Paper: Reflections on Thirty-Five Years of ATMI Presentations and Trends Toward Equity of Technology Access for Diverse Music Experiences in Education

Presenters:

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David Brian Williams Video Script (Part 1)

File: Webster_Peter_Williams_David_Video_Part1
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Greetings to all of you joining Peter Webster and me today for our session. We will start with my video, segue to Peter's video (Part 2), and then open for online discussion.

The path through some 35 years of collaborating with Peter on ATMI presentations describes a journey through an ever-increasing sophistication in the design of music software and hardware. The PDF handout we have provided lists the many presentations we've made to ATMI and CMS back to the 1980s.

A perusal of this long list shows many sessions on hardware and software, several before their time:

- Hypercard—a tool regretfully to short lived;
- sequencers and digital audio editors that evolved into the DAWs or digital audio workstations of today;
- video and multimedia in its many forms from videodiscs, to CDs, to internet video and audio, to the streaming video and audio of today;
- mobile computing, envisioning computer labs as filling stations, and
- eBooks and eScores through iPads and tablets

We are most proud of the sessions we've offered on curriculum and teaching strategies integrating music technology. Especially so is our multiyear research to define a set of music technology competencies that should be mastered by all music students by the time they complete their music studies. This work was published in 2018 in the Journal of Music, Technology, and Education. We thank so many of you as CMS and ATMI colleagues who contributed to our surveys during this research.

1. Demonstrate setting up a computer music workstation/problem-solve technical issues.
2. Describe important principles of copyright, creative commons, and fair use.
3. Demonstrate an understanding of acoustics and audiology.
4. Create a streaming audio file.
5. Explain the basics of analog and digital audio and how to edit digital audio files.
6. Demonstrate an understanding of MIDI and its applications including performing with electronic, digital, and non-traditional instruments.
7. Record and mix a performance with digital audio software.
8. Enter, edit, and print music using notation software.
9. Create a music presentation with presentation software and appropriate hardware.
10. Demonstrate how to use and manage a variety of social music sharing tools.

The refined set of 10 music technology competencies provides an important thread through the modules of our newly revised textbook. Peter and I have finished the manuscript for the new 4th edition of Experiencing Music Technology, now with Oxford University Press.

Perusing the past 35 years of presentations, one also sees technology helping to make music increasingly accessible to a broader audience of people. A point that goes to the heart of this conference's theme: Fostering Equity and Opportunity in Music.

Let me elaborate on this by noting seven historical events where innovative technology opened new ways to enjoy, study, perform, create, and participate in music experiences. An expanding repertoire of technology tools that enables music experiences with a more diverse population in both formal academic contexts, as well as informal, social contexts.

We refer to these as events where, innovative technology "democratized" some aspect of the music experience.

Or, using a term from the conference's theme, created new and expanding "opportunities." Let us take a quick walk through these opportunities.

—Opportunities for music playback and listening: Portable music listening evolved through handheld music players using cassette tape, then CD audio disc, MP3 digital files, and now online streaming with access to an incredibly diverse library of world-wide genres of music through our smartphones. Music playlist can be collectively built and shared letting the music itself be the guide. Music that so easily crosses boundaries of style, genre, and culture. The Sony DiscMan, the first MP3 players, then Spotify democratized music listening.

—Opportunities for computer-based music instruction: The Apple II computer, the IBM PC, soon followed by the first Macintosh computer, offered computer devices as everyone's surrogate music tutor. A few titles from the first computer-based music instruction software have withstood the test of time and taken advantage of technology changes. These are now complemented by a recent stream of diverse and sophisticated music instruction tools—most accessible from wherever one can find a laptop, Chromebook, smartphone, or tablet, and an internet connection. MacGamut, Auralia, Musition, Practica Musica, and the MusicFirst portfolio of music education apps are good examples.

—Opportunities for performance through electronic keyboards and controllers: MIDI alone democratized electronic performing devices in 1983 and it has continued to adapt to web applications and future needs with this year's adoption of the MIDI 2.0 standards. A broad spectrum of portable electronic keyboards is available as well as non-traditional controllers and do-it-yourself MIDI kits that are all plug-and-play.

—Opportunities for publication-quality music notation: User-friendly notation software—even from hand manuscript— is available to be used from a desktop, cloud, or tablet computer device. The introduction of the first music notation software in the mid 1980s, Personal Composer, along with postscript fonts and laser printers were a key democratizing event for putting music to paper with professional quality printing from any personal computer.

—Opportunities for portable music recording: From the earliest "porta-studios" with analog then digital tape, to mini and CD-ROM discs, to secure digital cards, and now via our smartphones recording directly to the cloud. Professional recording studios for a few, gives way to handheld smartphones for recording, mixing, and mastering high-resolution digital audio for anyone.

—Opportunities for music creativity: Increased sophistication of traditional tools DAWs for creating, performing, recording, and producing music, paralleled by new and novel ways for non-traditional music expression. The non-traditional tools easily provide an avenue for experimenting with diverse and innovate instruments through MIDI and digital sampling. Introduction of GarageBand followed by Ableton Live were key democratizing events for creative music expression and performance with no prior knowledge of notation or a traditional instrument required.

