NSU NOVA SOUTHEASTERN UNIVERSITY Abraham S. Fischler School of Education

Innovate: Journal of Online Education

Volume 4
Issue 2 *December 2007/January 2008*

Article 4

1-1-2008

The Fusion of Learning Theory and Technology in an Online Music History Course Redesign

Blasé Scarnati

Paula Garcia

The Fusion of Learning Theory and Technology in an Online Music History Course Redesign

The Fusion of Learning Theory and Technology in an Online Music History Course Redesign

by Blase Scarnati and Paula Garcia

Jazz fusion is the merging of different musical styles with jazz to create new jazz styles. Many musicians have displayed remarkable creativity in taking the traditional, inherited conventions of jazz music and infusing them with the idioms of other musical genres—classical, blues, soul, rock, funk—in order to renew and revitalize jazz for their own diverse audiences. In the case of instructional design in the academy, so too does a type of fusion occur when sound pedagogical principles are infused with advanced technological tools. The ideal result is a new method of teaching course content that takes advantage of technology while maximizing the learning experience of a diverse group of learners. Only an intentional and well-planned integration of technology with pedagogy will produce electronically enhanced courses that are sufficiently rigorous and stimulating for today's students (Garrison and Anderson 2003).

This article provides an account of how the redesign of a junior-level music history course exploited such a fusion of technology and teaching methodology. In this redesign, instructors wanted to rejuvenate this large-enrollment course by incorporating a learner-centered pedagogy supported by a range of multimedia enhancements. In what follows, we describe the context of the redesign, the methodology that guided it, the technical assistance that made it possible, and student perceptions of the changes.

The Course, Its Original Format, and Its Pedagogical Limitations

Jazz History and Styles, an undergraduate course offered in the School of Music at Northern Arizona University (NAU), is designed to fulfill a general education requirement for non-music majors and serves as an elective for music majors. Students enrolled in this course have widely variable backgrounds in music history and theory; the course must address the entry-level backgrounds of the majority of non-music majors while also providing a rich learning environment for music majors. In its original version, the course was taught in a traditional, lecture-style format and delivered via interactive instructional television (IITV) to a large enrollment of 400 to 600 students. Students taking the course consisted of a mixture of on-campus students and distance learning students at remote locations.

While the original version of the course was effective in many respects, it nevertheless had a number of limitations in its pedagogical design and format. The IITV version of the course utilized a conventional, chronological organization to survey the history of jazz. While this pedagogical approach is useful in highlighting connections and common practices between musicians of one historical period and a later one, it often completely misses lateral influences, such as the rich effect of other contemporary music styles on jazz performance. Further, the medium of IITV proved to be increasingly restrictive. The course was, in effect, a broadcast of a lecture course whose PowerPoint presentation tended to lock the instructor into regular and rigid frames rather than encouraging intellectual engagement with students in a mutual exploration of issues and ideas. With little interactivity provided by the medium, students watched the broadcast as a television show rather than collaborating with one another or engaging with the course material.

These concerns led faculty members and technical support staff to design an online version of the course that would accommodate a wider range of student backgrounds while taking full advantage of multimedia online technologies. After a preliminary period of planning, design, and initial testing, the first section of the online course was offered in the fall semester of 2004.

Addressing Pedagogical Limitations through Learner-Centered Design and Online

Media

In developing the online version of the course, we recognized that adopting a learner-centered approach—starting with what students already know, actively involving them in their own learning, and providing multiple opportunities for interaction (Chou 2004)—would be the best way to address the varied needs of our students. We also recognized that providing content-related experiences and interaction (Garrison and Anderson 2003) would allow the course to engage this diverse group of learners. These principles informed both the design of the course content and the means of its online delivery.

First, in order to ensure that the format of the new course would be appropriate for students with varying degrees of musical knowledge and experience, the course structure was modified in terms of the overall sequence of units and topics. Rather than the chronological format that characterized the original version of the course, the new course adopted a reverse chronological sequence so that students are first exposed to contemporary DJ jazz remixes; the course then moves back through funk fusion, modal jazz, swing, and Dixieland to the origins of the genre (Exhibit 1). In adopting this design, the instructors recognized that the course attracts many younger students who listen to contemporary music but are often less interested in or familiar with older musical styles. Presenting the course content in this new sequence would, it was anticipated, allow these students to engage more immediately with the course material because they were familiar with the sounds and social contexts of current popular musical styles. Students could then build upon this more familiar knowledge as the course moved through preceding jazz styles. Meanwhile, the course would continue to have the broad, comprehensive historical scope that suited the needs of the music majors taking the course.

Second, the new version of the course adopted online media technology to allow a greater degree of engagement, self-motivated knowledge construction, and collaborative learning among a diverse student population. For example, the course redesign includes interactive learning tools in the form of a series of self-paced interactive games that focus on basic musical concepts such as pitch, scales, chord structure, beat, rhythm, and meter (Exhibit 2). This resource is especially useful to non-music majors, who may have little or no background in musical theory. Students are able to monitor their own learning needs and pace their work through the interactive games, thus providing a self-regulatory process within the learning experience (Dabbagh and Kitsantas 2004). Meanwhile, more advanced technical presentation of jazz theory is available to music majors in the course (Exhibit 3).

