

References and Slide Images to Accompany

Technology's Role in Achieving Creativity, Diversity, and Integration in the Undergraduate Music Curriculum

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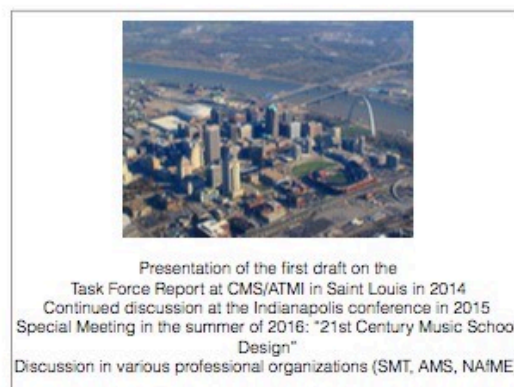
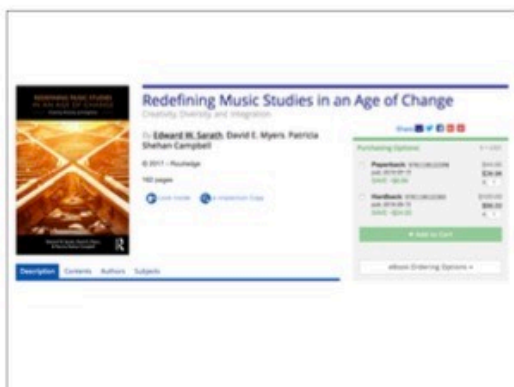
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Ode to TFUMM
(To the rhythm of Jack The Beanstalk)

Tee-fu-fo-fumm;
I smell the blood of a changed curriculum.
Be it alive or be it dead,
I'll grind its syllabi before we lose our head.



Need for fundamental change


From Report:

The creative and expressive dimensions of music have been progressing rapidly over the past several decades. Factors include an **expanding, interconnected global society with cross-cultural influences** and **crossover stylistic expressions**, performance and production happening in **electronic as well as acoustic modes**; **advances in technology**, access to and transmission of music through the internet and digital media; and growing creative impulses for many musicians in the form of improvisatory and compositional endeavors.

Change in Emphases


1. Creativity

TFUMM takes the position that **creativity** (defined for purposes of this report as rooted in the ability to improvise and compose) provides a stronger basis for educating musicians than does **interpretation** (the prevailing model of training performers in the interpretation of existing works). This position does not suggest there is no longer a place for interpretive performance in the emergent vision; but suggests that when this important practice is reintegrated into a foundation of systematic improvisation and composition, new levels of vitality and excellence are possible in the interpretive performance domain.




2. Diversity

integrated approach will fulfill the aims of the second pillar of our recommended curriculum: **diversity**. Students need to engage with music of diverse cultures and to engage with the ways that **creative expression** (including movement) underlies music across the globe.



3. Integration


content of the undergraduate music curriculum must be **integrated at deep levels and in ways that advance understanding, interpretive performance, and creativity as a holistic foundation of growth.**




Technology at the Center

Creativity/Diversity/Integration

Fundamental Question





WHAT DOES IT MEAN TO BE AN EDUCATED MUSICIAN IN THE 21ST CENTURY?


Listen to what students are saying and doing today!

Highest levels of musical performance ability still of interest, but also:

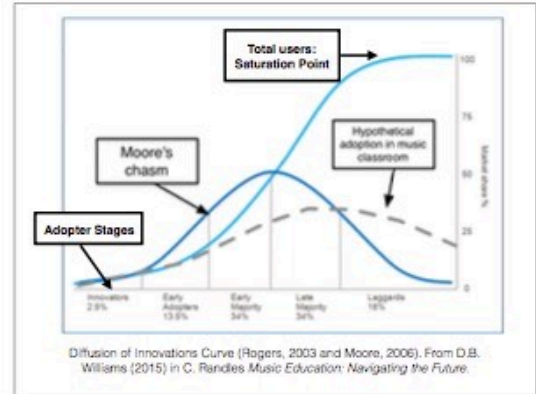
1. Music and Social Change
2. Entrepreneurial Efforts
3. Community Engagement
4. Multiple styles of music
5. Improvisation and Composition
6. **Music-based technology to aid in creative activities!!!**

HISTORICAL PERSPECTIVE



Brief historical trip through music technology and tools available for anyone, professional or amateur, to experience music and music making.



