

How Technology Can Enhance Student Learning

Kansas State University
Summer Symposium Keynote
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A new generation of tech savvy students

- Use technology to:
 - Do their homework
 - Acquire information
 - Entertain themselves
 - Find their way around (GPS)
 - Communicate with each other
 - Cook their food

Traditional Music Programs

■ General Music

- Listen to the works of noted composers (passive)
- Play simple tunes, using recorders, Orff instruments,
- Sing, simple tunes
- Learn music by rote

■ Band

- Would you like to play an oboe? Trumpet? Drums?
- Play the music of other composers
- High attrition rate as students enter middle school

■ Orchestra

- Would you like to play a violin? Bassoon? Drums?
- Play the music of other composers?
- High attrition rate as students enter middle school

■ Choir

- Would you like to sing? In a choir? Alone? In a play?
- Sing the music of other composers.
- High attrition rate

Add Technology to:

■ General Music

- Make your own music in notation programs (Vermont MIDI project-Sibelius) and new music curriculum Groovy Music.
- Play simple tunes, using recorders, Orff instruments, that the student composed in a notation program.
- Sing, simple tunes, that are accompanied by Garageband (Session on PC) "Band in a Box" accompaniments made by students
- Learn music by writing it (the same way we learn English)
- Produce music CD's, and multimedia pieces

■ Band

- Would you like to play an oboe? Trumpet? Drums? Synthesizer, with rhythm? Send your arrangements to others over the internet?
- Play the music of other composers, as well as your own compositions. How about Hip-Hop or Rap? (Very cross-curricular)
- Use Computer Aided Instruction (Musition and Auralia) to drill and practice ear training and music theory.
- Programs using technology to augment music programs see a rise in participation.



■ Orchestra

- Would you like to play a violin? Bassoon? Drums? Compose? Arrange? How about play in MIDI ensembles, using different instrument sounds to play traditional repertoire?
- Play music that has been written/arranged by students
- Learn theory and aural training using Computer Assisted Instruction, to help you better play your instrument.
- Record your ensembles for evaluation, as well as archiving.
- Create School Multimedia Yearbooks?

■ Choir

- Would you like to sing? In a choir? Alone? In a play?
- Sing, record and share music you composed?
- Use CAI to practice ear training. Learn music theory the same way.
- Make quality recordings of your soloists and groups using ProTools (in conjunction with Garageband, Band in a Box, etc.)



A new generation of tech savvy MUSIC students

- **Can use technology to:**

- Help them compose music, (that plays back like a lot of talented friends), using notation software. Share this online.
- Allow them to experience the “rush” of creativity, without having to invest years first learning a traditional instrument (the computer becomes their “instrument”)
 - Garageband, ProTools, Groovy Music, Session, Sibelius
- Record their vocal and instrumental performances, and then share them online.



- Practice using evaluation software (like SmartMusic), but also practice parts or improvisation, (anywhere) against the ensemble they'll perform with, using Sibelius' Scorch.
- Instant practice CD's, using handheld digital recorders (MicroTrackII).

TI:ME Technology Areas

1. *Electronic Instruments*
2. *Music Production*
3. *Notation Software*
4. *Instructional Music Software*
5. *Multimedia*
6. *Productivity Tools, Information Processing, Lab Management*
7. *Web/Internet*

MENC Standards

1. *Singing*
2. *Performing on Instruments*
3. *Improvising*
4. *Composing/Arranging*
5. *Reading/Notating*
6. *Listening/Analyzing*
7. *Evaluating*
8. *Understanding Music and the Arts*
9. *Understanding Music and Culture*



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Technology Strategies, Standard #1

Singing alone and with others, a varied repertoire of music

The student . . .

- Improves pitch accuracy using computer assisted instruction (CAI) (ie., Auralia)
- Improves rhythmic accuracy using CAI software.
- Isolates individual parts for singing practice/rehearsal using MIDI sequencing software.
- Practices singing one on a part using practice and performance devices (Smart Music). Scorch
- Searches for MIDI files using the Internet
 - Learns how to change tempo, key and timbre of a piece.



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Technology Strategies, Standard #2

Performing on instruments, alone and with others, a varied repertoire of music.

The student. . .

