Areas of Music Technology

Technology and Music Education
MUS 17F/673

The Areas

1. Electronic Musical Instruments
2. Music Production
3. Music Notation Software
4. Technology-Assisted Learning
5. Multimedia
6. Productivity Tools, Classroom and Lab Management

More on each area…

Electronic Musical Instruments

1. Operate electronic instruments
2. Understand their unique characteristics
3. Use them in the classroom
4. Connect instruments to computers and other instruments using MIDI
5. Create layered and split keyboard sounds for performances
6. Choose and edit sounds from stored libraries
7. Create sounds using an electronic instrument

Electronic Musical Instruments

8. Create simple to complex musical pieces
9. Teach dexterity and technique
10. Teach musical processes with electronic keyboards.
11. Integrate electronic instruments into existing ensembles
12. Create entirely new electronic ensembles
13. Operate sound reinforcement equipment
14. Set up and connect electronic instruments for use in concerts in the school environment

Music Production

1. Record and edit music using music production software and hardware
2. Understand the various processes and procedures used for recording and editing music including sequencing, looping, signal processing, and sound design
3. Understand the types of data involved in music production
4. Store and convert digital audio data

Music Production

5. Store and convert MIDI data
6. Understanding the different applications and capabilities of audio and MIDI data
7. Use software synthesizers to create digital audio under MIDI control
8. Actively apply technology tools in the music production process
9. Enter notes in a MIDI sequence either one at time (step-time) or by performing (real-time)

Music Production

10. Enter musical expressions by changing controller values to produce a more musical performance
11. Produce transcriptions in standard music notation
12. Use advanced editing and production techniques
13. Perform complex mixing processes
14. Integrate digital audio with MIDI data in the sequencer environment

Music Production

15. Demonstrate orchestration and arranging techniques allowing students to immediately hear the example
16. Change tempos, transposition, timbre, and dynamics
17. Teach musical concepts using music production software and hardware
18. Teach performance on traditional acoustic instruments using the MIDI sequencer as accompaniment

Music Production

19. How to access music data in loop form
20. How these loops are imported into the production process
21. How to guide students in the crafting of musical phrases using loops
22. How to put all of this into the larger context of music production processes
23. Expose students to music of different cultures
24. Understand the building blocks of musical style and form through the use of looping tools

Music Production

25. Understand sound, and how various signal processing techniques can be used to enhance audio in the production process
26. Add effects such as reverb, chorus, and echo
27. Improve clarity of a mix using equalization
28. Supervise students in their production projects
29. Use music productions in live performance
30. Use music production techniques to and for improving the sound quality in recordings of student performances

Music Notation Software

1. Create a score for any musical ensemble or instrument
2. Enter notes using various approaches including typing, point and click, step entry, and real-time entry
3. Edit scores
4. Transpose songs
5. Cut, copy, and paste music
6. Add expression markings

Music Notation Software

7. Layout a complete musical score
8. Extract parts
9. Integrate notation files into word processing software for text handouts and exams
10. Integrate notation software into classroom activities
11. Demonstrate relationships between symbol and sound
12. Guide students in the use of notation software as a creative tool for composition

Music Notation Software

13. Guide students in learning the basics of notation
14. Teach students to hear what they write

Technology-Assisted Learning

1. Have a broad familiarity with available instructional software
2. Understand how to install, use, and integrate these programs into their music curriculum taking full advantage of the record-keeping, evaluation, and instructional support CAI software provides
3. Prescribe instructional software to provide students with a patient practice partner, allowing self-paced progress through subject matter

Technology-Assisted Learning

4. Monitor class work and record progress using CAI software
5. Integrate practice tools into their curriculum
6. Guide students in better use of them in their personal practice sessions
7. Integrate these practice tools with music notation and sequencing programs
8. Create additional materials for student practice, more closely aligned with the school's curriculum

Technology-Assisted Learning

9. Connect computers to the Internet
10. Share files between computers of varying platforms
11. Effectively search and retrieve information
12. Encourage students to use the Internet to find answers and to become life-long learners beyond the classroom experience

Technology-Assisted Learning

13. Encourage students can use this vast information resource to research any topic Many libraries, both public and private, allow students to search their catalogs online and will give them the references requested

Multimedia

1. Understand basic multimedia authoring strategies including slide show presentations, electronic portfolios, and/or internet web sites
2. Create materials for use in their classes
3. Guide their students in learning multimedia authoring
4. Guide students inc collecting multimedia materials from Internet
5. Guide students in compiling media rich reports.
6. Record and edit sound

Multimedia

7. Capture video
8. Acquire images from digital cameras
9. Scan pictures and drawings

Productivity Tools, Classroom and Lab Management

1. Create, edit, and store information or data in digital form
2. Operate and configure operating systems as needed
3. Take data from one program to another converting file formats as needed
4. Manage the work of being a teacher
5. Manage a technology facility, be it a single computer and MIDI workstation in a classroom or a full music technology multi-station lab

Productivity Tools, Classroom and Lab Management

6. Understand the basic functionality of the personal computer, the various input and output peripherals, and the variety of media used to store, transport, and retrieve information
7. Know the basic software tools used to manage a music program
8. Use word processing software to enter, edit, format and print text-based documents.

Productivity Tools, Classroom and Lab Management

9. Use word processing software to create concert programs, class handouts, tests, and various other office-related documents
10. Use database software can be used to store and retrieve records for instrument and music inventories, class lists, attendance, and grades
11. Use spreadsheet programs to assist with the management of data including budget management, bookkeeping, or grades

Productivity Tools, Classroom and Lab Management

12. Use presentation software to create overhead transparencies and slides for class lectures, or for presentations made to administrators, funding agencies, and parent groups
13. Use graphics programs to integrate illustrations into classroom presentations or word processing documents
14. Install and run various applications programs
15. Enter data, format pages, and print out reports

Productivity Tools, Classroom and Lab Management

16. Manage class activities and lab systems
17. Provide for storage of student files
18. Protect against computer viruses
19. Develop strategies for maintaining their facilities in a manner that ensures effective use of the workstations while accomplishing their program needs and the goals of their curriculum
20. Understand the way that multiple systems work together in a networked lab environment

Productivity Tools, Classroom and Lab Management

21. Understand how audio, MIDI, and computer data is managed and distributed between systems
22. Operate networked server computers on which teachers may store classroom materials, and where students may post assignments for review. Today's teachers must understand how these systems work to most effectively use them in support of better teaching and learning

Productivity Tools, Classroom and Lab Management

23. Specify equipment needs for their classroom or lab facilities
24. Understand the interaction and configurations for electronic instruments, computers, MIDI interfaces, sound reinforcement, projection systems, and sound and data networking.
25. Manage music technology installations

Once Again…The Areas

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