Online sheet music, performance transcriptions, and listening charts are included so that students can experience recordings in a rich context and in real time. For example, students can read the sheet music of the Broadway song "My Favorite Things," watch Julie Andrews sing it in the film *The Sound of Music*, listen to John Coltrane's classic 1960 recording of it with his quartet while viewing a listening chart that breaks down the performance's form and structure, view a transcription of Coltrane's improvisation, and watch Coltrane and his group in a 1964 German television performance (Exhibit 4). This sort of multimedia integration provides students with a rich and multifaceted learning experience.

The online environment allows for a variety of other instructional support tools. Pop-up glossary entries and bibliographic references guide students through the content and support their learning (Exhibit 5). Bibliographical and analytical articles from subscription-based vendors are accessed through the University Library's online Web site in accordance with copyright guidelines. The course management system in WebCT Vista provides opportunities for students to interact with each other, teaching assistants, and the professor through small group discussions (Exhibit 6) and collaborative assignments (Exhibit 7). In discussion groups, students react to provocative articles on jazz and cultural criticism, evaluate new material, and work through ideas that they apply to their group writing assignments. Discussion tools and collaborative group projects help build a sense of community that was clearly absent in the course's previous IITV format.

Meeting the Challenges of Designing a Media-Rich Course

The development of the redesigned course took more than fifteen months from the writing of the course text to the first offering in Fall 2004. The technical development, in particular, took six months: three months for planning and design and three months for production. The planning and design phase involved plotting out course modules, identifying audio and audiovisual materials to be included in each module, deciding where to place specific elements within the structure of each module, and creating unique graphics to "brand" the course.

Creating Multimedia Content

One of the primary challenges in developing the course involved the creation of multimedia content. A rich collection of audio and video materials are critical to bringing jazz history to life; students need to be able to hear performances and see the performers in order to make connections from one musical milestone to the next. The support staff at the NAU e-Learning Center, our campus unit for developing online courses, played a vital role in this aspect of the course. The e-Learning Center team consisted of specialists in graphics, video, audio, and Web design headed by a graphic designer. Their contributions made it possible to deliver over 200 complete audio recordings of seminal jazz performances and about 100 video clips of jazz performances, films, and interviews, all of which were embedded throughout the course in its WebCT shell. The team created a successful look, function, and feel for the course, freeing faculty members to focus on course content and the overall sequence of units and activities.

The production phase involved digitizing audio clips, audiovisual materials, and images and creating PDFs of the musical scores that accompanied many of the audio clips. Audio and video sources came mainly from the personal collections of the two faculty instructors and were dispersed among audiocassette tapes, VHS tapes, CDs, and DVDs. Audio materials were digitized in iTunes and converted to MP3 files. Video materials were digitized in iMovie and converted to MPEG files. All audio and video files were then converted to a Flash proprietary format, which prevented them from being downloaded in violation of copyright rules. The interactive games were originally created in Macromedia Director for a CD-ROM intended for use in other music history courses. The material was converted to Web-delivery Shockwave files for use in the revised online jazz history course.

Of course, there were technical limitations in the size of files that would be practical for downloading, especially with so many of our distance students still using dial-up connections for Internet access. Recognizing this fact, we decided early on to limit audio and video clips to five minutes. In fact, the longest video clip in the course was 3 minutes and 33 seconds. Another important decision was to stream audio at 32 kilobytes mono, which was the most efficient MP3 format that did not compromise sound quality. Such file size limits made the course accessible to all distance students, many of whom have outdated equipment.

Ensuring TEACH Act Compliance

Since the online course is fundamentally dependent upon copyrighted media (audio recordings, video clips, online articles), compliance with the Technology, Education and Copyright Harmonization Act (TEACH Act) became a key requirement during the development period. An online country music course developed by one of the authors before the TEACH Act was enacted in 2001 had become hamstrung by the fair use doctrine, which specified that no more than 10% of any collection or performance could be used. However, within the (relatively) more flexible standards of the TEACH Act, we were able to ensure the proper use of copyrighted media in the course. Efforts to ensure compliance with the TEACH Act included:

- limiting access to copyrighted works to currently enrolled students through password-protected course access,
- limiting access to copyrighted material to the time needed to complete the course,
- preventing further copying or redistribution of copyrighted works by using Flash proprietary formats, and

- not interfering with copy protection mechanisms.

The University of California's comprehensive explanation of the law, Baruch College's interactive guide to specific copyright compliance needs, and the University of Iowa's checklist of compliance requirements were useful resources for understanding the TEACH Act.

