MUSIC EDUCATORS ONLINE:

A RESOURCE NETWORK FOR MUSIC EDUCATORS

By

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The project presented by Elizabeth Elaine Fritz entitled:

MUSIC EDUCATORS ONLINE:

A RESOURCE NETWORK FOR MUSIC EDUCATORS

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ABSTRACT

Today's music educators need to develop curriculum that addresses standards and

benchmarks and uses technology resources. The purpose of this project was to create an

online resource network for music educators that will respond to current needs, serve as a

repository for electronic resources, and encourage and empower the use of technology.

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CHAPTER ONE – PROJECT PURPOSE

Introduction

This project explored the effective use of an online resource network to support technology integration by music educators.

Today's music educators need to develop curriculum that addresses standards and benchmarks and uses technology resources. Comprehensive, integrated curricular music instruction (O'Toole, 2003) is also an important resource component in today's music curriculum. This project focused on creating an online resource network for music educators that responds to current needs, serves as a repository for electronic resources, and encourages and empowers the use of technology and comprehensive musicianship.

In the comprehensive musicianship model (O'Toole, 2003), the teacher acts as a learning facilitator, posing tasks and lines of inquiry for the students that are based on the music being performed. Comprehensive musicianship can be defined as theory applied to practice; and knowledge and skill applied to practical music making. Technology integration is a possible tool to enable music teachers to incorporate this model into their teaching more effectively.

The project began with the implementation of a needs assessment survey of music educators and their current technology use and integration. After the needs were assessed, the data was used for feedback and to focus the creation of the online resource network.

After the resource network was created, the participants in the survey served as field testers to assess the final product.

Purpose of the Project

The purpose of this project was to build an online resource network for music educators. A website was created presenting types of technology needed for teachers to establish a better learning environment in the music classroom while integrating comprehensive musicianship techniques.

The collected research data provided information about the types of integrated technology that are being used in the music classroom. It also gave direction to how new types of web-based learning might contribute to the components of teaching, planning, curriculum and instructional methods specific to a comprehensive music education. The data was used to guide the construction of a music educator online resource network that provides opportunities such as: technology resources for music classroom organizational use, incorporation of everyday technology use into classroom, websites, blogging (web logging), databases, and resource lesson plans.

The various components of the website demonstrate how to integrate technology, and using a comprehensive musicianship approach for curriculum development. Other components also provide professional development opportunities specific to music educators about using technology as the focus of instruction, assessment and evaluation.

CHAPTER TWO – REVIEW OF LITERATURE

Literature Review

Conducting the literature review for this project consisted of bringing together the best sources available for music curriculum and technology integration. These included music journal publications from the ERIC database system, books, dissertations and educational materials. The review is organized in a chronological discussion of the development of the topic. Part One of the literature review primarily discusses music standards and expectations. Part Two pertains to the active and practical side of the research topic. Part Three describes insight into creation and implementation of good web design. All three components were integral parts of creating and designing the online community.

Initial research on this project was conducted during Educational Research (EDTECH 503) class at Boise State University. Research helped determine there may be a specific need for music teachers in the area of comprehensive curriculum and technology integration. There are many websites of a general education nature that provide wonderful resources for all teachers. A comprehensive approach to music teaching uses these sites to integrate curriculum from other areas into music classes.

Most music technology websites focus on using MIDI (Musical Instrument Digital Interface) or music notation software for computer assisted instruction. An example of this is the online school Berklee music.com site (Berklee, 2004). This is an

online extension arm of Berklee College of Music. In order to receive a specialist degree in music technology, one studies the following: desktop music production, using Finale software, sequencing basics and GarageBand. Sites such as these are lacking in solid curriculum resources and instruction of music. One may know how to use the software, but what will it teach of value in terms of content and how will it meet state and national standards and benchmarks?

Music Standards and Expectations

The use of technology in the music classroom has a long and varied history. As technology continues to develop, so does the development of its use in the music classroom. The evolution of this use, starting in the mid 1960's through today's current practices, can be described as developing through a generational process (Bowyer, 2004).

In 1994, the landmark education legislation Goals 2000: Educate America Act was passed. With the passing of this legislation, the arts curriculum was established for the first time as a core subject in which all students need to show competency. This legislation also led to the establishment of the National Music Standards, specifying what students need to know to be able to have competency at grades 4, 8 and 12. The challenge for music educators is to implement these standards at the local and state level.

To assist in this process the Music Educators National Conference (MENC) initiated a series of teaching strategies books to help in the curriculum development, lesson planning and assessment of music learning. Reese, McCord, & Walls (2001) provide strategies for using technology and the integration of technology into the music classroom.

The world of technology changes very quickly. Because of this, the MENC committee felt the need to create an addendum to the national standards called the *opportunity-to-learn* standards (MENC: The National Association for Music Education, 1999). These standards are meant to provide more specific guidance to all those who must determine how best to take advantage of new technologies.

Educators journey toward new learning and work to integrate the tools of technology into music curriculum. As this journey progresses, it involves technology use and technology competency issues for teachers. It also links the technology areas of competency (Rudolph, Richmond, Mash, & Williams, 1997) with the national music standards. The areas of standards and benchmarks are very current issues in education today. Music educators need to embrace technology as a means to improve music learning and use technology as a tool to be effective teachers (Rudolph et al., 1997).

The journey also takes us to textbooks (Williams & Webster, 1999) outlining essential topics a musician should consider when using computers and technology; integrating a comprehensive approach involving listening, performing, composing, and teaching. Williams & Webster (1999) help establish possible areas of computer-assisted instruction to consider for study.

Practical Applications of Technology in the Music Classroom

The second part of the literature review pertains to the active and practical side of the research topic. Research articles were found on similar topics that might be helpful in deciding a specific area to examine. Several areas were of interest. These include web-based instruction (Chuang, 2000;Waters, 1999), motivation through online instruction

(Vega, 2001), limited computer resources in the classroom (Kassner, 2000), and accessible online learning for isolated students (Bond, 2002).

Music education, in particular, stands to benefit from the enhanced multimedia and interactive capabilities of the Internet. It is important for music educators to explore the many ways of using this technology and take advantage of new developments. Several themes that reappeared frequently throughout articles included the definite need for organization, considerations for designing web-based courses, as well as reasons for designing a Web-based course in music specifically (Chuang, 2000).

Chuang's research and presentation provided data for Web-Based Instruction (WBI) toward the development of effective, systemic and systematic WBI design (Chuang, 2000). The case that was chosen for the study was the teaching of music fundamentals at the pre-college level. The major findings of this study are recommendations for guidance of future practitioners and the development of theoretical frameworks for future research.

Web-based instruction is one of the components worthy of examination for the resource network. These resources may provide additional information on frameworks that work.

Additional topics from research included the most efficient means of disseminating the different formats of computer files used, designing and securing web-based tests and copyright issues (Waters, 1999). There were also many concrete ideas about choosing equipment, setting up equipment and teaching strategies to implement technology integration techniques to increase teacher effectiveness (Kassner, 2000).

Considering the current state of affairs in education resources, these would be issues to consider in most classrooms.

