

Revised 9/11/15

Albert, Jeffrey (Loyola University–New Orleans)

A Specifications Grading System as Applied in a Music Technology Course

Specifications grading, or specs grading, is a system in which students earn grades based on meeting required specifications, rather than acquiring a certain number of points. This presentation explores a specs grading system as it has been applied in a Digital Audio Production course in a popular music industry studies program. The student grades are based on completion of a series of pass/fail specifications that are directly tied to the expected student learning outcomes for the course. The result is that the student grades more directly reflect the student's specific skills in digital audio production, and are less of a reflection of the student's ability to maneuver a points based system for partial credit on assignments intended to measure a skill which the student may or may not fully grasp.

Alcorn, Allison (Illinois State University)

Musicology in a Virtual World #ChallengesandOpportunities #MusicologyOnline

Online musicology courses offer both challenges and opportunities in the design process. This presentation looks at three design issues: maintaining the course/instructor personality, media in the online musicology course, and online-friendly assessment methods. Maintaining the unique personality of a course and allowing the instructor's personality to shape the design are often immediate concerns voiced by faculty facing online design for the first time. Online courses can be packed with personality, requiring more visual thought, from images, video, and graphics to page design and font. Media use can be a significant difficulty in terms of available tools, system challenges, and digital divide for students working at home, but an array of solutions is available. Assessment opportunities can be among the most exciting parts of online musicology courses, including discussions, projects and presentations, and testing. The presentation will go into actual courses to demonstrate possible end products of various design choices.

Basile, Joe (Centerline Digital)

Max/MSP: Helping to Bridge the Intellectual Gap Between Music and Math

Max/MSP is a combination between mathematical programming and audio signal processing. It is an object oriented programming environment where objects are connected by virtual patch cables in order to bring about a desired result. Objects can be as simple as floating point number boxes, to complex sin, saw tooth, and square wave generators. Connecting these objects in a multitude of fashions allows a student to visually see how additive, subtractive, and frequency modulation synthesis actually function and also double as a creative outlet for students to begin developing their own synthetic instruments. Through the use of Max/MSP, I will present my own applications that not only function as instruments in my own musical compositions, but also can aid students in the task of learning the various forms of synthesis. This presentation will display how these applications can be used in the classroom to aid in the understanding of these concepts.

Bisciglia, Sebastiano (Indiana University–Jacobs School of Music)
Teaching Technology in Skills-Based Music Courses

For many faculty teaching applied, skills-based music courses, technology can be an awkward—and at times downright unwelcome—bedfellow. This paper presents several ways technology is currently and successfully deployed in applied music instruction at a premier school of music. The instructional situations discussed include instrumental lessons for music majors and non-majors, as well as skills components in core music theory courses. The presentation has two prevailing, interrelated themes. First, successful implementations of technology typically augment—rather than replace—the core paradigm of applied music instruction: one-on-one, student-teacher interaction. Second, the particularities of teaching applied music courses require a broad interpretation of what constitutes instructional technology. Indeed, many faculty leading such courses already incorporate technology into their teaching, just not the kind conventionally viewed as instructional. With a more creative, open outlook from music faculty and technologists alike, applied music instruction becomes an exciting site for technological innovation and development.

Cayari, Christopher (University of Wisconsin–Madison)
Unlocking the Power of Video through Music Making on the Internet

YouTube, conceived as a performance venue, has afforded musicians a place to produce video performances in innovative ways, and I explain three trends of how YouTube musicians are making music: they are mediating musical performances by themselves; they are offering their skills as part of a collective; and they are actively collaborating with other musicians. Exemplar videos of these trends will be presented. Each of these trends have evolved new practices in which musicians can mediate performance online. With this presentation, I hope to spark a conversation on how online music making can be further developed with particular attention to the visual aspects of virtual performance. By paying attention to how people are using online video to share their mediated performances, the music profession can begin to better understand the power of video through music making on the internet

Cox, Robin (Indiana University–Purdue University Indianapolis)
Click Tracks and Bone Conduction Audio Monitoring for Ensembles in Live Performance

A presentation of how to thoughtfully design a click track specifically for an ensemble in live performance, and extending this capability through use of bone conduction earphones. Consideration of the frequent resistance by musicians to earphones covering or plugging up the ears is addressed through discussion of bone conduction as a method of audio transmission, as well as how to create a click track with the flexibility necessary for an ensemble rehearsal process. In addition to enumerating the specific advantages and technical challenges of these under appreciated performance tools for the stage, examples will be shared from the presenter's directorship of a collegiate ensemble and well as solo performance demonstration during the session.

