The ability to sight read is a necessary musical skill for the development of independent learners (Elliott, 1982; Gregory, 1972) and an indispensable part of training for musicians (Lehmann & McArthur, 2002). According to Gromko (2004), “Just as reading comprehension is a basic component of most standardized tests of language arts literacy, so music sight-reading is a critical component of music literacy and a test of comprehension of the musical symbol system” (p. 7). Historically, the inability to read rhythmic patterns has been found to be a major source of error in sight-reading by both novice and experienced musicians (Van Nuys & Weaver, 1943; Thomson, 1953). For junior high wind students, Boyle (1970) found a high correlation between ability to read rhythm at sight and ability to read music at sight. High school wind instrumentalists’ rhythmic errors have been found to outweigh all other types of errors in sight-reading (McPherson, 1994). Rhythm-reading ability was also found to be the single best predictor of college undergraduate wind instrumentalists’ sight-reading skill (Elliott, 1982).

Henry (2001) developed the Vocal Sight Reading Inventory (VSRI) and established a hierarchy of pitch skills based on the difficulty level of each discrete skill. The VSRI was then adapted by Henry (2009) to establish a hierarchy of rhythmic skill difficulty for vocalists. This principle of “contextually-based units of measure” (p. 22) used to develop the VSRI was later modified by Alexander and Henry (2012) to establish a hierarchy of pitch skill difficulty for string players.

The purpose of the current study was to establish a hierarchy of basic rhythm skills for string players based on the methodology used by Henry (2001, 2009) and Alexander and Henry (2012). In doing so, the following research questions were developed: 1. What is the rhythmic sight-reading ability of high school string players? 2. What is the difficulty hierarchy of rhythm skills for string sight-reading? 3. What is the effect of key on rhythm sight-reading achievement, when presented in a melodic context? 4. What is the effect of bow direction on sight-reading of specific rhythms? 5. Do factors such as private lesson or piano experience contribute to string sight-reading achievement?

The target skills identified by Henry (2009) constituted the universe of rhythm skills for the current study. Twenty-six rhythm skills in seven categories were embedded into four eight-measure melodies. The melodies contained basic melodic tasks—as determined through previous development of the pitch skill hierarchy (Henry, 2001; Alexander and Henry, 2012)—so as not to present a confounding variable when isolating rhythmic tasks. However, to attend to the possibility that the execution of a pitch task may influence the performance of a rhythm task, several of the multi-note rhythm skills occurred with differing pitch tasks—repeated pitches versus moving pitches. In order to investigate the influence of key, each melody was notated in the keys of D, Eb, and E. The effect of bowing on rhythmic accuracy was investigated by alternating bowing direction for a few select skills. High school string players attending a summer music camp (N = 82) participated an evaluation of their string sight-reading skills. Each participant completed a survey requesting demographic data including grade level, playing experience, and sight-reading experience. After completing the survey, participants were randomly sent into one of three testing rooms. Each participant was asked to sight-read a series of four melodies on their primary instrument—violin, viola, cello, or string bass. Testing materials in each room were identical, except for the key in which each melody was presented. Within each room, the order of presentation of the melodies was rotated, so that no single melody benefited from its place in the presentation sequence. Scoring was done live, using the target rhythm skill scoring procedures.
developed by Henry (2009), resulting in scores ranging from 0-26, based on the number of target skills performed accurately. Test administrator/scorers were upper level music majors (music education or performance), who received training in scoring techniques prior to the summer music camp. Each trial was also recorded using digital recorders, so that interscorer reliability could be established by having performances scored by a second scorer at a later time.

The researchers will present results, conclusions, and points for future research. A rhythmic hierarchy for string students, used in combination with the pitch hierarchy established by Alexander and Henry (2012) may provide orchestra directors and researchers the ability to identify or design melodies at specific rhythm and pitch difficulty levels, and to suit the difficulty level to the needs of individual performers or ensembles.

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Research Poster presented at the Texas Music Educators Association, San Antonio, TX.
Battiste, Loneka. Louisiana State University, Baton Rouge. The Sound Ideal of Moses Hogan Spirituals

Choral arrangements of African American spirituals can be viewed as a hybridization of genres that preserves elements of the American choral tradition and the African American folk song while being recognizably different from both. Musicians who perform spirituals must reconcile the dual identity of the arranged spiritual as both a product of both the American and African American experience. The two performance practices and sound ideals can be quite different and in order to perform arranged spirituals well, knowledge of each tradition is important.

Arrangers of spirituals attempt to reconcile these differences as they mold the melodies into arrangements that are aesthetically pleasing while honoring the beauty of the original pieces. If the music is enjoyed and performed only as beautiful arrangements of folksongs, conductors, choirs and soloists run the risk of detaching them from their socio-cultural and historical contexts and performing them solely as entertainment. For this reason, it is imperative that studies regarding the sound ideal of the spiritual and its historical context are conducted.