Student motivation through technology could be a new aspect to consider within the music program. Vega created an action research project (Vega, 2001) that developed and implemented a program to improve student motivation within a music program. The students who were studied exhibited low levels of motivation that hindered achievement within their music classes. One of the solutions from this study involved changing music instruction through the use of technology. Post-intervention data indicated increased student motivation and interest resulting in increased levels of student music achievement when using technology as one of the methods of instruction. This would be a possible model for comparison of research being studied.

Not all projects evidenced great success in their research. One particular project explored the Internet's potential to teach instrumental music online to students in regional or remote regions of Western Australia. Unfortunately, they did not feel the study was a success. Bond (2002) attributed the problems to the learner not being ready to learn through this online medium, the lack of knowledge by the teacher on how to create an effective learning environment and logistical problems associated with the online medium.

Bond (2002) found, overall, that the project needed more structure within the learning framework that included a mixture of pre-arranged online and offline contact. There was also a need to develop strategies to assist students to adjust to the discipline required in online learning. Even though the research project was not successful, it

enabled them to develop new approaches to engage instrumental music students in the learning process.

Strategies need to be adjusted to ensure more successful outcomes for a project similar to this. They would include: developing new approaches to engaging instrumental music students in the learning process, conducting a longer time trial, keeping the technology simple, and developing strategies to create the formation of a stronger bond between tutor and student.

Usability and Web Design

Part Three of the literature review provided insight into creation and implementation of good web design and usability. It also researched specific online learning issues with regard to online community design. These resources were used to help formulate the framework of the online resource network.

The issue of usability is very important in all online communities. Good website design starts with a good web site plan (Williams & Tollett, 2000). Details such as screen size and navigation design can highly affect the use of the site. Good design elements include alignment, proximity, repetition and contrast (Williams, 2004). These elements should be prominent in the ideal design. Williams provided examples, as well as links to sites on the web to examine and critique.

Other web usability issues revolve around content and presentation (Nielson, 2000). Web pages should be designed for scan-ability, with succinct writing, using hypertext to help organize pages. The Home page of the site should be self-explanatory, answering the questions of what, where and why. This can be accomplished with good

design principles, good navigation and by including a search feature on the page. Other

design details, such as *breadcrumbs*, add to the overall navigation power of the web site

(Krug, 2000).

What exactly is an *online community*? Many definitions are presented and

continue to change as technology advances. One example is "geographically

disconnected people becoming connected in cyberspace with common goals or interests"

(Palloff & Pratt, 1999, p. 23). Powazek (Perfetti, 2003) has this to say about creating

effective online communities:

I advise clients to never call their sites *communities*. Instead, I tell them to

provide adequate tools for your members to communicate with each other, plenty of

relevant material to talk about, and an elegant structure that encourages

conversation. If you're successful, your members will start calling it a community

on their own.

But since community is a personal business, I'll give you my personal

definition of the word: "Web communities happen when users are given tools to use

their voice in a public and immediate way, forming intimate relationships over

time." I think that covers all the bases. Really what it's about is power: As the site

owner, I'm giving away some of my power to my audience, to give them a voice on

the site. And that's really a leap of faith sometimes. But when it works, the benefits

can be astounding (Perfetti, 2003, p. 1)

Online communities exist in all types of settings. They run the gamut from

storytelling sites Kvetch.com and Fray.org (Powazek, 2001) to educational meeting

places such as PBS TeacherLine (Learning Times, 2005; PBS TeacherLine, 2005). These learning communities share a way of knowing, a set of practices and a shared value of knowledge. A learning community is a group of people who share a common interest in a topic or area, a particular form of discourse about their phenomena, tools and sense-making approaches for building collaborative knowledge, and valued activities (Fulton & Riel, 1999; Palloff & Pratt, 2001; Palloff & Pratt, 2003; Preece, 2000; Tu, 2004).

Conclusion

There are many sites on the web related to teachers and professional development. However, there are not many sites specific to the professional development of music educators, especially with regards to curriculum. This literature review has given direction for this research, and shown possibilities and solutions for technology applications in the music education classroom, and the potential for improved technology use by music educators.

CHAPTER THREE – DESCRIPTION OF PROJECT

Project Design

The initial part of the project conducted research through a needs assessment survey (see Appendix A) on how music teachers are currently using technology. This survey pointed to needs for technology integration into the music education curriculum, and what might be possible or imaginable. The needs assessment provided ideas and justification for the online resource network.

The process began by identifying as many participants (see Description of Target Population) as possible via letters and/or emails (see Appendix B). These were sent through the Iowa music education associations. These included the Iowa Music Educators Association, The Iowa Bandmasters Association, The Iowa String Teachers Association and the Iowa Choral Directors Association. The survey (see Appendix A) identified technology use of music educators and how they are incorporating technology in their classrooms. The survey also gathered information on their current skills and future needs for better technology integration. Data was collected and used to drive the development and completion of the online resource network (see Appendix C).

The online resource network was first designed as shell (see Appendix C). The web design used basic design elements of repetition, contrast, alignment and proximity (Williams, 2004) (see Appendix D). Basic components, such as community, resources, professional development, news and support were included in the shell. A flow chart was

created with the basic components listed above and basic site organization (see Appendix

E). The site may be found at: http://www.musiceducatorsonline.org/.

Specific content for the site was determined by the needs assessment survey. The

detailed components and some content were prepared before the data was collected. Some

of the content for the site was created during coursework at Boise State University

(Billingsley & Cunningham, 2003; Ko & Rossen, 2004; Palloff & Pratt, 2001). This

allowed for growth and expansion within the development of the web site. Modifications

were then made to the site based on feedback received from the survey.

The instructional design model of Dick, Carey & Carey (2001) guided the

development and design components of the project. These included:

1. Assessment of needs to identify the goals of the project

2. Conduct analysis of data

3. Analyze learners and context of resources needed

4. Write objectives to accomplish goals realized from data

5. Develop instructional/resource strategy

6. Develop and select resource materials

7. Design and create site

8. Design and conduct formative evaluation of site

The web design research has created critical thinking opportunities regarding

what makes a good, usable web site. *Don't make me think* (Krug, 2000) has become a

favorite tenet. This may seem a bit simplistic, but the goal is to allow an average user to

understand the page by just looking at it, making it self-evident (Nielson, 2000). Most

users scan pages, do not take time to make optimal choices, and choose to struggle through rather than read the instructions.

To achieve this goal (*Don't make me think*), the designer must use the following important aspects of site design (Krug, 2000).

- Use conventions with type and format. Users expect certain things in certain places.

- Break pages up, use white space.

- Make it obvious what is clickable. Do not use underline unless it is a link.

- Keep the noise down!

- Omit needless words.

- Do not use happy talk or instructions.

For maximum page design, use navigation conventions:

- Use persistent navigation, same graphic in same place doing same thing.

- Tab format for minimal download time.

- Use breadcrumbs at top of page to show where you have been.

Example - You are here: Home > Resources > **Lesson Plans**

- Stay consistent in format on each page.

- Use online forms for feedback.

- Use a search box.

Description of the Target Population

The target population of this project included music educators from the state of Iowa. This population contained 133 music educators and included a cross section of

different educational areas within the Iowa music educator system. The accessible population included general music teachers, instrumental music teachers (band and orchestra) and vocal music teachers. All music teachers in Iowa are certified Music K – 12.

