course	12	13
1 - 2 courses	18	18
3 or more courses	11	22
Gender		
Male	9	10
Female	32	43
Class		
Fr – Soph	13	18
Jun – Sen - Grad	28	35

Ratings

The group mean rating of the "overall quality of the AIMS course Web site" was 6.14 ($SD = .79$), a relatively high positive responses on a Likert-type scale ranging from 1 (poor) to 7 (excellent). The group mean rating of the "level of enthusiasm about course Web sites in general," was 5.80 ($SD = 1.08$) on a 1 (low) to 7 (high) scale and significantly lower than the course-specific rating ($Z = 2.88, p = .004$). A breakdown of the two ratings grouped by major and course Web site experience (Table 2) suggests music majors' ratings, regardless of experience, were higher for the course-specific AIMS Web site and lower for course Web sites in general compared to the nonmusic major group ratings. In fact, the lowest score of all was the most experienced music majors' general enthusiasm rating. Nonmusic majors' scores were relatively high and similar for both course-specific and general enthusiasm ratings. The more experienced nonmusic majors reported the lowest scores for both ratings. Results of a 2 x 3 ANOVA revealed only one sig-

Table 2

Mean Ratings by Academic Major and Level of Experience with Course Web Sites

Group		Course–Specific			General	
	N	*M*	*SD*		*M*	*SD*
Music	41	6.27	.74		5.56*	1.23
No previous courses	12	6.25	.96		5.83	1.03
1 – 2 courses	18	6.28	.57		5.61	.78
3 or more courses	11	6.27	.78		5.18	1.88
Nonmusic	53	6.04	.83		6.00*	.92
No previous courses	13	6.15	.55		6.08	.76
1-2 courses	18	6.22	.81		6.06	.87
3 or more courses	22	5.82	.96		5.91	1.05

*$p = .042$

nificant difference. Music majors' general enthusiasm score was significantly lower than the nonmusic majors general enthusiasm score, F (93, 1 = 4.269, p = .042. The correlation between course-specific and general enthusiasm ratings of all 94 students was low positive (r =.305, p = .003).

Questionnaire

Course Web site efficacy questionnaire results are provided in Table 3 and are presented in the exact wording provided to the students. Seven statements were headed by the phrase, "A course Web site" and followed by suggested descriptive phrases to end the sentence. Mean levels of agreement with these statements about the general usefulness of course Web sites are listed in rank order according to highest level of agreement for courses with Web sites. The statement suggesting course Web sites provide helpful resources received the highest level of agreement, followed by statements suggesting course Web sites save time, promote independence, help students learn objectives, and enhance instruction. Less agreement occurred with a general statement suggesting a course Web site is an academic necessity. Responses to the statement that a course Web site promotes peer tutoring were neutral.

Six statements were headed by the phrase "Compared to courses with Web sites, courses without Web sites" and followed by specific suggestions to end the sentence. Students mildly disagreed with the statement about courses without Web sites producing poorer quality of student work. Students were neutral about courses without Web site being less enjoyable, promoting student honesty, taking more time to complete assignments, and being less organized. They mildly agreed with the statement that compared to courses with Web sites, courses without Web sites promote dependence upon instructors.

Kruskal Wallis analyses comparing responses grouped by levels of experience with course Web sites resulted in highly similar responses for 11 of the 13 statements. Students with no course Web site experience before AIMS indicated similar perceptions about course Web sites in general as students with previous experience. Two statements indicating some difference between groups contained suggestions about courses without Web sites. Responses of students with no computer course experience prior to AIMS and students having prior computer experience with 3 or more courses approached disagreement with the statement suggesting courses without Web sites promoted poorer quality of student work. Responses of students with experience with 1 or 2 courses prior to AIMS approached neutrality (Table 4). The moderately experienced group's response was significantly different from the similar responses of the other two groups. A similar pattern was revealed with responses to the statement about courses without Web sites promoting dependence upon instructors. Students with least and most experience were neutral while students with moderate experience approached agreement with the statement.

Table 3

Mean Agreement Response to Statements of All Participants (N = 94)

Statement	*M*	*SD*
A course Web site . . .		
Provides helpful resources	4.57	.56
Saves students' time	4.41	.75
Promotes students' independence	4.39	.68
Enhances class instruction	4.34	.65
Helps students learn objectives	4.32	.68
Is an academic necessity	3.84	.92
Promotes peer tutoring	3.35	.80
Compared to courses with Web sites, courses without Web sites . . .		
Produce poorer quality of student work	2.66	.88
Are less enjoyable	3.02	.90
Promote student honesty	3.03	.80
Take more time to complete assignments	3.18	1.00
Are not as well organized	3.21	1.05
Promote dependence upon instructors	3.46	1.01

Note. 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strong agree.

Table 4

Responses to Statements about Courses without Web Sites Grouped by Level of Experience with Web Sites

Statement	No Previous M	No Previous SD	1-2 Courses M	1-2 Courses SD	3 or more M	3 or more SD
Courses without Web sites produce poorer quality of student work	2.64	1.07	2.92	.87	2.38	.61[a]
Promote dependence upon instructors	3.16	1.02	3.81	.95	3.30	.98[b]

Note. 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree.
[a] $\chi^2 = 7.135$, $p = .028$, [b] $\chi^2 = 7.287$, $p = .026$

Kruskal Wallis analyses comparing music and nonmusic major groups' responses to each of the 13 statements revealed highly similar responses for 10 of the 13 statements, indicating no effect of students' professional interest on perceptions. The only significant differences between groups occurred with statements about a course Web site enhancing instruction, saving students' time, and being an academic necessity. Nonmusic majors' agreement responses were higher compared to music majors' responses (Table 5).