—Opportunities for social networking tools for music making: Social tools accessed through the internet cloud where young music students are often the innovators. DAWs and music notation applications permit collaboration through the internet for creating, performing, and recording music in ways never imagined. Web-based applications with social networking features like Soundation, Noteflight, SoundTrap, and BandLab democratized web-based collaboration for creative music expression.

An excellent demonstration of these opportunities can be seen through the website: musiccreativity.org. Featured are some fifty profiles of secondary school programs that have integrated music technology into their curricula to dramatically increase the equity and offerings of music performance and creativity. These programs use technology to reach a large percentage of students who do not participate in more traditional music courses and ensembles.

While on the website checkout the Music Technology Leadership Academy. The academy has been funded by the NAMM Foundation and the TI:ME organization for ten years and is open to select music education majors through a national competition to come and study these unique music technology applications.

Let me now turn the presentation over to my long-time friend and colleague, Dr. Peter Webster. Peter will add his reflections on the thoughts I have shared and how this evolution in democratizing music expression through technology has influenced recent curricular change in college music education.

Peter, take it way!

Peter R Webster's Video Script (Part 2)
File: Webster_Peter_Williams_David_Video_Part2
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Hi everyone, Peter Webster here.

Greetings from Marina del Rey CA and sure wish I could be with you all personally. This short video together with David's is designed to add more contextual ideas about this topic that might help with our discussion following and our work ahead.

On a personal note, I so cherish working with David over the years. We match up well and learn from each other each time we collaborate. 35 years with ATMI/CMS and now finishing our 4th edition of a dramatically improved and comprehensive textbook—it does not seem possible.

You know, when we first wrote the proposal for this presentation, we could not have predicted our current life state—but here we are. The topic is so timely as we struggle to improve our technology-mediated distance work in music and our deeply held convictions for diversity, equity and inclusion.

We have considered all our many presentations at ATMI/CMS and the work we have done through our supportive professional organizations shown here and certainly with the help of many of you watching today. One hallmark of our work has always been to consier affordable and effective resources along the way. This fits with out theme today.

I believe that many of us realize that the 2020 year and decade to come may be among the most historic for our country, our profession, and our personal creative work. We wonder if you agree? Of course, there were some harbingers of change and here are two that come to mind. The 1999 Vision 2020 symposium documented by MENC/NAfME on music teaching and learning speculated on important topics that participants would be addressed as we approached 2020. These included concerns about harnessing technological developments, minority representation for faculty and students, at risk students, simplification of certification and removal of unnecessary barriers. These concerns were directed to work with k-12 students. We wonder if work still needs to be done?

Another report was directed more to what we all do for a living with higher education. The Task Force report by CMS in 2014 was a ground-breaking effort that suggested major change in the paradigm of undergraduate education in music—stressing creativeness, diversity, and integration. Can you imagine others 'work that might be worth re-reading and citing here? Thinking skills for the 21st Century? Prophetic words of people like the late Ken Robinson, Howard Gardner and many others? All designed

to have us think of major changes in our education system that focus on multiple intelligences, student-centered learning, and creative engagement for all?

On the positive side of things, We have experienced many positive advancements in technology that have had and effect on education. Here are a few on this slide—well known by now to us all. Others?

Much of this is well documented. Here are some examples of what David and I have been working on in terms of reviewing software and hardware in our current work together. For example, an overview of the extensive development of production software, the growing number of music learning titles, and important hardware and data structure advancements portrayed ina number studio setups.

This is the positive and meaningful stuff but what about equity of access? This is where things turn to the negative. The National Center for Education Statistics notes that we still have 14% of children 3-8 with no internet access at home with 9 million having difficulty with remote learning. (as a side note, in some communities like here in LA, kids are being given tablets and laptops and internet access for remote learning but this is not always evenly done and certain is not done nationwide.]

These charts from the same source are also worth considering. Here we see disparity in the households with various income levels. AND more tragically perhaps the disparity in terms of ethnicity. What can we do about this?

Something else we can think about: Tragically, we have little current data on whether any of the positive developments in technology noted above is actually used by the majority of educators at all levels. The TPACK model is worth considering here as a way of asking about the Technological Pedagogical Content Knowledge that we in ATMI/CMS have responsibility to promote. Can we take on the challenge to do more descriptive research to learn more about whether or not our teaching is effective using this technology?

What about changes in our own college curricular? I am proud to have contributed somewhat to my own current University in its reform for undergraduate education. Others too are at work. Berkeley for example is accepting as a performance instrument a computer and MIDI devices. Programs at the University of South Florida, Nebraska Lincoln, and University of Southern Maine, Arizona State University other schools are developing, and I am sure there are many others. But most have not done much at all to imagine change that can lead to better technological understanding and adopt paradigms that blend the performance of Western art music and the dominance of performance with other music and other ways to be creative. What are we doing ourselves at our institutions to change this? Won't changes like this improve the diversity, equity, inclusion, creative thinking, interdisciplinary learning and host of other things?

So, these and many other questions listed on this final slide are worth talking about today and in the future. I look forward to our discussion!