As many participants as possible were surveyed in order to obtain the maximum survey results. The survey was accessible for responses for approximately two weeks. The process began by identifying participants via email letter or website links (see Appendix B) that were sent through the Iowa music education associations. These included the Iowa Music Educators Association, The Iowa Bandmasters Association, The Iowa String Teachers Association and the Iowa Choral Directors Association. The administrator for the Iowa High School Music Association also helped to distribute email letters. This process helped provide a realistic picture of computer technology use in the music classroom, a sufficient number of participants, and provided a good cross-section of all music educators.

This project is important to the Iowa music educator community at large. Many music teachers are isolated in districts where they are the only teacher in their area. Administrators often struggle with professional development opportunities that directly apply to their music faculty. This research points to areas of technology integration deficiencies within our own system, as well as provides methods and resources for music teachers and administrators to improve technology use.

Description of Evaluation Measures

The effectiveness of the project was determined by a formative evaluation (See Appendix F and G). Participants included individuals who were previously surveyed in the data collection process. Improvements to the product were made based on suggestions, comments and evaluations of the participants during the formative evaluation process.

Evaluation Process

Subject Matter Expert Review

Three formative evaluation tools were used to assess the project. Several subject matter experts (SME) assessed the site with regard to overview of usability, process and resources (see Appendix F). The SMEs were music educators from outside the state of Iowa and reviewed the materials for usability. The SME may also suggest music-related content possibilities based on research data provided.

One to One Test

A one to one rubric evaluation (see Appendix G) by three participants from the target population was used for the assessment of the online resource network. Participants gauged user satisfaction, ease of use, and suggested changes in site design. Revisions to the product were made based on comments from and observations of participants.

As part of the ongoing field test, the one-on-one rubric will be repeated with two or three additional representatives of the target population, and final revisions will be made.

<u>Field Test</u>

The final assessment is a field test of the site, open to the original participant pool. Those participating in the field test will be solicited for comments and suggestions on overall site design, content delivery and usability. These comments and suggestions will be used to make final revisions to the product.

<u>Summative Evaluation</u>

A summative evaluation will be completed a year after implementation. The summative evaluation will address the following questions:

1. Has the online resource network supported and enabled music teachers to integrate technology in accordance with standards and benchmarks?

2. Has the online resource network helped teachers develop skills necessary to efficiently use technology in their classroom?

CHAPTER FOUR – NEEDS ASSESSMENT RESULTS

The results of the needs assessment survey provided interesting information about technology use by music educators. The data substantiated and provided support for the intent of the proposal and the need for a way to support technology integration by music educators. The data also reflected the specific need for professional development on how to integrate technology into music education, needs for mentoring technology use and finding appropriate technology resources for music education.

A total of 133 participants completed the needs assessment survey. The participant pool included teaching areas of general music k – 5, instrumental music 5 – 12, instrumental music /band 5 – 12, instrumental music /band 7 – 12, instrumental music /band 9 – 12, instrumental music /orchestra 5 – 12, instrumental music /orchestra 7 – 12, instrumental music /orchestra 9 – 12, vocal and instrumental music k-12, vocal and instrumental music 5-12, vocal music k-12, vocal music 5-12, vocal music 7-12, and vocal music 9-12. Teaching experience ranged from 1 – 38 years with an average of 18 years of teaching experience. The survey results are divided into six categories. A summary of the open-ended survey question on Instructional Units is found in Appendix H Survey Responses.

Table 1. General Questions on Technology Access

	I have a computer for teacher use	I have multiple computers in my classroom	I have access to computer labs in my school	I have access to a MIDI lab	I have an Internet connection in my classroom
Yes	133	40	119	18	116
No	1	94	14	115	17

The numbers in Table 1 would suggest a high degree of technology access for most music educators.

Table 2. Teaching Practice and Technology - Instruction

	Use a comprehensive musicianship approach to teaching	Teach using units or themes of instruction	Suitable materials available for this type of instruction	Create materials for instruction
Mean	4.01	3.25	3.15	3.95
Standard deviation	0.71	0.95	0.85	0.79
Overall Mean		3.59		
Overall Standard Deviation		0.10		
Total higher than neutral	106	59	44	103
% higher than neutral	79.70%	44.36%	33.08%	77.44%

The second section of the survey addressed teaching practices and technology in terms of instruction. Data shows music educators are using a comprehensive approach and do create their own materials. However, they are not using units of instruction and have problems finding suitable materials. This data points to the need for resource units and guides for instruction.

Table 3. Teaching Practice and Technology – Standards and Benchmarks

	Use Standards and Benchmarks as a guide for planning instruction	Incorporate Standards into my lessons	Required to incorporate Standards into my lessons	Have an established curriculum that I follow.
Mean	3.76	3.90	3.28	3.49
Standard deviation	0.89	0.81	1.13	1.12
Overall Mean		3.60		
Overall Standard Deviation		0.16		
Total higher than neutral	94	103	60	83
% higher than neutral	70.68%	77.44%	45.11%	62.41%

A high percentage of music educators use and incorporate standards into lessons, though not required. Most follow an established curriculum.

Table 4. Teaching Practice and Technology – Assessment

	Use technology for student assessment.	Use a published grading system.	Use some type of computer assisted grading.	Use a specific MIDI assessment software program.
Mean	3.21	3.72	4.02	1.75
Standard deviation	1.19	1.39	1.11	0.96
Overall Mean		3.17		
Overall Standard Deviation		0.18		
Total higher than neutral	66	89	111	11
% higher than neutral	49.62%	66.92%	83.46%	8.27%

Music educators are using some type of technology for assessment of students.

They are not using a specific music MIDI program for assessment.

Table 5. Teaching Practice and Technology – Integration

	Use technology in classroom to enhance the instruction of the music curriculum.	Use technology in a wide variety of instructional settings, including whole group, small group and individualized instruction.	Vision of learning incorporates technology as a key component that promotes challenging curriculum and provides instructional practices that engage students.	Technology use is a routine part of classroom curricula and is an expectation at my school.
Mean	3.51	3.04	3.42	3.02
Standard deviation	1.07	1.16	1.02	1.03
Overall Mean	3.25			
Overall Standard Deviation	0.06			
Total higher than neutral	79	56	70	49
% higher than neutral	59.40%	42.11%	52.63%	36.84%

The numbers here are fairly flat. This particular set of questions is neutral or less than positive. Respondents were more positive on enhancing classroom instruction with technology, but are not highly motivated by expectations of their school district.

Table 6. Technology Use and Integration - Internet

	I have used online instruction with my students.	I use a class website.	I have used a WebQuest.	I have augmented instruction with the use of the Internet
Mean	2.28	2.21	1.98	2.88
Standard deviation	1.23	1.32	1.24	1.30
Overall Mean		2.34		
Overall Standard Deviation		0.05		
Total higher than neutral	27	26	22	58
% higher than neutral	20.30%	19.55%	16.54%	43.61%

Music educators are beginning to see the benefits of using the Internet for instruction. They are less positive about individual types of online learning specific to their class.

Table 7. Technology Use and Integration – MIDI and Notation Software

	I have a MIDI keyboard.	I use a computer sequencing program	I have a computer with a MIDI keyboard dedicated to classroom use.	I have and use notation software.
Mean	3.41	2.40	2.15	3.77
Standard deviation	1.46	1.42	1.37	1.30
Overall Mean		2.93		
Overall Standard Deviation		0.07		
Total higher than neutral	90	39	30	96
% higher than neutral	67.67%	29.32%	22.56%	72.18%

Music educators use MIDI keyboards and notation software but not as part of classroom instruction.