Moses Hogan is one of the most celebrated arrangers of the African American spiritual and was a salient figure in the late 20th century revival of the genre. Raised in Baptist churches in New Orleans under the tutelage of his uncle, a church musician, he went on to study at Oberlin College and Juilliard before returning to New Orleans and arranging spirituals. He is the personification of the dual identity of an African American and American in his musical training. These, among other factors, contributed to his arrangements and to the sound he worked for meticulously in his ensembles. In the ten years since Hogan’s passing, his works have continued to be performed and rediscovered, yet the full range of his contributions to choral music have yet to be explored. Sufficient knowledge of the American choral tradition is a necessary foundation for the performance of arranged spirituals, but a dismissal of other influences on his style of arranging leaves the performance of his arrangements wanting. This study was explored the sound ideal for the spirituals of Moses G. Hogan by examining primary documents and interviewing former members of his choral ensembles.

In particular, this study asked the questions: 1. What do primary sources (recordings, program notes, videos, reviews, etc.) reveal about Moses Hogan’s intended sound for his spirituals? 2. How do former members of Moses Hogan choral groups believe elements of choral performance should be addressed in the spirituals of Moses Hogan to produce his intended sound? The grounded theory approach, which examines participants who have experienced a similar process, action, or interaction and seeks to develop a theory to explain it or to provide a framework for further research, was used to explore the purpose and guiding questions of this study. I began with a thorough examination of primary sources relating to the music of Moses Hogan spirituals. Documents from the Moses Hogan Archive at the Amistad Research Center in New Orleans, Louisiana, the private collection of the informal historian of the Moses Hogan Chorale, Ernest Battle, and the full interview transcript from Kathy Romey’s 2002 interview with Hogan was used in this study. I also interviewed ten former members of Moses Hogan ensembles, five who are active performers and five who are choral conductors. Each was asked specifically about the sound ideal of Moses Hogan as it relates to intonation, diction, articulation, expression, tempo, dynamics, rhythm, tone and phrasing. The primary documents were analyzed
through open coding, compared with emergent themes in the interviews, and further analyzed through focused coding. Each interview was subjected to open coding, analysis of emergent themes, focused coding and development of theories as well as member checking and triangulation. These findings were used to develop a theory of the intended sound ideal of Moses Hogan spirituals and provide educators with suggestions for achieving that sound. This research will assist choral music educators in guiding their students through deeper and more meaningful experiences with spirituals. Additionally, it may assist choral directors in exploring musical cultures more authentically, providing culturally relevant musical experiences for students, recruiting and retaining diverse populations of music learners, and inspiring students to participate and consume music across their lifetime.

Colprit, Elaine and Fullenkamp, Adam. Bowling Green State University, Bowling Green, OH. **An Analysis of Motor Skills and Movement in Cello Bowstrokes**

In this study we will examine and describe the motor behaviors of cellists with different levels of experience and expertise as they perform on the string and off the string bowstrokes. We will develop a three-dimensional, rigid-body kinematic model for the evaluation of novice and expert cellists' bow technique in order to identify stylistic differences that may ultimately inform music instruction. Once a suitable model has been developed, we intend to conduct a human movement assessment to evaluate the kinematic qualities of novice and expert cellists. Large motions of the arm associated with cello bowing can be readily observed, but slight adjustments in the wrist, finger joints, and thumb are not as easily detected. Cello pedagogy has relied to a great extent on the perceptions of expert cellists as they experience bowing. While expert cellists reliably report what they perceive is happening in the bow hand and arm, technology is currently available that can provide video capture and sensory data that may yield more precise information about the application and timing of fine motor adjustments. Using kinematic sensors attached to finger joints, thumb joints, wrist, elbow, and shoulder, we will record motion data for novice, intermediate, and expert cellists as they perform off the string and on the string bowings. (detache, marcato, spiccato, and slurred bowings.) Participants will be recruited from university string methods classes, K-12 school string programs, university cello studios, and professional orchestras. This is the first study in a line of research intended to inform cello pedagogy for teaching beginning and developing cellists.

Crawford, Lisa. University of Southern California, Los Angeles. **Children’s Voices: Perceptions of Self and Group in Singing in an Elementary General Music Program**

Singing is an important means of communication (Welch, 2005), accessible to most humans. Beyond the virtual choirs of Eric Whitacre (Whitacre, 2013) or the first 1698 colonial Psalm tunes textbook to actually contain music for singing (Lowens, 1954), beyond the English choral societies of the 16th century, to the schola cantorum of the fourth, singing has been part of human lives. While elementary music, as many students’ first involvement with formal music learning, develops skills beyond musical, general music instruction in American public schools usually focuses toward singing (Clayton, 2001). With economic challenges, school districts may be increasingly challenged in knowing how reduced elementary general music programs should be defined in terms of curricular decisions and amount of time teachers spend weekly with students. Often, even amongst music educators, there is confusion about the purpose of elementary school music, if programs should be identified as general or choral
music, or precisely how programs should best be presented in terms of environment, goals and objectives, or presentation style.

This study was conducted in a small school district in a large urban center of California over a three-year period with elementary students in an elementary general/choral music program. Classes met with a credentialed music teacher 20-30 minutes weekly. The purpose of this longitudinal mixed-methods study was to learn how elementary students would respond to questions about their experience of participation in compulsory general music experiences and singing in school concerts. Using a researcher-designed survey instrument with both quantitative and open-ended variables, elementary students in a general-choral music program (N=752) were asked to identify prior musical experiences, interest in playing instruments by type, choral activities, instrumental training, note types and note values, and interest in writing music of their own.

