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PROCEEDINGS FROM THE FIFTH, SIXTH, AND SEVENTH NATIONAL SYMPOSIUM ON MUSIC INSTRUCTION TECHNOLOGY (NSMIT)

On the following pages you will find abstracts for three NSMIT conferences: 2003, 2004, and 2005. The 2003 Symposium was held at the University of Illinois on June 26 through 28, and was organized by Dr. Kimberly McCord. In 2004, Dr. Sara Hagen hosted the sixth conference on June 17 through 19 at Valley City State University, North Dakota. The most recent conference was held in 2005 (June 16 through 18) at Hartwick College, Oneonta, New York. Dr. Jane Kuehne was the organizer.

The NSMIT is affiliated with the *Journal of Technology in Music Learning* (JTML). The *Journal* is committed to publishing the Proceedings of the yearly NSMIT conferences, and although under normal circumstances the Proceedings for each NSMIT conference would be published in the fall JTML issue for the corresponding year, editorial and production delays have put the last three years of Proceedings on the "back burner." This issue of the JTML, however, brings the Proceedings up to date, and we hope that we can get back on schedule with publication of Proceedings from the 2006 NSMIT.

Regardless of these delays, we believe that these Proceedings can provide useful information for our readers. As always, the NSMIT subscribes to (at least) three important tenants: (a) accelerating the exchange of ideas (regarding music technology and education) among practitioner and researchers, (b) encouraging appropriate uses of music technology in PreK-12 learning environments, and (c) disseminating findings to individuals who use, or want to use technology in music learning and teaching situations.

As you read the following summaries, you will notice that some are more detailed than others. Please feel free to contact the authors for additional information. You also should be aware that not all authors submitted abstracts of their presentations. However, contact Jack Taylor (taylorja35@aol.com) for copies of the 2003, 2004, and 2005 NSMIT programs. These programs will contain listings and professional affiliations for all NSMIT presenters.

FIFTH ANNUAL NATIONAL SYMPOSIUM ON MUSIC INSTRUCTION TECHNOLOGY (2003)

Student Attitudes about Instructional Technology

Nancy H. Barry, University of Oklahoma

The purpose of this study was to determine university music education students' perceptions of their skills and needs in three areas: (a) proficiency with technology, (b) use of technology for teaching/learning, and (c) need for technology training. A Technology Survey previously developed and validated for a public school system was adapted for music educators. The survey was administered to 45 students enrolled in university music education courses. Participants included 13 Graduate students (29%) and 32 Undergraduate students (71%).

Music education students expressed greatest levels of proficiency with technology applications most likely learned through informal and/or recreational activities such as *running a videotape on a VCR* (96% proficient), *using email* (93% proficient), *creating a document with a word processor* (91% proficient), and *using a CD player to play back recordings* (91% proficient). Most students (93%) reported owning a personal computer with the majority (73%) owning a PC rather than a MAC. Most (96%) had Internet access at home. Highest levels of technology use were reported for *email* (87% use regularly), *word processing* (86% use regularly), *playing a videotape on a VCR* (84% use regularly), and *browsing the Internet* (82% use regularly). Use of technology specifically related to music and teaching (such as Finale, MIDI, and music instructional software) was relatively low.

Students seemed interested in learning more about instructional technology and expressed high to medium need for training in a number of areas with greatest needs reported for *creating a homepage on the WWW* (49% high need, 16% medium need), *using a music editor such as Finale* (42% high need, 27% medium need), and *using music education software applications* (36% high need, 31% medium need).

General attitudes about music instruction technology tended to be very positive with students expressing confidence in the importance of instructional technology in music education and keen interest in using technology in their own teaching and learning.

These results suggest that music education students need additional training to prepare them to incorporate instructional technology in their learning and teaching more fully. This is a small study carried out at one institution. Additional research is needed to determine if similar results are obtained in other settings.

Band in a Box for the Music Teacher

Laura Ferguson, Indiana University of Pennsylvania

Band in a Box can be used to quickly and easily to make accompaniments for the music classroom. The use of Band in a Box can improve music teaching by allowing teachers to move about freely in class, personalize song accompaniments for classrooms or individuals, easily make accompaniments available to students through web pages, assist with classroom improvisation tasks, create templates for compositional work in MIDI labs, and to use very interesting accompaniments for singing and playing. Creating accompaniments in Band in a Box is a six-step process which can easily be mastered by teachers with a minimum of technology experience.