Table 8. Technology Use and Integration – Knowledge

	Have basic working knowledge of the music technology equipment in my classroom.	Under-stand how to use a MIDI keyboard.	Under-stand how to use a sequencing program.	Under-stand how to use audio and video equipment.	Under-stand how to use a notation program.
Mean	3.41	2.40	2.15	3.77	4.16
Standard deviation	1.46	1.42	1.37	1.30	.92
Overall Mean			2.93		
Overall Standard Deviation			0.07		
Total higher than neutral	90	39	30	96	114
% higher than neutral	67.67%	29.32%	22.56%	72.18%	85.71%

The numbers in Table 8 show that music educators know how to use their technology equipment in general. They use audio/video equipment more than specific music technology equipment as listed in Table 3.4.

Table 9. Technology Use and Integration – Frequency of Use

	I use music technology equipment at least once a week for instruction in my classroom.	I use MIDI technology equipment at least once a week for instruction in my classroom.	I use audio and video equipment at least once a week for instruction in my classroom.	I use a computer for instruction in my classroom.
Mean	3.19	2.04	3.78	2.87
Standard deviation	1.33	1.16	1.05	1.18
Overall Mean		2.97		
Overall Standard Deviation		0.12		
Total higher than neutral	57	18	98	40
% higher than neutral	42.86%	13.53%	73.68%	30.08%

Music educators are integrating audio and video equipment more than music technology equipment, such as MIDI.

Table 10. Technology Use and Classroom Preparation – Planning

	I use a consistent system for planning efficient lessons.	I use some type of computer work to write and create lessons.	Planning is strong in my teaching.	I prefer to have a plan for instruction.
Mean	3.74	3.06	3.59	4.02
Standard deviation	.93	1.27	0.89	0.76
Overall Mean		3.60		
Overall Standard Deviation		0.22		
Total higher than neutral	98	60	76	109
% higher than neutral	73.68%	45.11%	57.14%	81.95%

Music educators are aware of the need for efficient planning for instruction and prefer to use a plan. Planning is only a moderate strength.

Table 11. Technology Use and Classroom Preparation – Use of Resources

	I will use a teacher resource guide if one is available.	I use technology to enhance my classroom preparation.	I use the Internet to research content for my instruction.	I search the Internet for appropriate lesson plans.	I use teacher resources from Websites.
Mean	3.60	3.68	3.84	2.6	3.21
Standard deviation	0.97	0.86	0.97	0.99	1.01
Overall Mean			3.33		
Overall Standard Deviation			0.06		
Total higher than neutral	75	90	96	29	61
% higher than neutral	56.39%	67.67%	72.18%	21.80%	45.86%

The weakest area is finding lesson plans on the Internet. Music Educators are willing to use resource guides if available but need help finding or creating these plans.

Table 12. Technology Use and Classroom Preparation – Organization

	I rely on a computer to help me stay organized.	I use word processing or spreadsheet to help organize my classroom.	I use word processing or spreadsheet for record keeping.	I have opportunities for professional development that address the skills teachers need to integrate technology into the curriculum.
Mean	4.37	4.52	4.55	3.16
Standard deviation	0.83	0.72	0.73	1.18
Overall Mean		4.15		
Overall Standard Deviation		0.21		
Total higher than neutral	114	125	127	64
% higher than neutral	85.71%	93.98%	95.49%	48.12%

The numbers show a very high use of technology for organization. There is a need for professional development opportunities.

Table 13. Questions on Instructional Choices

Have you recently taught a unit of instruction that incorporates or integrates some type of computer technology with students?		
	Count	%
Yes	32	24.06 %
No	98	73.68 %

74% of respondents say they have never integrated technology into any unit of instruction. This provides a strong argument, based on data, for developing professional development on how to integrate technology into music education.

Some of the best responses for examples of music technology integration included:

1. I used Smart Music to help soloists prepare for contest. I have used Band-in-a-Box to help jazz soloists practice improvising. I have used Ricci Adams website to teach music theory to high school and middle school students (www.musictheory.net). I regularly play professional recordings for my students and record rehearsals for them to evaluate.

2. We have midi projects built in to our Music Appreciation class. We primarily work with altering pre-recorded tracks, but eventually do some writing of our own and then I have the students transfer that new music using music notation software.

3. I have recently installed SmartMusic and am currently using it as a practice tool with all my orchestra students. My AP Music Theory students regularly use Finale to complete homework assignments.

4. I used training I received at school this year in 6+1 Writing Traits to modify a unit I do with sixth grade students. In the first assignment, the students were to write a diary as a person who lived in a music time period. In the second assignment, they were a famous composer writing to 6th grade students about their lives. In the third assignment, the students studied the time period and historical events and wrote a newspaper. In the final assignment, the students were "music reviewers" and wrote a review of a famous piece of music form their time period.

5. Research the different types of radio stations and how they are run, then they are to come up with their own radio station.

6. I had my students write a short song with exactly 100 notes for the 100th day of school. Since they were 5th graders, they had no composition skills and were instructed only to use notes they could play.

7. I used a digital video camera to tape student solos and ensembles, then imported it into iMovie so that I could use the cursor to show incorrect vowel shapes and incorrect breathing.

   For further examples please see the complete listing in Appendix H.

CHAPTER FIVE – CONCLUSIONS AND RECOMMENDATIONS

Summary

This project was developed during coursework at Boise State University and implemented by May 2005. An ongoing field test evaluation will continue through June 2005. The site will be monitored and evaluated for further needs and updates through online surveys, as well as an email newsletter. The piloting of this project will begin during the school year of 2005 – 2006. An exciting development has been the receipt of a grant to allow funding of the project for one year. The site has been included as a component of a model mentorship program for Iowa music educators.

The initial survey was delivered during the latter part of April 2005 (see Appendix A). During May 2005 subject matter expert reviews and one to one surveys were conducted (see Appendix J and K). The Subject Matter Expert reviews were quite positive. The area suggested for improvement was continuing to build the number of resources available.

The one to one survey results were more varied in their responses. Overall, those interviewed felt that the site meets the standard for effective Web curriculum creation. The responses from the questions ranged from neutral to strongly-agree. The areas of weakness that were identified included checks for understanding that are built in to assess users as well as some issues with graphics and scrolling. These could have been due to

some web browser incompatibility. Valuable comments and suggestions were made

regarding design issues. Revisions were made based on their recommendations.

After making revisions from the expert reviews, and the one to one survey, a field

test of the site began. The field test will remain in process through June 2005.

Conclusions and Recommendations

The initial survey pointed to a number of specific issues to consider about music

education and technology integration. According to survey results (Appendix H) music

educators are using technology for assessment, organization, to create lessons, and use

the Internet for research. However, actual technology integration is not reaching

classroom instruction or involving students. Almost 74% of survey respondents indicated

they have never integrated technology into any unit of instruction (Table 13).

Most music educators are following an established curriculum and trying to

incorporate standards into their curriculum work. However, technology integration is not

part of achieving this curricular goal. Many respondents were positive about enhancing

classroom instruction with technology, but are not highly motivated by expectations of

their school district. Music educators are aware of the need for efficient planning for

instruction and prefer to use a plan. They also indicated that planning is only a moderate

strength. The weakest area for music educators is finding lesson plans and resources on

the Internet. They are willing to use resource guides if available but need help finding or

creating these plans.