These challenges were substantial, but the effort to meet them has been entirely worthwhile in terms of the final product. The online course is technically functional, aesthetically pleasing, and accessible to all distance students. Faculty members and e-Learning Center staff agree that it is a beautifully designed course that highlights the best work of all parties involved. The technical staff, although at times frustrated with the tedious work of converting files and embedding them within the course, are often use the course as a model of well-integrated content delivery.

Did it Work? Student Perceptions of the Redesign

Given the time and resources that went into the course redesign, the course instructors were anxious to learn whether the new methods employed in the course would truly be an improvement. In other words, were students learning more effectively in the redesigned course? To begin to answer this question, students were asked to complete an online survey soliciting their impressions of course components such as the reverse chronological structure, integrated media components, and online discussions and their perspectives on the fostering of a community of learners (Exhibit 8). The survey was administered in Fall 2005; students participating in the survey had taken the course between Fall 2004 and Summer 2005.

Of the 78 students who responded to the survey, 53% believed that the reverse chronology was an effective way to learn the course content, 21% reported that it made no difference, and 26% viewed the approach negatively. Students who were positive cited the novelty of the approach and their own familiarity with more recent musical styles, mapping back to the reason for using learner-centered methodology (to take advantage of students' prior knowledge). Students who viewed the approach negatively believed that the reverse chronology was too confusing and that it ran counter to their accustomed way of learning.

Results were less mixed regarding the implementation of media components. Eighty-two percent believed that the audio and video clips enhanced their learning experience, and 58% believed that the linked articles and online resources enhanced their learning experience. In fact, the media clips not only helped students learn course content more effectively; they also helped foster a passion for jazz among some students. For example, one student wrote that "this class with its video and audio clips provided me with a new found love of jazz music." Another student wrote that "the music clips and videos are great and really bring you into the world of jazz."

When asked about the interactive games used to teach musical concepts, most students were positive about their usefulness. One student, who seemed to appreciate the experiential approach, wrote that "the video game strategies were great. They really helped me visualize what I was learning about. I learn best when I can see things and figure them out on my own." Another student linked the interactive games to success in quizzes, writing in reference to the games that, "I don't think I could have understood quiz questions if I hadn't reviewed them."

The survey results also revealed sustained learning in the course, as seen from student comments such as:

- "For a non-music major I enjoyed the course, and continue to listen to jazz. What is funny, when various forms of jazz are played I can identify about 90%."
- "This course gave me a better understanding and appreciation for jazz. Now I can say that I enjoy listening to jazz, even picking out certain tunes that I did not relate to jazz in the past."

- "I found myself discussing the course with other students and my parents (music performers) because I finally felt like I had a real grasp on the formal timeline and structural differences between time periods."

In the main, final grades for students in the first three semesters of the class in its incarnation as a Web course were very positive (Exhibit 9). Nearly 65% of those students earned As or Bs in the course, while fewer than 13% received Ds or Fs. Unfortunately, final grade data is no longer available for sections of the course that predate its adaptation to the Web, and so we cannot correlate final grade results before and after the Web adaptation.

Conclusion

Transformed from its original IITV lecture format into a highly interactive online course that features a multiplicity of media clips and linked online resources along with a learner-centered sequencing of course content, the redesigned jazz history course provides students with an engaging, media-rich learning experience that demonstrates an innovative fusion of technology and student-centered teaching methodology. The tools and resources available in an online course create a rich, multidimensional learning environment that was simply not possible in the earlier IITV format. While engaging with course content, students, whether truly at a distance or on campus, are able to interact with the media, each other, and instructors while working through both self-paced and collaborative learning activities. All of these elements are orchestrated into an innovative course that serves as a unique model within our university curriculum.

The redesigned course, with its extensive online audio and video components, interactive features, and attractive graphics, would not have been possible without a major design effort by the university's e-Learning Center, which supports online course development and provides technical assistance to faculty members interested in creating and redesigning courses for online instruction. The e-Learning Center staff had the expertise to deal with a varied array of audio and video formats so that they could be made usable for electronic delivery. Having a base of expertise like this is imperative if educators are to provide students with learning opportunities that not only match face-to-face or IITV delivery modes, but surpass them.

On a final note, online survey results demonstrate that students believe that they can effectively learn within this learner-centered course redesign. Through the use of technological learning tools, students engage in a course that is thought provoking, well integrated, and aesthetically appealing. Their interest is piqued from the beginning by content that is current and familiar to them. Ultimately, they become active participants in a community of music enthusiasts.

[Editor's note: This article was modified from a presentation at the EDUCAUSE annual conference in Orlando, FL, October 2005.]

References

Chou, C. 2004. A model of learner-centered computer-mediated interaction for collaborative distance learning. *International Journal on e-Learning* 3:11-19.

Dabbagh, N., and A. Kitsantas. 2004. Supporting self-regulation in student-centered web-based learning environments. *International Journal on e-Learning* 3:40-48.

Garrison, D. R., and T. Anderson. 2003. *e-Learning in the 21st century*. London: Routledge Falmer.

COPYRIGHT AND CITATION INFORMATION FOR THIS ARTICLE