1. MUSIC TRAINING (early CAI for Plato, then for Apple and other PCs evolving as sophisticated applications such as Practica Musica, MacGamut, Auralia and Musition)




Micro Music/Temporal Acuity Products
Electronic Courseware Systems (ECS)

2. ELECTRONIC KEYBOARDS (electronic pianos to MIDI, to digital sampling & DAW's, to portability and virtual keyboards)



3. MUSIC NOTATION (Postscript, laser printers, WYSIWYG design combined: music notation software starting with Pro Composer, Finale, Sibelius, Notion, NoteFlight)



4. AUDIO LISTENING (LPs and cassettes to CDs to MP3 players to streaming recordings from the likes of Spotify, SoundCloud, or Apple Music)



5. RECORDING (real-to-reel, to cassette recorders, to computer-based recording software, to standalone digital recorders, to smartphones with digital recording—audio and video—built in)



6. INTERACTIVE MULTIMEDIA MUSIC EXPERIENCES (CD-ROM & HyperCard, to the Web, to smartphone and tablet apps)



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7. MUSIC CREATIVITY TOOLS (Pro Composer, to Cakewalk & FruityLoops, to Sony ACID Music, to Ableton Live, to GarageBand, Mixcraft, & Composers Sketchpad—WYH/WIG “What you hear is what you get” software)

7. MUSIC CREATIVITY TOOLS: Unleashing music creativity beyond traditional notation and instruments

8. SOCIAL NETWORKING (email, to Gopher, to Listservs, to Blogs, to Facebook, Twitter & SoundCloud)

BRIDGING THE MOAT
between
music technology
without and
within the curriculum

Where is music technology on the innovation curve in respect to music education in the undergraduate music curriculum?

“It is easier to change the location of a cemetery, than to change the school curriculum”

Woodrow Wilson

1900 to 2000

Dave

1900 to 2000

Dave

RESEARCH TELLS US...

- Undergraduates have basic computers skills but few with music technology skill proficiency (Dammers & Phillips, 2011)
- Most educators use computer skills, music and other, for their personal productivity, but not necessarily for instructional support or integration (Bank Street School, Reese 2003; Dorfman, 2008)
- Most schools of music provide music technology training through a single course, required or elective, if at all (Webster & Williams, 2014)

1900 to 2016

Dave

RETURNING TO THE INNOVATION CURVE from four different perspectives

Dave

Using technology to experiment with applications, tutorials, & develop software

- Typically innovators and early adopters
- Those most interested in tinkering and experimenting with the technology and music and sharing with others
- Technology implementation here is often deterministic with tech driving application and content
- Evidence the basic aural and theory skills that have been reprogrammed over-and-over from BASIC, to HyperCard, to Javascript and the web, to iOS and Android apps

Using technology as personal professional tools

- Early majority through laggards
- Technology here driven by an instructor's need to improve personal productivity
- Technology less deterministic here; application choice depends on felt need balanced against the learning curve or peer pressure to use an application
- Typically word processing, presentation tools, classroom management, recording and listening tools, notation.
- Research has shown that adoption here precedes technology integration into classroom instruction. Here the "late majority" and finally the "laggards" begin to find these tools indispensable to their work: Microsoft Office, email, Powerpoint, Blackboard, MP3 player with digital recordings for class use replaces CD recordings

Using technology in support of instruction, integration into teaching, the classroom, and the curriculum

- Here lies key ingredients for using technology in support of Creativity, Diversity, and Integration.
- Starts with the "early majority": those instructors who envision innovative ways to use newer technology tools, typically those open to finding new ways to reach students, individualize instruction, with student-centered, constructivist teaching strategies.
- Begins to migrate to the "late majority" on the innovation curve less tech savvy music instructors see (a) examples in practice or (b) realize a need in their teaching that is a goodness-of-fit for a proven technology.
- Time and funding influence success (cf. Chizmar & Williams, 1998)

"College teaching, indeed, has not been taught at all ... the beginning [college] teacher receives no teaching preparation. He usually begins to teach simply as he himself has been taught and if he improves, it is only in the light of his own unaided experience."

B.F. Skinner (1965)

Might the same be said about music technology competency?