The highest usage ratings for technology equipment were computers and the

Internet (See Appendix I). This indicates an online resource network may be a good place

to start incorporating and encouraging technology integration with music educators. A complete list of survey results for technology tools may be found in Appendix I.

Professional development was also identified as an area where development is needed to encourage technology integration within the music education curriculum. It would be recommended to include as many professional development opportunities as possible with on-going support, through the resource network. This could include a mentoring component that pairs novice and experienced technology-using educators.

Future Implementation

The project site will continue will to grow throughout the next year in scope and depth of resources. An email newsletter has been implemented with the intent of drawing more visitors to the site. The newsletter will also be sent to Iowa school administrators and leaders of professional music organizations in an effort to promote the use of the site. The grant will enable this process to be accomplished in a professional manner and sustain the site financially for the coming school year.

The project will be piloted for the next school year with a final summative evaluation in the spring of 2006. The summative evaluation will use the same evaluation rubrics as the field test.

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APPENDICES

Appendix A. Needs Assessment Survey

Appendix B. Needs Assessment Survey Contact Letter

Appendix C. Website Examples / Templates

Appendix D. Basic Design, Graphics, Logo, and Color Palette

Appendix E. Website Map / Navigation Scheme

Appendix F. Formative Evaluation - Subject Matter Expert Rubric

Appendix G. Formative Evaluation - One to One Evaluation / Field Test

Appendix H. Survey Responses

Appendix I. Use of Technology Tools

Appendix J. Subject Matter Expert Responses

Appendix K. One to One Evaluation Responses

Appendix L. Additional Information

APPENDIX A

Needs Assessment Survey

The following survey instrument was administered as an online form using a Web Companion Filemaker Pro 7 Database. The Web Companion is software within Filemaker Pro 7 that allows you to serve the database online.

The purpose of this research is to survey computer technology needs for teacher practices and classroom preparation in the music curriculum.

The intended participants will include music teachers from the state of Iowa.

Technology Use in the Music Classroom Survey

Name	School
Contact Address	
Email address	
Degree Earned Years of Teaching Area of Music Instruction	
What is your average teaching class size?	
I am a certified music teacher (K-12) in Iowa. Yes No	

GENERAL QUESTIONS ON TECHNOLOGY ACCESS	Yes	No
I have a computer for teacher use.		
I have multiple computers in my classroom.		
I have access to computer labs in my school.		
I have access to a MIDI lab.		
I have an internet connection in my classroom		

Please write the number that corresponds most completely to your answer based on the following statements.

A. TEACHER PRACTICES, CURRICULUM AND TECHNOLOGY USE	5 = Strongly agree	4 = Agree	3 = Neutral	2 = Disagree	1 = Strongly disagree
I use a comprehensive musicianship approach toward teaching.					
I teach using units or themes of instruction.					
There are suitable materials available for this type of instruction.					
I create my own materials for instruction.					
I use Standards and Benchmarks as a guide for planning instruction.					
I incorporate Standards into my lessons.					
I am required to incorporate Standards into my lessons.					
I have an established curriculum that I follow.					
I use technology for student assessment.					
I use a published grading program.					
I use some type of computer- assisted grading.					
I use a specific MIDI assessment software program.					

Technology is used in a wide variety of instructional settings, including whole group, small group, and individualized instruction.					
My vision of learning incorporates technology as a key component that can promote a challenging curriculum and instructional practices that engage students.					
Technology use is a routine part of classroom curriculum and is an expectation at my school.					

A. TEACHER PRACTICES, CURRICULUM AND TECHNOLOGY USE (CONTINUED)	5 = Strongly agree	4 = Agree	3 = Neutral	2 = Disagree	1 = Strongly disagree
I use technology in my classroom to enhance the instruction of the music curriculum.					
Indicate the technology you use:	Daily	Weekly	Monthly	Occa-sional	Never
Metronomes					
CD Player					
TV/VCR					
Notation Software					

Smart Music (formerly Vivace)					
Instructional Software					
Scanners					
Tuners					
Internet					
MIDI Equipment					
Computer					
Multimedia Production					
Record Player					
DVD Player					
Tape Player					
Digital Camera /Video Camera					
LCD Projector					
Handheld Devices					
Other (Please list)					

B. TECHNOLOGY USE AND INTEGRATION	5 = Strongly agree	4= Agree	3= Neutral	2 = Disagree	1= Strongly disagree
I have used online instruction with my students.					
I use a class website.					
I have used a WebQuest.					
I have augmented instruction with the use of the internet.					
I have MIDI equipment in my classroom.					
I have a MIDI keyboard.					

I use a computer sequencing program.					
I have a computer with MIDI keyboard dedicated to classroom use.					
I have notation software. Please list which one.					
I have a basic working knowledge of the music technology equipment in my classroom.					
I understand how to use a MIDI keyboard.					
I understand how to use a sequencing program.					
I understand how to use audio and video equipment					
I understand how to use a notation program.					
I use music technology equipment at least once a week for instruction in my classroom.					
I use MIDI equipment at least once a week for instruction in my classroom.					

I use audio and video equipment for instruction in my classroom.					
I use a computer for instruction in my classroom.					

C. CLASSROOM PREPARATION AND TECHNOLOGY	5 = Strongly agree	4 = Agree	3 = Neutral	2 = Disagree	1 = Strongly disagree
I use a consistent system for planning efficient lessons.					
I use some type of computer work to write and create lesson plans.					
Planning is a strength in my teaching.					
I prefer to have a plan for instruction.					
I will use a teacher resource guide if one is available.					
I use technology to enhance my classroom preparation.					
I use the internet to research content for my instruction.					
I search the internet for appropriate lesson plans.					
I use teacher resources from websites.					
I rely on a computer to help me stay organized.					
I use word processing or spreadsheet to help organize my classroom.					
I use word processing or spreadsheet for recordkeeping.					
I have opportunities for professional development that address the skills teachers need to integrate technology into the curriculum.					

IDENTIFYING INSTRUCTIONAL CHOICES
Identify a unit of instruction that you have recently taught that incorporates or integrates some type of computer technology with students. Briefly describe below.
Title of Unit:
Type of Computer Technology used

Thank you for participating in this survey.

The collected data will provide information about the types of technology that are being integrated in the music classroom. It will also give direction to how new types of web-based learning might contribute to the components of teaching, planning, curriculum and instructional methods specific to a comprehensive music education. The data will be used to guide the construction of a music educator online resource network that will provide opportunities such as: technology resources for music classroom organizational use, incorporation of everyday technology use into classroom, websites, blogging, databases, provide resource lesson plans and mentoring.

❑ If you would be interested in continuing to participate in this survey process as a field tester, please indicate your response here.

❑ If you would like an electronic copy of the results of this survey, please indicate here.

APPENDIX B

Needs Assessment Survey Contact Letter

Date March 29, 2005

Dear Iowa Music Educator:

I am a graduate student in Educational Technology at Boise State University. I am conducting research to study technology needs in the music classroom for a Master's Degree project.

I am requesting your participation, which will involve completing a survey. Participation is voluntary. The survey is completed online though a web site and will take 15 – 20 minutes of your time.