Students communicated low levels of any type of experience with in- or out-of-school music. Students communicated an evenly dispersed interest (yes/no) in composing opportunities, however, 30% communicated that they already compose music. Responses indicated highest instrumental interest as percussion, piano, and flute. Students named note types and values at less than 40% accuracy across grade levels. The highest percentage of elementary students across grade levels focused on their feelings of happiness, even excitement, about singing as a group in concerts. For example, 70% of fifth graders reported high levels of feeling good or extremely happy about their concerts (n=192). 27% of fourth and fifth grade students (n=510) reported nervousness or nervousness followed by pride in their responses. This may be an indicator that providing supportive discussion about expectations of group and personal performance would be helpful, especially at upper elementary levels. Also across grade levels, students gave equally positive and negative evaluation about self and group performance related to pitch accuracy, behavior, working together as a group, and personal ability to do a good job as a member of a group.

Students also shared many emotions such as sadness when family are unable to attend a student's concert, desiring a solo, or having performed their solo more competently. Some students revealed that they did or did not like music because of high or low self-perception. An analysis of the open-ended questions describes the wide variety of emotions children experience as related to singing, was communicated by one student in this way: "I felt like I was being lifted into the musical world of heaven and all the angels cheered as I rised. Then when I rose back up on the riser, I fell back into earth but I felt happier than I was when I went."

The presentation will highlight findings of the study with implications for K-12 music education.

Cumberledge, Jason. Florida State University, Tallahassee Private Music Instruction: An Investigation of the Effects of Pre-College Music Lessons on Undergraduate Ensemble Placement

Music education's survival is dependent upon the recruitment efforts of today's music educators. Recruitment for music education occurs in high schools as students, near graduation, make decisions about their futures. Aspiring music majors that are unprepared for college entrance auditions and ensemble auditions may not gain admittance or sustain success in a college music program, effectively ending their chances of a career in music education. Music educators that have aspiring music majors in their classes must take a course of action that readies those students for performance success in college music programs. Pre-college private music instruction may be included in that course of action.
Therefore, the purpose of this study was to determine the effect that private music instruction has on the performance success of undergraduate music majors. Specifically, this study sought to determine: (1) How many undergraduate music majors take private lessons before entering college? (2) Is there a correlation between the amount of private music lessons and ensemble placement on varying primary instruments? (3) What factors led undergraduate music students to enroll in private music lessons before entering college? A survey was administered to undergraduate students (N = 156) in three wind bands at a large university in the southern United States. Respondents were asked to complete information regarding ensemble placement, chair placement, and the amount of pre-college private music lesson experience on their primary instrument, piano, and voice. Using a list of predetermined items, respondents that took pre-college music lessons were also asked to rank the top three factors that led them to start taking lessons before entering college. In addition, space was provided for respondents to list additional items or comments. Results of the survey indicated that 100% of undergraduate students in the top wind band took pre-college private music lessons. 86.5% of students in the second wind band took lessons and only 80.6% took lessons in the third wind band. When compared across all three ensembles, undergraduates in the top wind band had the most pre-college private lesson experience, studying on their primary instrument for an average of 6 years. When compared to students in other ensembles, top wind band students spent more time studying pre-college piano and voice, for an average of 2.87 and 0.61 years respectively. For all undergraduates, the top three ranked factors for starting pre-college music lessons included: “Self-enjoyment”, “School music teachers”, and “College preparation”. The bottom three ranked factors were: “Friends”, “Sibling”, and “Other”. There was no significant difference between the rankings of the three bands.

Pre-college music instruction appears vital to the success of undergraduate music students. Schools should continue to support private music instruction for students, particularly those whose who intend to enroll in a college music program. In this study, school music teachers were a strong factor influencing undergraduates to enroll in pre-college private music lessons. College preparation was also a highly rated factor in this study, indicating that the culture of college preparedness for music majors includes a private music lesson component. Current music educators must take an active role in promoting private music instruction as it may help high school students cultivate an interest in a music education career, allowing new members to enter the ranks of music education.

Dahan, Andrew. University of Miami, Coral Gables, FL. Teaching Methods of High School Vocal Jazz Ensemble Directors

The purpose of this in-progress study is to examine the teaching methods used by directors of high school vocal jazz ensembles, which is an area of music education in which little research exists. The research questions that are being examined are (1) What are successful vocal jazz ensemble directors teaching the students in their rehearsals?; (2) What teaching methods are they using in their rehearsals?; (3) From the students’ perspective, what methods of teaching are seen as being effective?; and (4) When looking at a larger population of vocal jazz ensemble directors, are there commonalities in the teaching methods they use with their ensembles, as well as their perceptions of the effectiveness of these teaching methods?