Cremata, Radio (Ithaca College)***Digital Music in Democratic Sonic Spaces: Rethinking College Level Ensembles***

Students studying music in conservatory and other traditional college level music settings can greatly benefit from also experiencing non-traditional, digital music education experiences. This presentation will explore perspectives in a college level digital contemporary music ensemble comprised of 100 music education majors. The 100 member group is broken up into smaller 3-4 member sized groups to experience a range of vernacular musics. In the digital music education context, students are encouraged to explore digital music possibilities with music technology apps on tablets, phones, looping pedals, DAWs, online jamming interfaces, loop based multi-trackers, computer hardware/software and other digital tools that are not their primary instrument. Students select to cover or mashup songs of their own choosing and democratically negotiate their own musical arrangements in their respective small groups. The goal of the experience is to awaken students' perspective regarding the potential music technology possesses to engage non-traditional music learners.

Cremata, Radio***See Powell, Bryan (Integrating Music Technology into Popular Music Performance Ensembles: A Multiple-Case Study of Five NYC Public School Music Programs)*****Dammers, Rick (Rowan University)*****Composing Doctors: Utilizing Music Technology in Medical Education***

This presentation will focus on how an entry level DAW can be used to reach a population of non-traditional music students: medical school students. The course, Developing Empathy through Musical Composition, was developed as a humanities elective at a recently founded medical school. The course, taught by a faculty member from the music department at the medical school's affiliated university, allows students to explore patients' experiences of various illnesses and conditions through representing a patient's felt state through a musical composition. After a brief introduction to the software and an overview of musical elements, the students engage in a series of composition projects, which include cycles of peer feedback, reflection, and presentations of works. In this session, an overview of the course design will be presented, along with examples of student compositions and the students' reflections on their experiences. The session will conclude with an evaluation of the effectiveness of the course and generalizations of lessons learned.

Gillick, Amy (Virginia Tech)***An Objective Approach and Web-based Tool for Systematically Evaluating the Difficulty of Music Scores for Educators and Performers***

Music educators have always debated and disagreed about the relative complexity of a music score. Ranking a music score's complexity is required for curricular recommendations, competition specifications, etc. And yet, this non-trivial cognitive task depends solely on individual opinions, a process influenced by personal biases and lacking common criteria. Additionally, when buying sheet music, teachers struggle to determine whether unfamiliar music matches their students' playing ability. This demo shows how the relative complexity

of a music score can be automatically assessed systematically and objectively. We showcase an automated, Web-based application that empowers musicians to expeditiously assess a music score's suitability for the abilities of intended performers. The application works as follows. First, experts rank the relative difficulty of score components (e.g., notes, intervals, key signatures, tempo, dynamics, articulation, etc.) for different playing proficiencies and instruments. Second, an automated algorithm applies this ranking to music scores and calculates their respective complexity.

Halper, Matthew (Kean University)

Multi-controller Configurations for Live Performance using MainStage

Multi-controller setups are an important and powerful resource for live performance. With recent advances in virtual instrument and real-time audio processing technology, it is possible to use a single computer running a single software application to handle the multiple, simultaneous tasks required, in both the audio and MIDI domain, for such live performance scenarios. Apple's MainStage is uniquely designed to provide a vehicle in which complex live performance configurations, "live rigs," can be readily designed, implemented and controlled. Novel multi-controller implementations for performing musicians, band/ensemble directors and music instructors seeking to incorporate virtual instrument sound synthesis and real-time sound processing into a single consolidated platform for live performance will be examined.

Hill, Stuart Chapman (Michigan State University)

See Kruse, Adam (Exploring Hip-Hop Music Education Through Online Instructional Beat Production Videos)

Isaacson, Eric (Indiana University–Jacobs School of Music)

A Self-paced, Online Course in Music Fundamentals

The presentation demonstrates a self-contained, web-based course on music fundamentals. The course is completed by all incoming music majors before arrival, and is being used in a hybrid course for non-music majors. It contains 30 modules in six units: pitch, rhythm, scales, key signatures, intervals, and chords, covering visual and aural elements. Students may exempt modules via pretest. Modules alternate Lessons and Activities. Lesson screens feature a paragraph of text with a musical example below. Animation hyperlinks draw attention to key features. Activity sections help students master concepts. They feature multiple levels and are passed by reaching certain criterion levels, sometimes with a certain speed, e.g., "answer 7 of 8 consecutive problems correctly on the first attempt with an average time of 5 seconds or less." The demonstration provides background on the course, illustrates its pedagogical philosophies, demonstrates various features, and discusses lessons learned.