A Review of Music Software K-12

Sanford Hinderlie, Loyola University New Orleans

I have been researching the availability of music software for educational purposes for several years. Some software has been suspect in its credibility pertaining to pedagogy in music education. Many music education programs have come and gone in the ever-changing environment of the software publishing world. Presently, the music education software industry has blossomed and is now credible. I have sifted through extensive lists of software and have evaluated each program for its pedagogical validity at the K-12 level. I use some of this software in my music technology courses at Loyola University. These courses include *Music Software, Educators K-12*, and also in these music education courses: *Music Essentials and Elementary Methods* and *Psychology of Teaching Music in Secondary Schools,* taught by Gwen Hotchkiss, associate professor of music education at Loyola University. Loyola students also are using some of these programs as interns in the New Orleans K-12 educational community. Undergraduate and graduate students as well as professors have evaluated most of this software.

The software is identified in several categories at the K-12 level, including sequencers, music notation, digital recording, and CAI for ear training, theory, piano, improvisation, jazz and music history. Both Windows and Mac operating systems are represented. Workstation formats are discussed, ranging from small labs of one computer and a synthesizer to large labs of 32 workstations such as we have at Loyola. How to incorporate the software into various curricula and various lab sizes is discussed. Textbooks about music technology will be listed and critiqued. [Editor's note: A comprehensive list of music software was given to the audience and syllabi for specific courses were offered. Demonstrations and hands-on activities using selected software were presented].

The Design and Validation of a Music Achievement Test Based Upon the K-4 National Standards for Music: A Pilot Study

Kimberly C. Walls, Auburn University
Laurie Gilbreath, Auburn City Schools
Donna Pascoe, Columbus State University

Virtually all academic areas have standardized assessments that measure student achievement of specific objectives and curriculum standards. The majority of music programs, however, have no standard means of assessing whether state and national achievements are being reached (Lehman, 1998). This paper describes the initial development and validation of an achievement test to measure students' achievement of each of the fourth grade standards as outlined in the *National Standards for Arts Education* (MENC, 1994). The intent of the project was to design a test that is comprehensive, yet efficient, using as little class time for administration as is feasible.

Method

Participants

The research design was evaluated by a University Office of Human Subjects as exempt from Institutional Review. The test was administered to all students ($N = 64$) in three intact fourth grade music classes in a small elementary school during the 2002-2003 school year. The testing schedule was arranged at the convenience of the music teacher, researchers, and school schedules and spanned the time from early November to late February. The testing periods were during the regular biweekly 40-minute class periods. Students were observed and field notes were collected concerning their adeptness with the test technology and their questions about test content.

Test Development

Five graduate students enrolled in a graduate level music education measurement and evaluation course designed a test of musical achievement in collaboration with the authors. They defined and described the conceptual framework for the test, using the NAEP framework (1998, 2001) as a model. The test included multiple choice items and free response items as well as authentic performance based tasks, such as singing, playing instruments, evaluating music, and composing music.[1]

Content validity was accounted for in two ways. Since the performance tasks were to assess several standards, a matrix was built for each objective, ensuring that there were at least 3 multiple choice and 3 performance tasks related to each NAEP objective and each National Standard.[2] Each performance task objective had benchmark descriptions for minimally competent and competent performance levels.

A panel of three general music teachers examined and evaluated each item for musical age-appropriateness. All items were determined to be appropriate for the 4th grade level. Some items were edited due to this process, such as changing keys of excerpts. A reading expert evaluated the test using Microsoft Word tools to assure the appropriate reading level.

The multiple-choice and free-response items were administered through a Web site that utilized PHP scripts to collect data. Students were assigned "secret test numbers" to log in to the exam. Performance item data were collected through recording audio tapes, digital audio files, and video tapes. Students were identified by "secret test numbers" only.

Worksheets and audio CDs were developed for the performance item test administration. Performances were recorded using laptop computers and video cameras.

An adjudication team rated the free response questions and the performances using benchmark rubrics. A sample of the responses were used in training the judges.

Answers to the multiple choice questions and the evaluations of the free response questions were entered into SPSS 11 to generate descriptive statistics and internal consistency estimates. An item evaluation was calculated manually.

Results

The interjudge reliability for the free response items was 97%. SPSS 11 was used to calculate the distribution of total scores for the dichotomously scored items. The scores for the dichotomous items were symmetrically distributed ($N = 52$, $M = 6.2$, $SD = 2.14$).

Descriptive statistics were calculated. An item evaluation (see Table 1) including discrimination and difficulty indices was conducted upon the multiple choice items, as well as an effectiveness of distracters analysis.

Reliability (internal consistency) of the multiple choice items portion of the test was estimated to be low (alpha = -.0666) and Spearman-Brown split half reliability was also low (alpha = .2745).