- Performs melodic, rhythmic and chordal parts using electronic instruments
- Performs one on a part using electronic instruments
- Learns to play an instrument using appropriate computer assisted instruction software
- Performs music of diverse genres and cultures using electronic instruments and sound modules.
- Demonstrates the ability to maintain a steady beat using MIDI percussion controllers or keyboards
- Searches for MIDI files using the internet.



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Technology Strategies, Standard #3

Improvising melodies, variations, and accompaniments

The student. . .

- Improvises uses electronic instruments, with their wide range of pitched and non-pitched sounds
- Using built-in rhythm and chordal patterns, student explores and composes harmonic progressions, melodies and variations.
- Creates original harmonic progressions using “single finger” left hand bass function of electronic keyboard.
- Uses notation software to pull out improvisations
- Uses auto-accompaniment (Band in a Box) to get ideas for improv; also practice aid.

Technology Strategies, Standard #4

Composing and arranging music within specific guidelines

The student. . .

- Creates sound effects to accompany readings and dramatizations (Garageband)
- Composes original compositions using notation software (Sibelius)
- Arranges MIDI files into new arrangements, using notation software, changing timbres.
- Demonstrates elements of music using MIDI sequencer
 - Melody, harmony, rhythm, timbre, form, ritards, accel.
- Composes piece demonstrating ranges of traditional instruments.
- Records a MIDI sequence, and synchronizes it with a movie soundtrack. (Sibelius or ProTools)
- Learns about sound by editing acoustic sounds using digital sound editing software.



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Technology Strategies, Standard #5

Reading and notating music

The student. . .

- Uses notation software to enter notes in step or real time on a virtual staff.
- Uses CAI software to drill and practice reading notes, melodies and rhythms.
- Uses CAI software for melodic and rhythmic notation drills.



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Technology Strategies, Standard #6

Listening to, analyzing and describing music

The student. . .

- Uses CAI software to help develop listening skills for intervals, rhythmic and melodic motives and error detection, major and minor chords and chord progressions. (Musition, Auralia)
- Uses the internet to collect information about music, composers and different styles and genres.
- Creates a multimedia presentation on a composer or other musical concept. (Sibelius, ProTools, Garageband)
- Develops the ability to identify musical forms and similar harmonic elements using CAI software.

Technology Strategies, Standard #7

Evaluating music and music performances

The student. . .

- Develops evaluation skills using CAI and multimedia software. Finds information to aid in the evaluation of music such as music background and performance practices using the internet.
- Uses CAI software (Instruments) to listen to various instruments, instrumental abilities (trills, mutes, pizz), different tonguing etc.
- Uses notation program to capture performance (rhythmic).
- Uses recording devices to listen objectively to instrumental or vocal performances.

Technology Strategies, Standard #8

Understanding relationships between music, the other arts and disciplines outside the arts.

The student. . .

- Using multimedia authoring software (ProTools, Sibelius, Garageband Powerpoint) create class projects (a school yearbook DVD, for instance). Organize to demonstrate how the arts and other disciplines relate to music.
 - Podcast, using Apple's Garageband.
 - ProTools, to pull in class video, or archives of videos, to which music can be added (MIDI files or student input).
 - Have students write "voice overs"
 - Have another student with a great voice do the "voice over".
 - Sibelius allows video input, also, with music syncing.
 - Save any of above as Quicktime movies. Post on website.

Technology Strategies, Standard #9

Understanding music in relation to history and culture

The student. . .

- Recognizes relationships among music, history and culture using CAI software. (Compass)
- Creates various tunings on an electronic instrument to demonstrate the evolution of tunings throughout the history of music.
- Locates historical and cultural information using the internet.
- Analyzes music of various cultures and styles using notation and MIDI sequencing software.
- Exchange information on music, history and culture with other students throughout the world using the Internet (Second Life).



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Most of all, technology will

- **Bring your music program into the 21st century.**
- **Bring the non-traditional music student into your music program.**
- **Give students tools they can use in life.**
- **Bring music out of the band/orchestra/choir room, into the entire educational arena.**
- **Excite and inspire your students to become creative in their own right.**

Thank You for your kind attention

■ **The End**

Or is it the beginning????



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