Kruse, Adam (University of Illinois at Urbana-Champaign)

Exploring Hip-Hop Music Education Through Online Instructional Beat Production Videos

This presentation will share the findings and implications of a research study concerned with the teaching of hip-hop beat production via user-generated online videos. In this study, researchers analyzed fifty of the most-viewed and highest-rated beat production instructional videos posted to YouTube within the website's ten-year history. The researchers describe the videos in terms of their instructional strategies and the use of various technologies. The presentation will include a description of the need for the study, a brief explanation of the study's methodology, excerpts of videos, a summary of the data analysis, and a description and discussion of the overall findings. Findings will inform numerous implications for practice in music education (e.g., creating digital instructional materials, teaching composition in general and beat production specifically) as well as suggestions for future research in this area of much needed growth within the field.

Kulp, Jonathan (University of Louisiana at Lafayette)

Re-Invigorating the Wheel: Creating an Open, Embedded-Media Music Textbook for the Digital Age

In certain areas of study, textbooks are re-inventions of the wheel. While pedagogical approaches change over time, the basic subject matter changes little if at all. What if instead of reinventing, we reinvigorated that wheel? Is it possible to use a textbook published more than 100 years ago? Could it be adapted in such a way that it not only works as well as current textbooks, but even better? In this presentation I discuss the rationale, benefits, and pitfalls of using public-domain content and embedded media in electronic book formats for music instruction. I also offer thoughts on optimal formatting and preparation of a book like this, using my own renovation of a public-domain counterpoint textbook from 1910 as a case study. The result of my work is a free, flexible, open textbook, rich in media, that renders naturally on virtually any device whether online or offline.

Levy, Jacob J. (University of Tennessee-Knoxville)

See Murphy, Barbara (The Learning Styles of Music Students: Implications for Teaching with Technology)

Lipscomb, Scott D. (University of Minnesota)

A Survey of Music Technology Practices in North American Public Schools and Universities: A Mixed Methods Approach

The purpose of the present mixed methods study is to determine the ways in which technology is being used in music classrooms across North America and, concurrently, to collect information regarding effective practices. The present researcher surveyed teachers at all levels of instruction to determine the kinds of technologies utilized and the frequency of use and also provide these instructors an opportunity to describe specific applications of these technologies that they themselves consider models of efficacy in the music learning environment. The results of this research study provide important information about both

contemporary uses of technology in the music classroom and identify a set of promising practices that can be used as a resource by other teachers interested in the integration of technology in their own classrooms.

Manzo, Dan (Worcester Polytechnic Institute)

See Manzo, V.J. (Using Game Development Engines to Create Interactive Music Learning Environments)

Manzo, V.J. (Worcester Polytechnic Institute)

Using Game Development Engines to Create Interactive Music Learning Environments

Game development programming environments make use of many of the same sound generation technologies that music technology applications use. There are mechanics for playing, organizing, listening, recording, and manipulating sounds, all of which can be delivered in a controlled environment. By developing the environment in which players interact with the mechanics of gameplay, a researcher can structure the order in which events occur and to teach musical concepts informally. Such informal learning can occur through exploration of the game world with accessible controls and limited written or verbal communication. There are many music-oriented video games in existence. This session explores the potential and rationale for using robust programming environments like Construct 2 and Unity 3D for individuals who lack formal programming skills to develop video games that facilitate their musical objectives; performance, composition, education, research or other.

Manzo, V.J. (Worcester Polytechnic Institute)

See Halper, Matthew (Multi-controller Configurations for Live Performance using MainStage)

Mason, V. Keith (Belmont University)

See Schmunk, Rick (Teaching and Mentoring Musicianship in Music Technology Courses)

McCord, Kimberly (Illinois State University)

Assistive Technology in Music Education

Assistive technology is included in a number of federal laws that impact students K–Postsecondary levels. Music assistive technology is a category we do not often consider but can be used to help students with a wide range of disabilities to more easily access the music curriculum. This session will address the current AT law and a range of low and high tech devices that can be immensely helpful when finding ways to make music more inclusive of all learners.