There were insufficient data to statistically analyze responses from other sections of the test. Suggestions made by the participants, teacher, and judging teams concerning the multiple-choice, free response, and performance items were recorded.

Table 1

Item Discrimination Index, Item Difficulty Index, and Distracter Evaluations for Multiple Choice Items.

Item	Discrimination		Difficulty		Distracter Evaluation		
	Alpha	Evaluation	Alpha	Evaluation	Dis. 1	Dis. 2	Dis. 3/4
Question 1	.764	Very Good	.568	Difficult	Effective	Effective	
Question 2	.294	Marginal	.686	Difficult	Revise	Effective	
Question 3	.411	Very Good	.698	Difficult	Effective	Effective	
Question 5	.177	Poor	.392	Too Difficult	Effective	Revise	
Question 6	.352	OK	.200	Too Difficult	Effective	Revise	
Question 7	.411	Very Good	.780	Difficult	OK	Effective	
Question 8	.235	Marginal	.900	Easy	OK	OK	
Question 9	.588	Very Good	.680	Difficult	Effective	Effective	
Question 11	.000	Poor	.529	Difficult	Effective	Effective	Effective
Question 12	.470	Very Good	.320	Too Difficult	Revise	Effective	
Question 13	.411	Very Good	.580	Difficult	Revise	Effective	OK

Discussion

Considerable caution must be exercised before making extensive test changes based on the small number of participants in this study. Results may be more of a reflection of the particular sample population, teacher instruction, program curriculum, or question order than the test question construction. However, the piloting of the test has resulted in several suggestions that should improve the test process and performance item design.

Although no great problems were encountered with the web-based items, they should be reauthored in another computer program to avoid potential problems caused by Internet use. The program would also make it easier for students to self-administer the performance items.

Attention to specific vocabulary words should increase the validity and reliability of the test. Finally, students need to have more time to practice for the performance recordings. Ideally, students would be practicing in the classroom before going to the recording area.

References

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Author Note

The following students created the initial test design: Doug Baker, Jay Davis, Tina Davis, Kathy King, and Chris Walker.

We thank Bill Walls, Jeff Gilbreath, and Kathy King for assisting with data collection. We also appreciate Bill Walls' and Jeff Gilbreath's assistance with performance item analysis.

Endnotes

[1]Contact Kimberly Walls at Auburn University for a copy of the test.

[2]Contact Kimberly Walls for a copy of the matrix.

Sight-reading: Online Resources for Developing Better Music Reading Skills

Bruce Hammel, Virginia Commonwealth University

Sight-reading is the act of reading a piece of music that has not been seen or heard by the performer in advance, and therefore must be interpreted at sight. Many music educators regard the ability to sight-read accurately an important indicator of a student's fluency in music reading. Therefore, sight-reading is often used as a major component of auditions for bands, orchestras, and choruses, and for keyboard exams.

One can find printed materials that consist of sets of original melodies that students can use to practice this skill. However, once a melody has been performed, it no longer can be used again by the same student for sight-reading. In addition, print materials do not provide students with the opportunity to hear melodies played correctly unless they have a competent musician/teacher to do this for them.

With the emergence of multimedia personal computers and almost universal Internet access, addressing music reading skills via online instruction and drill has become possible. The purpose of this session is to provide a brief survey of online resources available in this area. Web searches using the terms: "music sightreading," "music sight-reading," and "music reading" produced many hits, but few web sites actually offer music sight-reading directly online. Most of the investigated sites either advertised print

materials or software for purchase, tips on how to sight-read, or criteria/ results of various competitions where a sight-reading component was used.

The few sites with significant available musical resources varied in approach from simple note identification drills to advanced melodic reading with playback and transposition. While only a preparatory skill for music reading, note identification still is an important component to learn. For some simple, flashcard style note naming drills, the following Websites are recommended.

- Javamusic: http://web1.hamilton.edu/javamusic/default.html Intended primarily for music theory drill, the Javamusic note-reading drills offer good practice in this basic skill.
- *Piano Music Sight Reading Practice* by Jason Harlow: http://astro.sci.uop.edu/~harlow/piano/ This site is straight forward and easy to use. Students are asked to identify random notes in bass and treble clefs in three levels of difficulty.

A few sites offered examples of complete musical phrases. The Florida Vocal Association web site (http://www.fva.net/allstate-sight_reading.htm) has sample sight-reading material in Adobe Acrobat .pdf files. The examples are organized into four basic categories, middle school treble, middle school bass, high school treble, and high school bass. For middle school, there are six melodies available in each of three levels of progressive difficulty. The high school files contain 14 melodies in each of six levels. These files were removed from the site shortly before this conference. It is possible that new material will appear in the future.