The study will use an explanatory sequential mixed methods design. First, qualitative data will be collected, through observations of the rehearsals of five successful high school vocal jazz ensemble directors. The observed directors were determined using the number of DownBeat vocal jazz ensemble awards they have won with their ensembles. The rehearsals will be video recorded, then transcribed.
Additionally, focus groups will be conducted with singers in the ensembles of each of the five directors. The data collected from the observations (in which the focus will be on the methods used by the director) and focus groups (in which students will discuss their perceptions of what methods of teaching are most effective in facilitating learning) will be transcribed and coded, which will then yield variables in the form of different teaching methods that the directors use. The researcher will identify the teaching methods that are common between all of the directors. These variables will then be used to create a survey of teaching methods for use in the quantitative data collection. The created survey will be distributed to a larger sample of high school vocal jazz ensemble directors, with the goal of identifying what teaching methods these directors are using, and which methods they believe to be the most effective. This data will then be analyzed using ANOVA, to compare differences in teaching methods between different groups within the sample, as well as regression methods, to examine whether certain variables are predictors of certain teaching methods. The results of this study will help the researcher begin to create a model of how to most effectively run vocal jazz ensemble rehearsals.


Even though learning to play the soprano recorder is a desired learning outcome across many collegiate educational settings (e.g., elementary music methods courses), motivating students to improve their performing technique can be difficult because it requires consistent and effortful practice. One technique that has been used to successfully modify behavior is behavioral contracting (Madsen & Madsen, 1998). A behavioral contract is “an agreement written between two or more persons… that states behaviors the involved parties will perform and the consequences that will result” (Wolfe, 1987, p. 44). A fundamental reason for using contracts is that individuals are usually more inclined to change their behavior if the target behavior and reinforcement are mutually agreed upon. Only a few studies (e.g., Gooding, 2009; Wolfe, 1987) have examined effects of contracting in musical settings. The purpose of this study was to investigate the effect of behavioral contracting on preservice elementary teachers’ performance achievement on the soprano recorder. Method Participants (N = 60) were elementary education majors from a large Southern University enrolled in four sections of a music methods course for preservice elementary classroom teachers. The majority of participants were female with a mean age of 20.15. This study used a withdrawal design (ABA) composed of two-week baseline-contract-baseline phases. At the conclusion of each phase (T1, T2, and T3), data were collected through video recordings of individual participants performing an assigned excerpt. Data collected included participants’ tempo and number of errors performed. The research team modified excerpts at each phase using a systematic procedure to reduce practice effects associated with performing the same excerpt at each testing session. A trained reliability observer also scored the number of errors performed by a random selection (20%) of performances, and interobserver reliability was found to be high (r = .92). Phase one (T1) served as a baseline measure. During phase two (T2), behavioral contracts were implemented with all participants. Finally, during phase three (T3), contracts were withdrawn. The contract stipulated that participants must meet the selected tempo improvement goal and perform with fewer than four errors to achieve the reward. Although the tempo improvement goal and reward (e.g., drop grade, one free absence, etc.) were determined by class consensus and instructor approval, rewards were assigned to participants independently, based on their individual achievement.

Results: For performed tempo (scored as beats per minute), means increased at each testing session, although the largest increase was observed during the contracting phase (T2). Results of a repeated-
measures ANOVA indicated a statistically significant difference (p < .001) in performed tempo across the three testing sessions with a large effect size. Follow-up pairwise comparisons with a Bonferroni correction showed that tempo increases between all phases were statistically significant (p < .001).

The number of errors performed was also scored as a dependent variable, and errors were operationally defined as follows: (a) wrong notes, (b) correct notes performed out of phase with the metronome, (c) restarts, and (d) overblown harmonics (“squeaks”). All participants started with an error score of zero, and one point was added for each error performed. The mean number of performed errors decreased from T1 to T2, but increased slightly from T2 to T3. Another repeated-measures ANOVA was conducted, indicating a significant difference in the number of errors performed across the three testing sessions (p < .001) with a large effect size. Bonferroni-corrected pairwise comparisons showed significant differences between T1 and T2 (p < .001) and between T1 and T3 (p < .001).

Discussion: Results showed that participants performed with significantly higher tempos and significantly fewer errors during the contracting phase. Following this phase, participants’ performed tempo continued to increase even in the absence of the behavioral contract. These findings suggest that behavioral contracts can positively impact preservice elementary teachers’ performance achievement on soprano recorder and are consistent with previous research (Gooding, 2009; Wolfe, 1987).

References:


In C. K. Madsen & C. A. Prickett (Eds.), Applications of Research in Music Behavior (pp. 43-50). Tuscaloosa, AL: University of Alabama Press.

Farley, Alison. University of Washington, Seattle. Collaboration within a Performing Large Ensemble Through Student Input and Evaluation

Presenters: Alison Farley, University of Washington

Title: Collaboration Within a Performing Large Ensemble Through Student Input and Evaluation

Collaboration Within a Performing Large Ensemble Through Student Input and Evaluation