Meng, Chuiyuan (Indiana University–Purdue University Indianapolis)
Developing and Using Latest HTML5 Apps on Tablets and Computers in Music Classrooms

Technology can greatly enhance music education. But few tools are designed specifically for music education. This presentation focuses on developing multimedia applications using HTML5 for music classroom needs. Being easy to learn, HTML5 along with JavaScript is the ideal choice for musician developers. The presenter will go over the benefit of the choice of technology, share development experiences, and introduce several innovative multimedia apps designed just for music education.

Menoche, Charles Paul (Central Connecticut State University)
iPad and Music Apps Need Not Go Solo Anymore: Solutions for App to App or App to Device Communication

The Macintosh iOS and its initial applications were based on a model of one task for one application. Trying to share and exchange files and information between applications was usually quite challenging. As the iOS matured, the walls isolating one app from another app began to crumble. For musicians working with iOS devices and applications, the improvements over the last two years have been significant, providing extensive and wide-ranging new possibilities. Despite these improvements, many users are approaching tablets “one app at a time,” one computer at a time, with no external devices (except for maybe a QWERTY keyboard). In the hopes of helping others break down the single app wall, this presenter will highlight a variety of representative new possibilities, new connections, and new external devices that enable the users to connect between applications, iOS devices, iOS devices and computers, and traditional and non-traditional music devices.

Menoche, Charles Paul (Central Connecticut State University)
New Horizons in Interactive Compositional Systems: Representative Gesture-controlled Applications Available on the iOS

Systems for generating compositions, such as the 18th century Musikalisches Würfelspiel (“musical dice game”), have been used in musical compositions for centuries. Computer technology has opened many new compositional doors over the last 60 years. Works by Lejaren and Brian Eno and software tools such as M are the foundation and inspiration for new applications available in the Macintosh iOS. The most unique feature of these newest applications is that common gestures, controls, and tools now allow one to easily control the generative system. Although there is an ever-growing array of such iOS applications, this presentation will focus on two representative, relatively popular applications Musyc and Gestrument. Exploring these two applications in depth will serve as models for a general understanding and evaluation of other interactive composition system applications. Excerpts from live performances of compositions created by the presenter and students will be included.

Moreno Sala, Maria Teresa (Université Laval)

Database Material for the Ear Training Classroom: Video and Scores Excerpts of the Musical Repertoire

The goal of this project is the creation of a database with score, audio and video documents of excerpts of the musical repertoire representing the main music styles and languages to be known, according to the different professional needs of music students (classical, jazz, pop, world music, children music). This database does provide many concrete examples of the concepts studied in class and will help to develop an actual competence in the area of music dictation or transcription. Most often dictation exercises used in ear training classes are specifically designed for the course purposes but do not necessarily possess “musical” qualities. Working with excerpts of the real musical repertoire could stimulate and motivate the students to do this type of task and help them develop the professional competences they need to acquire.

Murphy, Barbara (University of Tennessee–Knoxville)

The Learning Styles of Music Students: Implications for Teaching with Technology

Teachers know that students learn in different ways. In an effort to find out which learning styles music students prefer, two learning styles surveys were completed by over 100 music students at a large university: the VARK questionnaire (Copyright Version 7.1 (2011), Neil D. Fleming, Christchurch, New Zealand) and the Kolb Learning Style Inventory (Copyright Version 3.1 (2014), The Hay Group, Philadelphia, PA). The VARK questionnaire provides users with a profile of their learning preferences: Visual Aural, Reading, Kinesthetic. The Kolb Learning Style Inventory (LSI) measures four different approaches to learning: Diverging, Assimilating, Converging, and Accommodating. This presentation will provide a full report of the results of these two learning styles questionnaires, including correlations with demographic information provided by the students (e.g., gender, major, instrument). This presentation will also provide a list of and discussions of exercises, websites and computer apps that target the learning styles preferred by music students.

O'Leary, Jared (Arizona State University/Paradise Valley Community College)

Multimedia Ensemble: Performing Live Music and Sounds with Live Video Games

This presentation focuses on a multimedia ensemble that created live music and sounds (acoustic and digital) to live video games. The session explores the successes, failures, and musical problems experienced within the ensemble as well as the specific software and hardware used by the ensemble. The session concludes with a discussion on future ensemble possibilities for music and sound with multimedia experiences.