A similar set of examples is available for piano at "The Practice Spot" (http://www.practicespot.com). These examples, however, are presented directly in the browser window as image files and also allow MIDI playback. The 101 short pieces (2-4 measures in length) found here are arranged in four levels of difficulty. The first level features whole notes in one hand with quarter notes in the other. More advanced levels cover a wide range of rhythmic, melodic, and other challenges culminating in problems such as 7/8 time, syncopation, and complete independence of hands. In addition to sight-reading examples, this site offers many other excellent resources for the music educator (particularly piano teachers) and is highly recommended.

For guitarists, there is an introduction to reading music and some basic examples for practice at the website of Ted Vierra, jazz guitarist: (http://www.tedvieira.com/onlinelessons/sightreading101/doorway.html). Of some value here for non-guitarists may be the rhythm exercises which introduce

basic rhythmic values up to the eighth note and include ties and dotted quarter notess. MIDI playback is provided for all 30 examples.

The only site I found that is dedicated first and foremost to providing online material for sight-reading practice is SightReadThis.com (http://www.sightreadthis.com). This site focuses on the problems of single line reading. The over 150 melodies (and growing) are organized into seven levels of difficulty ranging from beginner to advanced high school or college music major. Melodies are displayed in the browser window as .gif images and therefore require no plugins. Each melody allows MIDI playback and is correctly transposed for the instrument selected.

One of the unique features of SightReadThis is the option of transposing each melody to any key, clef, or range. This enables a student to focus practice on specific areas of need. For instance, if they are learning to play in a new key signature such as Db major, they may choose to start with the basic melodies of level 1, but transpose each melody to Db major. In the same manner, students can focus on the extreme high or low range of their instruments or practice in a different clef (including alto and tenor). SightReadThis also maintains progress reports for each user and offers administrative functions for band, chorus, or orchestra directors. There are additional printable melodies for directors to use for assessment in each level. Future features include a vocal melodies database, an online metronome, and a "change beat value" option.

As technology continues to improve and a larger percentage of music students get Internet access, more opportunities for improving music reading may arise. Conference participants are invited to visit vcuwinds.org for direct links to the sites presented here and are encouraged to submit links to new resources at any time.

Reaching Out to the Rest: Teaching Music Composition to Non-Performance High School Students

David Fodor, Evanston Township HS, Evanston, IL

This session described an ongoing effort to help nonperformance music students learn more about music through composition and arranging tasks on computers. The model for this approach is a class at Evanston Township High School called Electronic Music. The course consists of two semester long classes, EMU I and EMU II. Course curriculum for both classes and examples of recent student compositions are presented. Opportunities for students interested in music composition beyond the classroom are described, and a glimpse into the future for the electronic music class describes new software and hardware upgrades that will enhance the curriculum.

Sampling and Looping Digital Audio

Richard Repp, Georgia Southern University

The procedures of sampling and looping digital audio have become an accepted method for producing rhythm tracks in today's popular music. Until recently schools have been less likely to teach digital-audio based techniques in classrooms, relying on similar MIDI tools instead. Reasons for the choice of MIDI over digital audio usually focused on the expense of digital audio software, the need for high end processors, and the complexity of digital audio. These hurdles are no longer existent, as the computers of today can easily handle processing of digital audio, and the software involved is inexpensive, or even free. I will demonstrate how to produce looped audio for no additional cost to a school system that already features computers with a sound card. Using the Pro Tools free software and public domain audio files easily found on the Internet, I will review the procedure of putting together a simple percussion part one instrument at a time and then adding effects to that loop. I will close with a discussion of how to translate these loops into an actual song

SIXTH ANNUAL NATIONAL SYMPOSIUM ON MUSIC INSTRUCTION TECHNOLOGY (2004)

An Electronic Music Class as an Alternative to a Music Appreciation Class

Robert Haselhuhn, Madison KS High School

Four years ago I was hired to teach instrumental music at Madison High School. Along with my other duties I was given two periods of Music Appreciation. The administration had decided the year before to change the regular Music Appreciation class into an Electronic Music (E-Music) class. They had budgeted $5,000 to make the change.

When I accepted the position, the administration gave me $5,000 and told me to buy what I needed to begin an E-Music class. My experience with computers and music software was limited, so I did some research to make a better decision. Finally, I bought hardware and software, and began to plan for my class.

My expectations were too high for the class, and the first year was a disaster. Since then I have made changes that better reflect my students' abilities and their musical tastes.

My presentation will cover those first expectations, my changes in hardware, software and class expectations since that first year. I will bring a computer station to show what we have, and what we do with it.