Background

Music performance is thought to be a creative process. In school music ensembles, students are often creative in that they are making music with their instruments, but the creative decisions are left to the director or conductor as to how the music is interpreted and performed. As a student participates in these school groups, responsibility for creative synthesis is not often delegated to the student. The conductor assumes those decision-making expectations, resulting in a lack of independent participation in this process from the student. Supporting literature in motivation strategies, learned helplessness, deliberate performance, student independence and one-on-one music teaching have been explored to compile themes and have been shown to improve student involvement in a learning environment (Agran, et.al., 2003; Duke & Simmons, 2006; Fadde & Klein, 2010; Mitbaug, et. al., 1998; VanReusen, 1998). In addressing these topics, students who have more input and involvement in their educational experience begin to develop more intrinsic motivation for participation. In a music setting educators
can adapt these involvement strategies in hopes of creating a similar outcome. Method This project explored a large ensemble setting where the conductors were working to shift attention from a conductor led rehearsal to a more student directed experience. In doing so, it was presumed that students would become more engaged in their individual efforts to produce a desired ensemble sound and group ownership would develop over time. The ensemble was comprised of 48 undergraduate, graduate and community members. The researcher attended all rehearsals for one quarter and dialogue from both the instructors and students were transcribed and analyzed. Students were also provided an opportunity to listen to selected rehearsal recordings and respond via on online response form. This was not a mandatory part of the course, but has been an ongoing component of the course for the last four years. In addition to the emergent themes, the researcher was interested in answering the following questions: 1. How many students are taking part in this activity and does it change over the course of the quarter? 2. Do the comments change in specificity over time? 3. Do comments align with instructor comments/goals?

Results - Rehearsal transcriptions and online responses were analyzed for content. A frequency count from online responses was also considered to answer question one. It was seen that student participation in the online listening and responses decreased as the quarter progressed. Time of quarter in relation demands outside of rehearsal and an increase in the amount of rehearsal conversation could be reasons for the drop in online participation. Regarding question two, responses from the online response form were analyzed for a change over the course of the quarter. No change in specificity was seen as most comments were very specific to begin with and maintained a high level of specificity. Some students had been participating in this ensemble for three or more quarters and were aware of the level of conversations usually presented. As this was an optional activity, maybe only students responded who were comfortable with being very specific. Online responses were again analyzed to address question three. This analysis revealed several occasions where students were directly referencing instructor comments. It was found that students often began and continued conversations through the online forum, which was an interesting and unexpected outcome. Students also showed a high level of musical maturity, making comments that were novel and added insight to the instructors teaching. It was also observed that student responses aligned with a model presented in special education literature outlining strategies to avoid learned helplessness (VanReusen, 1998). This project is now moving into the interview phase where students will be interviewed and categorized based on their participation in the online forum (listen & respond, listen only or no participation) to inquire about their experiences with this type of instruction. All interviews will be transcribed and analyzed for emergent themes and compared with rehearsal and online transcriptions. *References were omitted to accommodate word count, they can be provided upon request.

Geringer, John M. and Maxwell Mann, Leslie. Florida State University, Tallahassee. A Comparison of Choral and Solo Mode Singing: Intonation and Vibrato

Undergraduate singers often face the task of discriminating and making changes in vocal production between choral and solo singing modes. Unfortunately, the primary sources of information in these two realms, the choir director and applied voice teacher, frequently disagree regarding pedagogical practices and philosophies. The American Choral Director’s Association and the National Association of Teachers of Singing recognized this issue in a series of roundtable discussions at the 2009 and 2011 national conventions of the two organizations. Additionally, researchers have demonstrated differences in preferences and singing practices between choral and solo modes. Most notably, singers in solo mode tend to increase spectral energy in the 2-3 kHz range (known as the singer’s formant) compared to
choral mode. Listeners tend to prefer choral sound with more energy in lower harmonics and less singer’s formant. Little research has been completed that compares intonation and vibrato in the two modes. Recently, we (Author, in press) examined vibrato performances of 30 undergraduate female music majors in solo and choral modes in two contexts. To simulate the choral mode, we used prerecorded choral stimuli and accompaniments presented through headphones, with one ear uncovered so singers could hear themselves. Participants were asked to perform as if they were a member of the prerecorded ensemble. Singers performed with significant differences between modes in all vibrato measures: they sang with faster vibrato rates, wider vibrato extents, and used longer vibrato durations in solo mode.

One limitation of previous studies has been the unrealistic simulation of singing in the choral mode. Isolating a single voice for analysis has proven difficult in the ensemble context due to the acoustical blending of voices among the singers. In the present study, we incorporated a more authentic choral setting for singers by using contact microphones attached on the neck near the larynx with a Velcro strap. Pilot study found high agreement between the signals recorded by contact microphones and a quality acoustic microphone for analysis of intonation and vibrato. Contact microphones are not suitable for intensity or tone quality (spectral) analysis, as they record attributes of the voice that occur at the level of the larynx.

We used a prerecorded organ accompaniment, played through loudspeakers, which included a six-measure introduction. Each singer was fitted with the contact microphones and performed the musical excerpt individually, with the instruction to sing soloistically. Singers were also assembled in groups of eight, two per voice part (SATB). The ensemble of eight performed the excerpt in unison, with the instruction to aim for blend and balance as they would in a choir. In order to counterbalance conceivable effects of order, 16 singers sang in solo mode first, and the other 16 sang in choral mode first. At the end of the two singing tasks, participants completed a short questionnaire that explored singer perceptions about performing in solo and choral modes. From the short answer responses, keywords were categorized and analyzed.

We measured individual singer’s mean vibrato rates, extents, durations, and intonation in both solo and choral modes. Eight notes, which included every note of the excerpt with a half note or longer duration, were analyzed for each of the dependent variables. Data were analyzed with repeated measures two-way ANOVAs. Significant differences were found in all dependent measures: Participants sang with a faster rate, wider extent, and used vibrato a greater percentage of time in solo mode. Singers were also less flat in solo mode than in choral mode.