The purpose of this project is to build an online resource network for music educators. The results of this study will be used as a needs assessment and will be used to focus the creation of an online resource network for music educators that will respond to current needs, serve as a repository for electronic resources, encourage and empower the use of technology in the music education community. The results of the research study may be published, but your name will not be used.

If you have any questions concerning the research study, please call me at (563) 382-3705.

Completion of the questionnaire will be considered your consent to participate.

The link (URL) for the survey is:

http://www.alpinecom.net/~fritzl/surveyproject/meosurvey.html

Thank you for your consideration and participation.

Sincerely,
Elizabeth Fritz
315 Riverview Dr
Decorah, Iowa 52101

APPENDIX C

Website Examples / Templates

Graphical Chart of Online Resource Network

      Adapted from web site templates of

RiverWithin: Center for Online Educators, Lisa

Dawley (RiverWithin, 2005).

APPENDIX D

Basic Design, Graphics, Logo, and Color Palette

Sample graphics and color combinations.

Sample Home page template
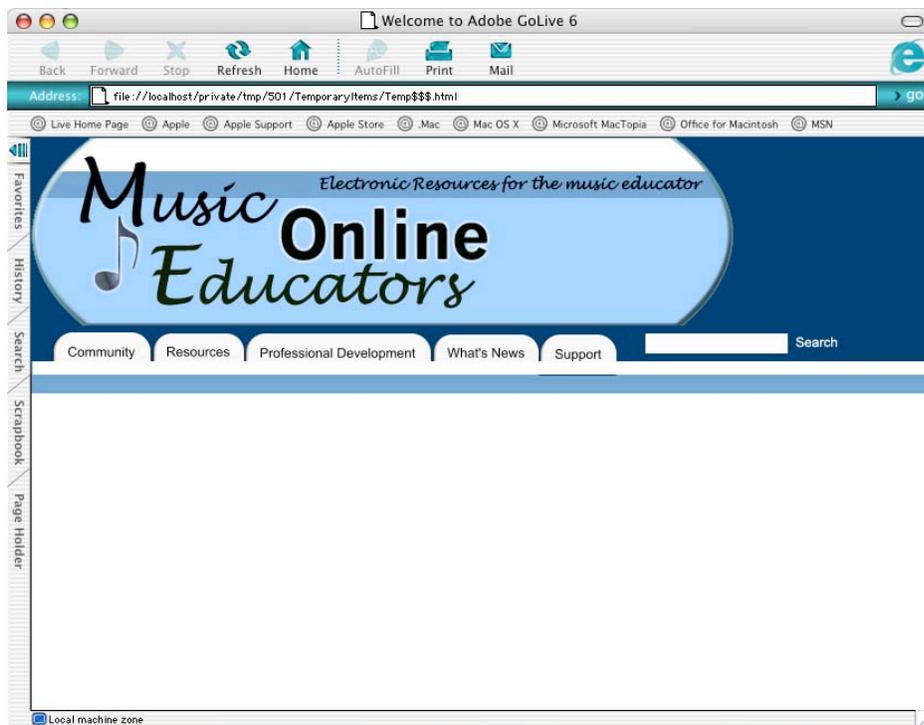
APPENDIX E

Website Map / Navigation Scheme

The purpose of navigation is to help find something, tell us where we are and give the user stability. The site will use a persistent navigational theme, keeping navigation elements on pages at all times.

Sample Navigation of Music Educators Online Resource Network

Home page

What's News

Articles, RSS feed of other sites

Tech Support

FAQ

Support Page

Community

Blog

Discussion Boards

By Topic

instrumental

vocal

strings

general music

Resources

Lesson Plans

technology integrated curriculum units of
instruction

Steps to Excellence

Technology Integration Ideas

hotlists of quickie technology use

Technology Organizers

specific music instruction tools using

technology

assessment rubrics

electronic gradebook

Professional Development

Mentoring

links to other sites

How to...

links to other sites

Online Courses

links to other sites

Using technology for teacher evaluation

links to other sites

APPENDIX F

Formative Evaluation - Subject Matter Expert Rubric

Subject Matter Expert Evaluation Rubric

Please use this rubric to assess the usability of Music Educators Online. It can be
viewed and completed online at http://edtech2.boisestate.edu/fritzl/smeeval.doc.

Give each question a score of 1, 2, or 3. Place the score for each question on the
line in the question box.

Category	1 Ineffective	2 Partially Proficient	3 Exemplary
I. Overview			
A.Is the site appealing and attractive to the user? **Score___**	Uses font, color, graphics, effects, etc. but they often distract the user.	Font, color, graphics, effects, etc. are appealing but occasionally distracts the user.	Font, color, graphics, effects, etc. are appealing to the user.
B. Will the users be engaged? **Score___**	Does not require learners to become actively engaged.	Sometimes requires learners to become actively engaged.	Always requires learners to become actively engaged in order to learn.
C. Are the resources organized in a sequential format? **Score___**	The sequence of resources is not logical.	The sequence of resources is somewhat logical.	The sequence of resources is logical and intuitive.
D. Are there any spelling or grammatical errors? **Score___**	The text has many errors in grammar, capitalization, punctuation, and spelling requiring major editing and revision.	The text has a few errors in grammar, capitalization, punctuation, and spelling requiring minor editing and revision.	The text has no errors in grammar, capitalization, punctuation, and spelling.

Category	1 Ineffective	2 Partially Proficient	3 Exemplary
II. **Process**			
A. Are directions clear for users? **Score**___	Directions are inadequate and incomplete.	Most directions are clear, but some are ambiguous or confusing.	Directions are clear and complete enough for users to perform required tasks.
B. Do directions give the users enough support to complete the tasks? **Score**___	Directions are written in a way that requires the user to ask for additional assistance to complete the task.	Directions are written in a way that the user may need assistance to complete tasks.	Directions are written in a way that the user can perform tasks without any assistance.

Category	1 Ineffective	2 Partially Proficient	3 Exemplary
III. **Resources:**			
A. Are there a sufficient number of resources? **Score**_____	The numbers of resources provided are not sufficient	There are several resources provided but the user may require additional resources.	Varied resources provide plenty of information for users.
B. Are links appropriate and relevant? **Score**_____	Many links are inappropriate for the intended user and are not relevant to the topic.	Most links are appropriate and relevant to the topic.	All links are appropriate and relevant to the topic.

APPENDIX G

Formative Evaluation - One to One Evaluation / Field Test

One to one evaluation and Field Test

      This technology survey instrument was created using suggestions from Dodge

(1999), Dodge (2001), and Billingsley and Cunningham (2003).

Music Educators Online Usability and Navigation Evaluation						
Please use the following criteria to evaluate the usability and navigational qualities of Music Educators Online (MEO) *For each category, please follow the criteria to decide if MEO meets the standards for effective Web curriculum creation.*						
-2 **Strongly Disagree**	**-1** **Somewhat Disagree**	**0** **Neutral**	**+1** **Somewhat Agree**	**+2** **Strongly Agree**		**Score**
Section 1: Aesthetics/Overall Visual Appeal						
-2	-1	0	+1	+2		
1. Appropriate graphic elements are used to make visual connections that contribute to the understanding of concepts, ideas, and relationships.						
2. Differences in type size and/or color are used well and consistently.						
3. Navigation is seamless and every step is clearly stated. It is always clear to the learner where they are now, where to go next, and how to go back to a previous page.						
4. The only underlined words are links.						
5. It is easy to tell which words are links.						
6. Each page has a meaningful title in the Title bar.						
7. No mechanical problems noted (e.g., broken links, misplaced or missing pages, badly sized tables, misspellings and/or grammatical errors) **Please note the location of any mechanical problems in the *Additional Comments* box at the bottom of this survey**						
8. There is adequate space between graphics and text.						
9. Graphics and text are put side-by-side where appropriate to minimize long scrolling pages.						
10. Fonts are used consistently. Any change in font is used to indicate a change in the purpose or source of the information.						

