

**University of Massachusetts  
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Final Report On Professional Development Grant**

The Virtual Listening Room

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**Additional Contributors**

**Art Students**

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Students in Technology in Music Education Fall 2006

**Introduction**

The purpose of this project was twofold with the idea of piloting a web-based teaching and learning model that will serve to enhance the delivery of content in several of the core music classes, and simultaneously give students in the Technology in Music Education class, as well as students in the Art Department's Advanced Web Design course, hands-on experiences in collaboratively designing technology based educational-tools. *The Virtual Listening Room (VLR)* was to be a web based listening center that enables students of the Department of Music to access music examples from specific courses in a guided listening exploration and complement the resources of O'Leary Library; giving students the opportunity to study and listen to course related musical examples, with annotated guides, 24 hours a day from any location. The UML students involved in this project were being asked to develop and design content as part of a real-world project based focused. Students would learn how to use technology to create interactive instructional environments. It would also grant professors the opportunity to enhance musical course content by creation of this web based music delivery system.

**Scope of Project**

This project was based on approaches to learning that would allow for student exploration, problem-solving, and experimentation, consistent with the ways most students are already interacting with their technology. *The Virtual Listening Room*, while aiding in the development of listening skills for all music majors, would also serve

to prepare students for the field of music education, who are expected to know how to use technology in the classroom. It is no longer enough for music educators to merely be able to know how to use the technology, and subsequently transfer that knowledge to others. Given the ingrained nature of music with regard to youth culture, our future music educators might be better served if they were given opportunities to create and develop richer educational experiences through multimedia environments. The Art students will be learning not only how to work with the various multimedia design tools, they will also be applying this knowledge towards the development of a 'real-world' application and learn to work collaboratively with people who may not think and express themselves in the same way they do.

At the beginning of the project, three pieces of music were identified by Paula Telesco as being short enough, and suitable enough to fit the music and technology goals of the overall project. Each piece had some musical attribute that the students could research and create questions for a short listening guide. The listening guides were to be created using Adobe Flash with the idea of loosely basing the guides on a format that was created by Scott Lipscomb at the University of Minnesota and freely available at; [http://www.lipscomb.umn.edu/form\\_templates.htm](http://www.lipscomb.umn.edu/form_templates.htm)

### **Project Overview**

The Technology in Music Education class consisted of 13 students. Tracey Greene had identified 3 Advanced Studio Art Students with advanced web and Flash skills, so the tech class was divided into 3 groups; 2 groups of 4 students and 1 group of five students and each group created a name for their group. We had Team Amazing, Team Fabulous and Team Firetruck. Team Amazing was given the first movement of a Mozart Sonata K545 to work with; Team Fabulous was given the third movement of the Haydn Sonata No. 9 in F Major to work with; and Team Firetruck was given the second movement of a Beethoven Sonatina in F Major, Opus Posthumous.

Through research, each group was to discover what the form of the piece was and what a defining musical characteristic might be. The music students would be responsible for scanning the score and marking points in the score where questions or information would take place. They were to work with their Art student in providing all of the content to be included. In addition to creating an interactive Flash listening guide, they would be responsible for working with the art student on the creation of a website that would give background information about the composer and composition where this flash application would be housed. To prepare the music students for working in Flash, I designed some simple animation projects that would be synchronized to music in order for them to learn how to mark *Keyframes* in the music as well as gain a basic understanding of the program we would be using. It was assumed that through this collaborative effort the music students would learn about and get comfortable with working in this programming environment.

### **Issues Encountered**

Based on the fact that the art students we were working with were part of a graphic design course that met at a completely different time than our music tech class, it was

difficult for my students to find a common meeting time with their art partners. The time issue became problematic as the semester wore on. Between students' work schedules and obligations for other courses, the fact that there wasn't a common class meeting time for the groups and their art partners to work together proved to be a major obstacle for any kind of interdisciplinary project to succeed.

The other major issue became the Flash environment itself. In spite of having some introductory projects to immerse my students in this software application, it proved to be far more of a challenge for many of my students than I had anticipated. One factor that contributed to this was that due to the high cost of the program, it was something that was only available to the music students in our computer lab, which meant that my students could only work on the project and explore the program when their free time coincided with our computer lab being open. Our lab is not open on a 24/7 basis and the weekends have proven to be particularly difficult in getting our lab monitors to actually show up.

## **Findings**

Two of the three groups were able to complete working interactive websites by the end of the semester. While no group actually conformed their final flash movie to the template that was provided one team, Team Fabulous came closest to having a similar functionality. Their website was cleanly laid out with some info about Haydn on the first page. When that box was minimized it revealed a brief definition of a **sonata** as well as the form for this particular musical selection. The music students managed to cut up the score and the audio track down to small phrases that were linked on the website so that a user could look at the section of the score, click on the play button and listen to that section in order to answer a question about that particular section of the music. Once a user entered the question part of the site they were first prompted to listen to and look at the entire score before going on to the quiz. This was a well thought out and user-friendly site.

Team Fabulous maintained a good working relationship with their art student and there seemed to be good communication between all the members of the group. Their art partner also had a decent amount of musical knowledge, which might have contributed to their not having too many communication issues. Their website featured information about the composer the piece, an easy interface to navigate and an opportunity to listen to the music as the questions were being asked. It was the most interactive of the three projects that were submitted.

Team Amazing submitted a workable website that featured some biographical information as well as information regarding the piece that was being featured. The site was designed to allow the user to listen to the music at any point during the 14 question quiz. However, other than the fact that there was a quiz where a user would click on an answer for multiple choice questions or true/false questions, there was no interactivity with the score. The music students had little to no interaction with their art partner or the flash program, other than to provide him with questions and the wav file for the site. It didn't appear that they had much input into the design of the site either.

Team Firetruck was a mostly dysfunctional team both among the individual music students and with their art student team member. Their site missed the point of the project entirely. Other than the first page of the website, there is no other time the user can refer back to the listening example, which was problematic for a site who's goal was to be a listening guide. There was no interactivity and each time a question came on screen one of the radio buttons was already depressed, since whichever button was depressed on the previous screen remained depressed for the new question. Most of the questions asked referred to specific measures of the music, but without actually being able to see the score or hear the music, these questions proved pointless.

It was hoped that this interdisciplinary project would provide the music students with a deeper working knowledge of the Flash authoring environment as well as give the art students an opportunity to design an interactive project. There was little to no true collaboration with regard to the music students learning flash from their art partner or the art student learning something new about working with digital audio files in Flash. Without being able to build in class time, and perhaps build in regular meeting time between the two professors, communication issues and time/lab issues became the two major factors affecting the success of this project.

As previously mentioned, the Flash environment proved problematic in that it was too expensive a program to ask music students to purchase, which meant they could only work on the project in the computer lab. There is also a large learning curve for this software and may not be the appropriate environment for a large-scale project in an introductory technology class.

### **Budget**

- **\$6,100**- 20 station site license for Macromedia Studio MX 2004
- **\$1,500** - \$500 stipend for each of 3 art students

**Total- \$7,600**

### **PI's Postscript**

While initially, I viewed this project in a negative light, a great deal was learned from this work that has helped to form the foundation of more successful interdisciplinary projects. See [www.performamatics.org](http://www.performamatics.org) and [http://faculty.uml.edu/ahillier/SoundScape\\_Music\\_Program.htm](http://faculty.uml.edu/ahillier/SoundScape_Music_Program.htm). Through my work with Jesse Heines, who was a CoPI on my previous technology grant, we have developed a general education course combining digital audio and computer science, where the focus is on using readily available freely downloaded or inexpensive software to teach basic digital audio and coding concepts.