Responses to the post-performance questionnaire indicated agreement that there are adjustments to be made between modes of singing in general. The most frequently listed adjustments included blend (44%), vibrato (44%), dynamics (41%), and tone (25%). Regarding the present task, singers thought that they did make specific changes: Responses included dynamics (38%), vibrato (34%), vowels (22%), and blend (19%).

These findings corroborate and extend the initial study (Author, in press) on vibrato in solo and choral modes of female undergraduate music majors, which presented a simulated choir context with headphones. Although these studies attempt to describe current practices of singers in choral and solo modes, they do not address whether these results represent the desired performance practices of choral conductors and voice pedagogues. Future study might more directly investigate perceptions and preferences of vibrato and intonation performances in the two modes, as well as provide additional pedagogical implications of current findings.
Musicians invest an extensive amount of time practicing their instruments to acquire and refine their skills as performers. They practice to enable complex physical, cognitive, and musical skills to be performed fluently with relatively little conscious control, freeing cognitive processing capacity for high order processing (e.g., communicating interpretation). Deliberate practice involves cognitive and metacognitive thought processes in which an individual monitors and attempts to accomplish specific goals for the purpose of learning or acquiring skills and concepts that have either been self-selected or set by the teacher. Deliberate practice also requires intentional effort, proper resources, and guidance. Quality practice which leads to high musical achievement is dependent not just upon the quantity but also the effectiveness and content of each practice session. Despite the importance for children to develop an armory of task-appropriate strategies to aid their performance, evidence suggests that school teachers do not sufficiently emphasize this in their teaching, particularly during the early years of schooling. Researchers continue to study this disconnect between what should be and what is being taught. One possibility is that there is a lack of information about what constitutes effective practice and what strategies should be used. As recently as a decade ago, studies on practice noted the absence of theoretical frameworks to guide researchers and resulting variations in operational definitions of effective practice strategies from study to study. A need exists for a multidimensional analysis of these variables to create and test a model of deliberate practice.

This study is designed to meet that need. Through examining previous theoretical models related to practice and the extant research on practice-relevant variables nine variables were extracted and identified. Using latent variable modeling these nine variables were examined to further understand their relationships in the area of deliberate practice.

Research questions include: 1. What interrelationships exist among the following variables: (a) student characteristics, (b) physical environment, (c) social influences, (d) self-regulation, (e) psychological characteristics, (f) forethought, (g) practice strategies, (h) metacognition/self-reflection, and (i) practice commitment? 2. Can a theoretical model of deliberate practice be created and statistically tested? One thousand woodwind and brass players in grades 9 – 12 from public schools in the State of Florida participated in the study. This instrument used in this study is a survey consisting of 80 questions aimed to elicit a response to the nine variables. A pilot study was performed to test and report the validity and reliability coefficients. A factor analysis was also performed to ensure that all survey items loaded highly onto the appropriate variable. Cronbach’s alpha was used to calculate the internal reliability for the measure. The measure was found to be internally consistent. Descriptive statistics were calculated and normal distributions were found for all variables. A correlation analysis was conducted to answer the first research question, which addressed the interrelationships among the independent and dependent variables. To answer the second research question, a latent variable model was used to statistically test a model of deliberate practice.

The results of this study provide numerous implications for the field of music education and applied music study. The high reliability of the measures and their subscales not only support the causal interpretations of the model, they may also provide valuable measurement tools for other music educators. Results indicated that self-regulation and psychological characteristics (motivation, self-efficacy) have strong direct effects on practice commitment and the three phases of practice (planning/goal setting; practice strategies; metacognition/reflection). Student characteristics, physical environment, and social influences have direct effects on self-regulation, psychological characteristics, and indirect effects on the remaining variables.
Effect of Teaching Applied Lessons on a High Frequency, Short Time Frame, and Rapid Pace Schedule in a Higher Education Setting

The purpose of the present investigation was to determine if the frequent, short, intense lesson model found effective in swim lessons and with a beginning instrumentalist would be effective with three young students in a university School of Music.

Instead of 12 hour long lessons over the semester, they scheduled 36 twenty minute lessons (3 per week).

Case 1 – Kelsey - Sophomore Music Education Major. Her skills on the clarinet are appropriate to her major and age. Her personality can generally be described as “a pleaser.” Logs of her improvement showed that she was working on scales and scale type exercises at the beginning of the term, but had worked through all of those by the ninth lesson. It was stated by the teacher that this went faster than usual because of the constant fixes she would receive every other day, and the intense daily focus. Issues of air continued through the term, and was logged into the 25th lesson, but from that point on, air comments were complimentary. The frequent reminders of the physicality of her breathing allowed her rapid improvement. Around lesson 20, logs indicated work on subtle pitch changes, and later phrasing and rhythmic subdivisions.