Olivier, Ryan (Temple University)

Hearing Electronic Voices: Discourse and Meaning through Contrapuntal Multimedia

In this paper I will explore the heightened experience of metaphorical exchange through multimedia. The starting point will be the expansion of visual enhancement in electroacoustic compositions due to the widespread availability of projection in concert halls. With the use of

visual representation comes the potential to map musical ideas onto visual signs, creating another level of musical cognition. The subsequent unfolding of visual signifiers offers a direct visual complement and subsequent interaction to the unfolding of aural themes in electro-acoustic compositions. Composer Jaroslaw Kapuscinski has used multimedia as a means to enhance the concert experience, giving movement to the acousmatic presence in his electroacoustic work. In turn, his works create a concert experience that is more familiar to the 21st-century audience. Through examining Kapuscinski's recent work, *Oli's Dream*, in light of cognitive, semiotic, and multimedia research, I will propose a theory for analyzing contrapuntal meaning in multimedia concert works.

Pike, Pamela D. (Louisiana State University)

Online Synchronous Music Lessons for Older Adults: A Case Study of Sexagenarians Successfully Studying Online

While synchronous online music instruction is emerging as a viable alternative to face-to-face teaching, to date, most of the research on distance music lessons has focused on children or young adults. The population over the age of 65 in the United States is projected to reach 88.5 million by 2050. Currently, many older adults pursue individual music study and, musical and emotional benefits have been reported. This collective case study sought to explore benefits and drawbacks of synchronous distance music lessons from the perspective of six sexagenarians studying the piano, cello, and harp. Data was triangulated and the constant-comparison method was used to identify common themes. Online study was a viable option for these particular students, and they experienced musical and psychosocial benefits as a result. Implications for future researchers and educators will be explored in this paper.

Powell, Bryan (Little Kids Rock)

Integrating Music Technology into Popular Music Performance Ensembles: A Multiple-Case Study of Five NYC Public School Music Programs

During the 2014-2015, music technology grants were awarded by Amp Up NYC to five different New York City public school music teachers. These teachers were all members of Amp Up NYC, a partnership between Little Kids Rock and Berklee College of Music in support of the New York City Department of Education's efforts to expand Modern Band music education programming for thousands of public school students in the district. These music technology grants included hardware, software, and training for the public school teachers selected. As part of the process, each teacher provided monthly reports about how the technology was influencing their pedagogy and how the introduction of the technology influenced student engagement, participation, and excitement in participating in popular music ensembles. This presentation will examine the teachers' specific experiences, including both the challenges and successes of integrating music technology into their popular music performance ensembles.

Purse, Bill (Duquesne University)

See Sussman. Richard (The Ultimate Sound Palette—Breaking Down Boundaries)

Rees, Fred (Indiana University–Purdue University Indianapolis)
Developing a Worldwide Research Consortium for Music Technology

This session will focus on the development of a bridgehead between research undertaken in music cognition and the neuroscience of music with research concerns of colleagues in music technology, in order to lead toward outcomes of better practice in our field.

Riley, Raymond (Alma College)
QuickTime in the Modern Media Era: The Final Chapter?

With the release of OS X Mavericks in 2013, Apple developers were informed that the QuickTime C Framework (aka “classic” or QuickTime 7) and the QTKit Framework were deprecated. In the software world that usually means marked for removal and a death-knell warning to users and developers to begin moving away from reliance on the services and functions provided by the toolset. What does this mean for media producers and especially those with legacy content who up to now have continued to rely on the tried-and-true features of classic QuickTime and QuickTime Pro? What will take the place of these methods? We will look at a variety of media scenarios and troubleshoot problems, providing some solutions and tips for migrating media to modern codecs while also identifying alternatives to using QuickTime 7 Pro.

Schmunk, Rick (USC Thornton School of Music)
Teaching and Mentoring Musicianship in Music Technology Courses

While the music technology skills of many incoming student composers, instrumentalists and vocalists entering college music programs today has improved dramatically, the students’ general musical skills are still more fully developed. This observation however is at conflict with the music technology teaching experience of the presenters of this session. Their work in related MIDI sequencing, recording and mixing courses has shown that students more often struggle with the application of musicianship to project conceptualization and general problem solving than with actual music technology practices and techniques. The presenters will discuss how music technology curricula can be optimized to address this problem and how to best guide and mentor students to generate stronger musical outcomes. The presenters will also share best practices and examples of curriculum and project design gathered from colleagues teaching college and university music technology courses.

Sink, Damon (Western Carolina University)
From Finale to Flash and HTML5: Creating Interactive Web-based Rich-media for Music Instruction

The latest versions of Flash Professional CC—available as a part of the educator subscription to the Adobe Creative Cloud®—integrate new options for developing web-deployed rich media with in the HTML5 Canvas environment. The presentation will outline best practices for quickly developing dynamic, music-graphic based teaching materials that are HTML5-friendly, using Finale or Sibelius authored musical examples and the Flash and Illustrator applications from Adobe.