Section 2: Process					Score
-2	-1	0	+1	+2	
1. The process provides users coming in at different entry levels with strategies and organizational tools to access and gain the knowledge needed to complete the task.					
2. Resources are clearly related to the given subject matter.					
3. Resources are designed to take the users from basic knowledge to higher level thinking in the given subject matter.					
4. Checks for understanding are built in to assess users.					
Section 3: Resources					**Score**
-2	-1	0	+1	+2	
1. There is a clear and meaningful connection between all the resources and the information needed for users to accomplish the task.					
2. Links lead to resources that carry current, correct information about the given subject area.					
3. There are a variety of sources and these sources provide enough meaningful information for users.					

Total Score: _____/34

Additional Comments

Please write in any comments that you have regarding the usability and navigation of Music Educators Online.

Feel free to use this space to address concerns that you feel were not adequately addressed in the above sections of the survey.

APPENDIX H

Survey Responses

Yes Responses to Open-ended question:

Have you recently taught a unit of instruction that incorporates or integrates some type of computer technology with students?

8. Solo/Ensemble - Either myself or students type the pieces into finale for practicing with the accompaniment.

9. Phantom of the Opera WebQuest

10. Alfred Music Theory on mac

11. I used Smart Music to help soloists prepare for contest. I have used Band-in-a-Box to help jazz soloists practice improvising. I have used Ricci Adams website to teach music theory to high school and middle school students (www.musictheory.net). I regularly play professional recordings for my students and record rehearsals for them to evaluate.

12. Music Theory class learning how to do basic notation on Finale.

13. We have midi projects built in to our Music Appreciation class. We primarily work with altering pre-recorded tracks, but eventually do some writing of our own and then I have the students transfer that new music using music notation software.

14. Students researched history, etc., of the instrument they play and prepared a slide show of 10 slides to share with the class.

15. ear training

16. The students had to write an essay on their instrument using the Internet as one source. They also needed the Internet to complete a worksheet.

17. Students use a music theory program to learn and review basic music theory.

18. Ear Training on the Internet.

19. My students must create a musical portfolio where they create, research papers, raps, and interviews which all require the use of computers and the Internet.

20. I teach Music Theory and use Sibelius 3 to help them arrange/write works for various ensembles.

21. We always do Java during marching band season. We will also do a music theory (the class) with every piece of music technology that we own.

22. We used a notation program to write a duet. We then took into a sequencer program and put in horn parts to see how it would sound

23. CDROM for music theory and music appreciation classes

24. Tuning/Intonation mapping

25. Power Point presentation with performance

26. Taught music appreciation class how to read notation by going to musictheory.net and following lessons

27. I have recently installed SmartMusic and am currently using it as a practice tool with all my orchestra students. My AP Music Theory students regularly use Finale to complete homework assignments.

28. I used training I received at school this year in 6+1 Writing Traits to modify a unit I do with sixth grade students. In the first assignment, the students were to write a

diary as a person who lived in a music time period. In the second assignment, they were a famous composer writing to 6th grade students about their lives. In the third assignment, the students studied the time period and historical events and wrote a newspaper. In the final assignment, the students were "music reviewers" and wrote a review of a famous piece of music form their time period

29. I purchased Music Ace 1 & 2 the end of last year. I have begun requiring 5th grade band students to do one lesson per quarter on Music Ace and I plan to do it with 5th and 6th next year.

30. Music Theory students were using the program Musician to work on chord inversions

31. Research the different types of radio stations and how they are run, then they are to come up with their own radio station.

32. I had my students write a short song with exactly 100 notes for the 100th day of school. Since they were 5th graders, they had no composition skills and were instructed only to use notes they could play.

33. I used a digital videocamera to tape student solos and ensembles, then imported it into iMovie so that I could use the cursor to show incorrect vowel shapes and incorrect breathing.

34. solo and ensemble contest with Smart Music

35. Working on intonation, students print out reports with Intonation Trainer to understand the tendencies of their instrument.

36. I use a sequencing program to help my students learn their parts and practice on their own for solo-ensemble contest.

37. Music Appreciation - Power Point presentation of a period of music history.

38. Students used Alfred's Essentials of music theory v1-3 in independent instruction

39. We used SmartMusic to accompany solos.

40. We use computer rhythm drills and ear training drills.

Type of Computer Technology Used:

1. Midi keyboard, computer, notational software,

2. computer lab, WebQuest presentation

3. CD-ROM, mac

4. Macintosh G3 and eMac computers; Yamaha MIDI keyboards; Harmon-Karden computer speakers; Smart Music microphone; stereo equipment

5. Mac, Notation software, MIDI keyboard and interface

6. We use Cakewalk Home Studio and Glencoe's "Music" text for these projects. I normally use Print Music for notation software as it is easier to use for the beginner than Finale.

7. imacs, Apple Presentation program, CD recordings

8. Aurelia -

9. Computer, internet program, word processing

10. Alfred Music Theory

11. www.good-ear.com

12. Internet, word processing, PowerPoint.

13. Sibelius 3

14. Sibelius, Band in a Box, Overture, Garage Band, Alfred's Music Theory, Java, soon to add Smartmusic

15. finale, master tracks pro

16. Chromatic tuner.

17. Power Point, LCD projector

18. PC

19. SmartMusic

    Finale

20. Students used online resources to research the time period and composers. They also used the computer and speakers or a CD player to listen to music. They created their newspaper using a word processing program.

21. Music Ace 1 & 2

22. PC based Musician on a hand-me-down pc that works occasionally.

23. Internet, sound studio and garage band

24. Finale NotePad on Mac - no Midi keyboard.

25. iMovie, Optura 40 Canon Videocamera (Mini DV), iDVD to archive performances.