Case 2 – Kristen - Freshman Music Performance Major. Her skills on the clarinet are technically appropriate to her major and age, but she does not project her sound at a level that would be expected and showed very little awareness of musicality. Her personality can generally be described as “a bit shy.” Logs of her lessons showed that she was working on scales and scale type exercises at the beginning of the term, but had worked through all of those by the tenth lesson. She, however, began working on etudes in her third lesson, and musicality was mentioned in the fifth. Issues of air were mentioned throughout the logs, and reflect as much on the value system of the teacher as the students. Aspects of playing musically appeared early in the term (lesson five), but became a principal theme from about lesson 15 on. The final couple of weeks there was quite a bit of focus on consistency.

Case 3 – Katie - Freshman Music Therapy Major. She has more serious fundamental issues. She came with some bad habits that make her less than technically or musically appropriate for her major and age. She has historically been inconsistent with her practice habits, and has generally not demonstrated any commitment to improving. She could be described as “a bit reticent.” Logs of Katie’s lessons began with scales. Etudes began being introduced in the third lesson (still week 1). However, most of the focus of her lessons were on fundamental mechanics. Dynamics, subdivision, and musicality were not included heavily until lesson 21 and later. However, improvement in Katie’s playing seemed even more dramatic than the other two students. Even up to the 30th lesson, focusing on an aesthetically musical performance was not in the log. Katie’s ability to recognize her hand position problems on her own and fix them improved dramatically throughout the semester. It is also important to know that her attitude toward practice changed completely.

Results and Discussion - The main objective of applied music lessons is improved ability to play one’s instrument. A panel of graduate students identified excerpts from the final lesson as being superior to the beginning of the term with 96% accuracy. Clarinet professors who listened to the excerpts found that the level of progress reflected a semester’s worth of improvement. Results suggest that this experiment was a complete success for these students. The students made better than expected
progress across the board. They were consistent in their practice, and the frequency of lessons allowed them to get almost instant feedback. They moved from one skill to the next in quick succession. All three students enjoyed the different paradigm. Katie expressed a complete attitude change toward her instrument. The instructor also remarked on the benefits of the consistent practice that this schedule required. She also liked the intense focus in each lesson, which had not existed in the longer format. She commented that this model is perfect for younger (underclass) students. In conclusion, this is probably not a model that would be useful for performance majors, or older students. But, for younger students who still need constant reminders about the physicality of listening, playing and communicating ideas where performance is not their sole focus, this model seems to be highly advantageous.

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Performance Consideration of Middle and High School Instrumentalists

A fundamental goal of any educational program is to teach novices to think and behave like experts. Researchers have found fundamental differences between expert and novice educators. Similar research within music education has also found differences between novice teachers and conductors. For example, Goolsby (1997, 1999) attempted to identify the musical focus of expert and novice conductors. The researcher found that expert conductors, more so than novice conductors, focused on abstract concepts such as expressivity and harmony. However, both novice and expert conductors devoted much of their attention to rhythmic and tempo issues. Similarly, Meyer (1989) organized the aspects of music performance into primary parameters (e.g., melody, harmony, etc.) and secondary parameters (e.g., dynamics, tempo, etc.). Although the extant research literature has provided much insight into the perceptions and behaviors of novice teachers and conductors, little attention has been given to the cognitive processes of novice instrumentalists. Identifying which aspects of music performance novice instrumentalist consider to be most important might be beneficial to music educators seeking a more informed and complete approach to instrumental music instruction. The purpose of this study was to investigate the primary ensemble performance considerations of public school instrumental music students.

Specifically, the researchers sought answers to the following: (1) What are the differences in ensemble performance considerations between middle school and high school musicians? (2) What are the differences in ensemble performance considerations between wind/percussion students and string students? (3) Are there differences in ensemble considerations between students who take private lessons and those who do not take private music lessons? Participants (N = 344) were middle (n = 178) and high school (n = 166) instrumentalists who attended a large university-based summer music camp in the southeastern United States. Of these students 184 were band and 160 were string students. The camp has operated for over seventy years and annually attracts students from across the country, as well as internationally. Consequently, students attending the camp come from multiple geographic locations, represent diverse cultural and musical backgrounds, and have varying musical abilities. Participants completed a researcher-constructed two-part survey.

Part One asked participants to indicate their grade level (middle school or high school), their primary instrument family (wind/percussion or strings), and if they took private lessons. Part Two presented twelve musical items and asked participants to rank order each item in order of importance, which they considered when performing on their instrument in a musical ensemble. The items included a mix of performance concerns including those which may be considered more technically related (e.g., correct
notes, rhythm precision/accuracy, articulation/bowings) and items which may be considered more musical in nature (e.g., phrasing, musical style, expressivity) The survey was administered to all students attending the camp during the evening recreational time in the camp dormitory. There were no specific instructions other than students being asked to complete the survey pertaining to performance considerations. Students were not required to participate and were not identified in any manner on the survey. Completed surveys were then collected for data analysis. Overall, the data indicated students ranked “Correct Notes,” “Tone Quality,” and “Intonation/Tuning” highest among the twelve performance items that they considered when performing in an ensemble. When dividing students by grade levels, middle school students ranked “Correct Notes,” “Tone Quality,” and “Rhythm Precision/Accuracy” highest. High school students ranked “Tone Quality,” “Correct Notes,” and “Intonation/Tuning” highest. String students ranked “Correct Notes,” “Rhythm Precision/Accuracy,” and “Intonation/Tuning” as their primary performance considerations. Wind/Percussion students ranked “Tone Quality,” “Correct Notes,” and “Intonation/Tuning” as their primary considerations. Students taking private lessons (n = 261) ranked “Correct Notes,” “Tone Quality,” and “Rhythm Precision/Accuracy” as their principle concerns and students not taking private lessons (n = 83) ranked “Tone Quality,” “Intonation/Tuning,” and “Correct Notes” as their primary concerns. The results seem to suggest that students in this study were most concerned about the technical components (e.g., correct notes) of performing than items that may be considered as more musical elements (e.g., phrasing). The possible exception to this summation is tone quality.