Spraggins, Mark (California Lutheran University)

The Best of Both Worlds: Integrating Analog Technology into the Recording, Mixing, and Mastering Process

While many universities prepare students for basic recording and mixing techniques with an emphasis on digital technology, much of the professional recording industry still relies heavily on analog equipment at all stages of the production process. This presentation discusses the current practices of several Grammy-winning audio engineers, and evaluates specific techniques for the integration of analog hardware in all stages of the music production process. The presentation will conclude with suggestions for ways to inexpensively integrate analog hardware into a small project studio.

Sussman, Richard (Manhattan School of Music)

The Ultimate Sound Palette—Breaking Down Boundaries

The incorporation of electronic music technology into the integration of diverse musical styles characterizes a natural evolution in music of the 21st century. This session will be a joint presentation by two prominent composers, performers, technologists, and educators - one a keyboard player, the other a guitarist. In a lecture/performance format, we will demonstrate the utilization of cutting edge software and hardware such as Digital Performer, Ableton Live, MainStage, Protools, Virtual Instruments, Audio DSP, Guitar MIDI controllers, and Max/MSP in the performance of newly composed music which crosses stylistic boundaries. The demonstrations will be followed by performances illustrating the techniques in a musical context.

Tough, David (Belmont University)

Teaching a Survey of Recording Course: The Integration of History, Technology, Critical Listening, and Hands-On Tasks

Introductory survey recording classes are part of music and audio technology degree or certificate programs at community colleges, vocational schools and four-year universities worldwide. Typically these courses give students their first introduction to the foundations of sound recording. Many cover the basic equipment and techniques of digital and analog music recording. Often classroom instruction is augmented with some hands-on experience. Traditionally, because these types of introductory courses in audio engineering or recording technology regularly aim to serve a broad population of majors, instructors have found it difficult to include and develop critical thinking and writing skills. This paper focuses on a particular teaching model developed and refined by the Audio Engineering Technology (AET) faculty in the Mike Curb College of Entertainment and Music Business, Belmont University, Nashville, Tennessee. This course, entitled AET 1380: Survey of Recording Technology approaches the course through attention to four main areas: the historical development of recording technology and practices; introduction to the technology itself; observations of large and small format recording sessions; and critical listening and writing exercises.

Webster, Peter (University of Southern California)

Status of Online Collegiate Textbooks for Music Teaching and Learning

This paper reports on the status of state-of-the-art solutions that college music professors/authors are using for teaching music technology, music listening, theory, history, introduction to music education, music education methods, conducting and other fields of study. This presentation will summarize the results of a carefully constructed survey of music professors who are currently opting for online course textbook materials: hybrid, print, and complete online delivery. (2) We will examine the offerings of the major publishers of course materials in music to determine the breadth and depth of offerings in order to clarify current options for both the teachers of the classes and the authors that develop the materials.

Webster, Peter (University of Southern California)

See Williams, David B. (Music Technology Competencies: An International Perspective to a Four-year Study)

Willey, Robert (Ball State University)

Teaching Communication Skills and Character Strengths in a Music Production Program

The curriculum in our audio production program focuses on teaching technical and musical skills. Along the way we remind students that the music business field is a people person business, but what can we do besides tell them to work on becoming more outgoing? Is that even the right thing to focus on? Research by Angela Duckworth and Martin Seligman may provide a theoretical foundation as we look for ways to foster character strengths such as grit and self control, qualities that they say are vital for students in their professional and personal lives. This presentation surveys a number of initiatives begun this year in our program to develop these and other non-cognitive skills, which turn out to be valued by audio professionals when looking to hire graduates.

Williams, David B. (Illinois State University, Emeritus)

Music Technology Competencies: An International Perspective to a Four-year Study

A four-year research project has investigated core music technology competencies for music students in undergraduate programs in the United States and identified a set of core competencies. The research is now focusing on examining the results on a global perspective. Outcomes among tertiary schools are being examined in selected music programs in first-world countries to see if there is an international consensus for the set of competencies and the ways in which they are integrated into the music curriculum. The presentation will report on the key results of this research along with anecdotal evidence to illustrate key findings. Open discussion will be encouraged to create an international interest in the teaching issues addressed by the research.

Williams, David B. (Illinois State University, Emeritus)

See Webster, Peter (Status of Online Collegiate Textbooks for Music Teaching and Learning)