Student use of technology as integral to their learning & professional development

- Early to late majority for social, communication, and selected productive tools (email, messaging, word processing, Facebook, etc.)
- Late majority to laggards for music technology unless skill development and practical experiences integrated into the music curriculum.
- Need to define core music technology competencies: focusing on music technology skills that began in the 1980s and has matured along the innovation curve beyond the "early majority." Furthermore, these competencies include critical understandings that underpin the application of the music technology skills, i.e., copyright, acoustics, MIDI, and technical problem solving (Webster & Williams, 2014)

Dave

Core technology competencies for all undergraduate music students across the music curriculum (all students should be competent as "late majority" users of music technology to accomplish these tasks)

1. Enter and edit music using notation software
2. Understand the basics of digital audio and how to edit digital audio files
3. Record and mix a performance with digital audio software
4. Demonstrate an understanding of copyright and fair use
5. Create a music presentation with production software and appropriate hardware
6. Create a streaming audio file (sharing recordings)
7. Demonstrate an understanding of MIDI and its applications
8. Demonstrate setting up a computer music workstation/problem solve technical issues
9. Demonstrate an understanding of acoustics and audiology
10. Create and edit a simple music video
11. Use and manage a variety of social music sharing tools (e.g. Apple Music, Spotify, Pandora, SoundCloud)

From Webster & Williams four year study of core competencies for music technology, 2014


FOUR SCENARIOS

All undergraduate level work

All celebrating at least two aspects of either **Creativity**, **Diversity**, or **Integration** guided by faculty

All relating to Dave's historical and innovation curve for adoption

Each tapping into the Core Technology Competencies



Scenario 1: Music education instrumental methods class



Faculty: Music education professor collaborating with a music theory/ jazz professor with diverse music background

Task: Using informal practices of music making, class will divide into small groups of instrumentals to "cover" a chosen piece. Groups will decide what music is to be played and how best to create the cover. No written music will be allowed. Faculty will serve as guides and resources for process. Time period would be two class sessions with some work outside of class by students without faculty. Discussion about how the task might be accomplished with students in k-12 environments. Discussion about copyright issues in piece was used in a public concert.

Technology Used: A. Listen to recordings of the piece to be covered played by mobile devices. B. Use of software apps (digital audio and MIDI) to (1) provide any missing parts or to augment playing and (2) to record final product. C. possible use of digital sound editing software to improve final product

Scenario 1: Music education instrumental methods class



Scenario 2: Music history course, either survey or more advanced.




Faculty: Music history professor collaborating with studio instructors of various instruments or voice.


Task: Students will be tasked with the job of preparing a lecture recital for a work being studied in the studio. The lecture recital might be prepared not for a concert hall but for a local venue such as a K-12 setting or retirement community population. Students must feature aspects of the historical context of the music as well as the properties of the music itself in the lecture demonstration. Group work allowed for performance of chamber works

Technology Used: A. Presentation software, using additional notation, sound, and graphics programs to create sounds and images. B. Amplification hardware that might be needed for large group presentation. C. Video recording of the lecture recital

Scenario 2: Music history course, either survey or more advanced.



Scenario 3: Performance ensemble: concert band, orchestra or choir




Faculty: Music ensemble director, music history professor and/or studio teacher, dance professor if available

Task: Organizing a concert featuring the influence of black music in American culture. The concert would be a combination of (1) live performance of selected works from Afro-Cuban, Afro-Columbian, Afro-Brazilian, Afro-Bolivian, or Afro-Mexican styles (use of contemporary hip hop and rap-type music as well as jazz influences might be employed and (2) short student-constructed explanations of the music for the audiences. Concert would be supported by visuals and possibly dance. The concert would be organized by the ensemble participants, with major input from as many students in the ensemble as possible.

Technology: Visuals recorded and edited by students using appropriate software. Final performance recorded and software used to create a streamed video for YouTube or other social media

Scenario 3: Performance ensemble: concert band, orchestra or choir



Scenario 4: Large group of music majors across the music unit, possibly all majors gathered on a stage with a combination of acoustic instruments, laptops, and mobile devices



Faculty: Individual with experience leading group, free improvisation with a variety of instruments. (as many other faculty in the music unit would be encouraged to participate as performers).

Task: Exploration of free improvisation under many different sets of directions from the leader. After the performance of a number of pieces, discuss the music created and the process used. Also consideration of how the free improvisation sessions could be used in other settings with less experienced players and singers. Music performances recorded and edited later for distribution

Technology: A. Electronic instruments of all sorts, B. Sound amplification techniques for all electronic instruments as needed, C. Recording and editing software and hardware resources

Scenario 4: Large group of music majors across the music unit, possibly all majors gathered on a stage with a combination of acoustic instruments, laptops, and mobile devices




Open Discussion!
Other Scenarios???