Discussion

Results of the present study, even with the relatively small number of participants, are consistent with previous research suggesting positive attitudes about computer assisted courses are related to perceptions of usefulness and ease of use, and not necessarily the level of experience. Although results may not be generalized to other types of course Web sites, the AIMS Web site was rated positively by all students regardless of academic major or experience with course Web sites. The high positive rating suggests that the AIMS Web site was successful for novice, moderately experienced and experienced course Web site users. It apparently functioned as intended regarding weekly presentation of information, communication, and assess-

Table 5

Music and Nonmusic Majors' Responses to Statements about Courses with Web Sites

Statement	Music		Nonmusic	
	M	SD	M	SD
A course Web site . . .				
Enhances class instruction	4.20	.64	4.45	.64[a]
Saves students' time	4.17	.89	4.60	.57[b]
Is an academic necessity	3.51	.95	4.09	.81[c]

Note. 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree.

[a] $\chi^2 = 3.979, p = .046$, [b] $\chi^2 = 6.252, p = .012$, [c] $\chi^2 = 8.870, p = .003$

ment for a group of students independently engaged in a volunteer program at a local hospital. Successful management of field experiences, particularly within a highly individualized format, was facilitated by a Web site devoted to structuring and evaluating student involvement. In lieu of weekly meetings with class discussions, information synthesized from student online responses was updated and presented online for individual students, small groups of students, and the entire group depending on the circumstance. Computer managed-based practicum management of courses can provide music educators with an alternative for individualizing community-based curriculum requirements. With very few modifications, the course structure and Web site could serve as a model for any individualized music education field-based learning experience, particularly pre-service early observation and participation requirements.

Web-based practicum management provided students with a unique exposure to computer based learning compared to traditional computer assisted courses which, in turn, may have affected students' ratings. For example, the main portion of students' time in this Web based practicum course was spent in human interaction in the community setting. Students' reports indicate that these personal encounters were challenging and very enjoyable for most of the students. The higher more positive course-specific rating of the AIMS Web site may be a generalized response from the actual

field based experiences. Another equally important related difference was the very small portion of students' time spent "on the computer" for accessing information, reporting results, and submitting online assignments communications compared to more traditional computer-enhanced courses. The relatively minimal computer time may have enabled some inexperienced students, who for whatever reason may have avoided computer assisted courses in the past, to learn to use computers effectively. Enthusiastic experienced computer users incorporated the Web based requirements into their schedule without difficulty or hesitation and often expressed appreciation for the Web site's simplicity.

Generally speaking, college students' perceptions of the efficacy of course Web sites were positive and consistent with educators' purposes for including them in courses– providing helpful resources, saving students' time, and enhancing class instruction. For this particular study, exposure to the AIMS course Web site provided inexperienced students with at least one reality based example for responding to the general questions regarding the usefulness of computers as educational tools. The exposure provided experienced students with a common format to include with other course Web site experiences before responding to the questionnaire's general statements. Although there may have been an unintentional positive bias in the phrasing of the statements regarding courses with Web sites, responses to identical questions by the music and nonmusic students indicate that nonmusic majors' level of general enthusiasm was higher than music majors regardless of experience and that the difference was perhaps related to their perceptions of Web sites enhancing instruction and saving students' time. When asked to identify previous computer assisted courses experienced students named liberal arts required courses. Experienced music majors also reported either a music theory or music technology course as previous exposure to course Web sites. This study does not isolate unique characteristics or applications in course Web sites and it does not analyze behavioral difference between music and nonmusic traditional class instruction to determine which factors, if any, influence Web site efficacy perceptions. Such information may be helpful, however, for designing effective Web sites and providing structure for positive experiences for different types of course content and instructional formats, including community based practicum management. Music and nonmusic majors' agreement responses were predominately similar suggesting the absence of a career plan or professional interest effect in this particular study.

Comparison of Web site efficacy perceptions of inexperienced and experienced users not enrolled in the AIMS course would isolate the effect of the practicum Web site experience on general perceptions. Results suggest, however, that affective responses about a single Web-based practicum course were positive. Results also suggest that experienced students may not entertain a particular bias for or against course Web sites. For the most part their responses to statements comparing courses with and without Web sites were similar to those of the novice and moderately experienced course Web

site users. A novelty effect may explain the fact that students reporting only moderate experience with course Web sites agreed with the statement that courses without Web sites promote dependence upon instructors. Comparisons suggested that the novelty effect apparently diminishes as students experience not only the variety of courses but the variety of course Web site applications in higher education. The results of this study, although preliminary, corroborate previous research findings suggesting a positive relationship between students' perceptions of the usefulness of computer-enhanced instructional applications and participation. When given a choice between a computer-enhanced or traditional format of a course, students may select the computer-enhanced format only if they perceive the applications as useful for completing the course requirements. If the only choice is a computer-enhanced course, perceptions of usefulness may affect students' perception of the course, the instruction, and the content.

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