26. Smart Music, Tuner, Metronome

27. Intonation Trainer on a Mac

28. Master Trax

29. PC's

30. MIDI, e-mac, Alfreds music theory

31. SmartMusic software, Macintosh Computers

32. software-Tap It, Tap-It II, Rhythm Ace,

Music Theory online

APPENDIX I

Use of Technology Tools

Indicate the technology you use:	Daily	Weekly	Monthly	Occasional	Never
Metronomes	34.59%	39.85%	5.26%	21.05%	0%
CD Player	33.83%	46.62%	10.53%	9.77%	0%
TV/VCR	2.26%	15.04%	26.32%	53.38%	3.76%
Notation Software	8.27%	18.80%	12.78%	36.84%	23.31%
Smart Music (formerly Vivace)	3.76%	3.01%	2.26%	16.54%	75.19%
Instructional Software	3.01%	6.02%	9.02%	40.60%	41.35%
Scanners	0.75%	0.75%	6.77%	37.59%	54.89%
Tuners	46.62%	15.79%	3.01%	16.54%	18.80%
Internet	56.39%	9.77%	5.26%	22.56%	6.02%
MIDI Equipment	6.77%	12.03%	8.27%	28.57%	45.11%
Computer	74.44%	6.77%	3.76%	13.56%	2.26%
Multimedia Production	0.75%	3.01%	8.27%	45.11%	43.61%
Record Player	0.00%	3.76%	1.50%	25.56%	69.92%
DVD Player	0.75%	9.02%	13.53%	50.38%	27.07%
Tape Player	2.26%	22.56%	18.05%	46.62%	10.53%
Digital Camera/Video Camera	0.00%	3.76%	24.06%	54.14%	18.05%
LCD Projector	0.00%	0.75%	0.75%	37.59%	18.05%
Handheld Devices	11.26%	0.00%	2.26%	6.02%	79.70%

APPENDIX J

Subject Matter Expert Responses

Category		1 Ineffective	2 Partially Proficient	3 Exemplary
I. Overview	**Score**			
A. Is the site appealing and attractive to the user?	**SME 1** **3** **SME 2** **2**	Uses font, color, graphics, effects, etc. but they often distract the user.	Font, color, graphics, effects, etc. are appealing but occasionally distracts the user.	Font, color, graphics, effects, etc. are appealing to the user.
B. Will the users be engaged?	**SME 1** **3** **SME 2** **2**	Does not require learners to become actively engaged.	Sometimes requires learners to become actively engaged.	Always requires learners to become actively engaged in order to learn.
C. Are the resources organized in a sequential format?	**SME 1** **3** **SME 2** **2**	The sequence of resources is not logical.	The sequence of resources is somewhat logical.	The sequence of resources is logical and intuitive.
D. Are there any spelling or grammatical errors?	**SME 1** **2** **SME 2** **3**	The text has many errors in grammar, capitalization, punctuation, and spelling requiring major editing and revision.	The text has a few errors in grammar, capitalization, punctuation, and spelling requiring minor editing and revision.	The text has no errors in grammar, capitalization, punctuation, and spelling.

Category		1 **Ineffective**	2 **Partially Proficient**	3 **Exemplary**
II. Process	**Score**			
A. Are directions clear for users?	**SME 1** **3** **SME 2** **2**	Directions are inadequate and incomplete.	Most directions are clear, but some are ambiguous or confusing.	Directions are clear and complete enough for users to perform required tasks.
B. Do directions give the users enough support to complete the tasks?	**SME 1** **3** **SME 2** **2**	Directions are written in a way that requires the user to ask for additional assistance to complete the task.	Directions are written in a way that the user may need assistance to complete tasks.	Directions are written in a way that the user can perform tasks without any assistance.

Category		1 Ineffective	2 Partially Proficient	3 Exemplary
III. Resources	**Score**			
A. Are there a sufficient number of resources?	**SME 1** **3** **SME 2** **1**	The numbers of resources provided are not sufficient	There are several resources provided but the user may require additional resources.	Varied resources provide plenty of information for users.
B. Are links appropriate and relevant?	**SME 1** **3** **SME 2** **3**	Many links are inappropriate for the intended user and are not relevant to the topic.	Most links are appropriate and relevant to the topic.	All links are appropriate and relevant to the topic.

APPENDIX K

One to One Evaluation Responses

Music Educators Online Usability and Navigation Evaluation							
Please use the following criteria to evaluate the usability and navigational qualities of Music Educators Online (MEO) For each category, please follow the criteria to decide if MEO meets the standards for effective Web curriculum creation.							
-2 Strongly Disagree	-1 Somewhat Disagree	0 Neutral	+1 Somewh at Agree	+2 Strongly Agree	Participant Score		
Section 1: Aesthetics/Overall Visual Appeal					1	2	3
-2	-1	0	+1	+2			
1. Appropriate graphic elements are used to make visual connections that contribute to the understanding of concepts, ideas, and relationships.					0	+1	+2
2. Differences in type size and/or color are used well and consistently.					+1	+1	+2
3. Navigation is seamless and every step is clearly stated. It is always clear to the learner where they are now, where to go next, and how to go back to a previous page.					0	+2	+1
4. The only underlined words are links.					+1	+2	+2
5. It is easy to tell which words are links.					+1	+2	+2
6. Each page has a meaningful title in the Title bar.					+1	+2	+1
7. No mechanical problems noted (e.g., broken links, misplaced or missing pages, badly sized tables, misspellings and/or grammatical errors) **Please note the location of any mechanical problems in the *Additional Comments* box at the bottom of this survey**					+2	+2	+2
8. There is adequate space between graphics and text.					+1	+2	+2
9. Graphics and text are put side-by-side where appropriate to minimize long scrolling pages.					0	+2	-1
10. Fonts are used consistently. Any change is used to indicate a change in the purpose or source of the information.					+1	+2	+2

Section 2: Process					Participant Score		
-2	-1	0	+1	+2			
1. The process provides users coming in at different entry levels with strategies and organizational tools to access and gain the knowledge needed to complete the task.					0	+1	+1
2. Resources are clearly related to the given subject matter.					+1	+2	+2
3. Resources are designed to take the users from basic knowledge to higher level thinking in the given subject matter.					+1	+1	+2
4. Checks for understanding are built in to assess users.					0	0	-1
Section 3: Resources							
-2	-1	0	+1	+2			
1. There is a clear and meaningful connection between all the resources and the information needed for users to accomplish the task.					+1	+1	+1
2. Links lead to resources that carry current, correct information about the given subject area.					+1	+2	+2
3. There are a variety of sources and these sources provide enough meaningful information for users.					0	+2	+1
Total Score: 34					12	27	23

Additional Comments

Please write in any comments that you have regarding the usability and navigation of Music Educators Online.

Feel free to use this space to address concerns that you feel were not adequately addressed in the above sections of the survey.

Participant 3 -
I feel it is a great website. The first page has a lot of additional scrolling. The discussion boards are excellent. I just hope that more registered users will use them. It would be helpful to have a variety of educators with experience help those of us who are just starting. Overall, a GREAT website! Thanks for taking the time to put this together.

APPENDIX L

Additional Information

<u>IRB Information</u>

Describe the research:

This project will focus on creating an online resource network for music educators that will respond to current needs, serve as a repository for electronic resources, encourage and empower the use of technology. The purpose of this research is to study the needs for computer technology integration on teacher practices and classroom preparation in the music curriculum. The research will be collected using a needs assessment survey. The survey will identify technology use and needs of music educators and how they are incorporating technology in their classrooms. After the needs have been assessed the data will be used for feedback and focus for the creation of the online resource network. After the resource network has been created the participants will serve as field testers to assess the final product.

Participant Population:

The intended participants will include music teachers from the state of Iowa. The target population will contain at least 100 teachers and will be a cross section of educators that include different educational areas within the music educator system in Iowa. The accessible population will include general music teachers, instrumental music teachers (band and orchestra) and vocal music teachers. All music teachers in Iowa are certified Music K – 12.

Participant Recruitment:

    The participants will be identified and contacted via letters and/or emails distributed through Iowa music associations. These will include the Iowa Music Educators Association, The Iowa Bandmasters Association, The Iowa String Teachers Association and the Iowa Choral Directors Association.