While this conclusion may not be surprising, the extent of the results may be surprising. The results suggest that concern for more technical aspects of performing are consistent throughout grade levels, primary instrument, and whether students take or do not take private lessons. Consequently, teachers may seek to promote aspects considered more musical in order to encourage a more complete performance experiences with their students.

Keown, Daniel. University of Missouri-Kansas City, MO. The Effects of Projected Films on Singers' Expressivity in Choral Performance

The perception of motion has been an essential ability to understanding the physical world for humans since infancy. As a prominent element in the world of film, television, and video games, motion can be expressive by triggering emotional responses on the human psyche and conceptions of reality. In addition, sound and music embedded within these forms of on-screen media can have cognitive, physiological, and psychological influences on the spectators’ perception and interpretation of the visual narrative. These responses are often stimulated by the degree of correspondence and agreement between various factors of the music and film known as congruency. Although much of the research in film music has explored music’s effect on the perception of the film narrative, recent investigations have noticed film as an influential factor on how a listener perceives the music.

The process of recording music for film has traditionally involved a music ensemble responding to the communicative gestures of a music conductor through the process of synchronizing music to film. What would happen if performers, instead, responded to the on-screen visual of the film itself during a performance? Due to the emotional effect that can arise from both an expressive music performance and the relationship between music and a film’s narrative, the need to study performers’ expressive musical influences while simultaneously responding to a film was the impetus for this study. The purpose of this investigation was to explore the effects of projected film visuals on singers’ expressivity in choral performance.
The study was divided into three phases.

In Phase One, university choir singers (N = 21) viewed eight audiovisual pairings (two film excerpts and four newly composed choral etudes) and rated these pairings according to perceived music to film congruency. Based on these ratings, two choral etudes were identified that elicited the broadest congruency contrasts when paired with the film segments.

In Phase Two, a different group of university choir singers (N = 116) rehearsed and prepared both of the selected choral etudes referred to as “Doh” and “Noo.” Subsequently, these singers were organized into eleven smaller chamber ensembles, and performed each choral etude three times under the following conditions: (1) while viewing congruent film, (2) while viewing incongruent film, and (3) with no film projected. After each performance, singers reported their level of self-expression. At the completion of all three performances, singers reported their preferred performance condition.

Finally, participants listened to their audio-recorded performances and rated these for performance expressivity and personal preference. During Phase Three, choral experts (N = 8) rated performance expressivity and reported personal preference for each audio-recorded performance. A two-way ANOVA with repeated measures found significant main effects of both etude and film visual performance condition on participants’ expressivity ratings (p < .001).

Additionally, a significant etude x film visual performance condition interaction was discovered (p < .001). Participants rated self-expression significantly higher when singing with a congruent film compared with other film conditions for both etudes (p < .001). Chi-square tests found most preferred experiences during congruent performances, and least preferred experiences during incongruent performances for both etudes (p < .001). Expressivity ratings for audio-recorded performances indicated significantly higher expressivity ratings for the performances influenced by the congruent film visual of etude “Doh” (p < .05), while no significant differences were found for etude “Noo” (p > .05). Implications of these findings will be explored in relation to projected film visuals’ contribution toward ensemble rehearsal ‘extra-musical’ pedagogy, music education curriculum, cross-discipline collaboration for diverse learners, compositional collaboration, and performance practice, with recommendations for future research. Those in attendance will have the opportunity of exploring pedagogical processes involving the use of projected film within a rehearsal setting.

Ultimately, these interdisciplinary applications may help diversify our understanding of art in society while striving for relevant approaches, and add depth while broadening the perspective of how these experiences can allow further understanding of performance expressivity through the interaction of film.

Kim, Sangbum. Temple University, Philadelphia, PA. Effects of Verbal-Only and Paired Verbal-Gestural Instruction on Performance Skills of Developing Wind Instrumentalists. PPI

The purpose of this study is to investigate the effects of verbal-only and paired verbal-gestural instruction on the performance skills of wind instrumentalists with no more than three years of performance experience. Reviewed are different conducting strategies and their effects on musical expression in ensemble performance as demonstrated by small ensembles. Number of studies mentioned effects of verbal instruction were shown to be important strategies in music rehearsals (Price, 1998; Yarbrough, 1981). While it may be assumed that all rehearsal verbalizations must function as effective methods for the delivery of music instruction, investigators have reported the use of various
types of verbalizations that varied in effectiveness in a rehearsal setting (e.g., directive statements and negative statements, directive statements and figurative statements). (Duke & Henninger, 1998, 2002; Sheldon, 2004). It is generally agreed that communication in rehearsal refers to players’ responding to a conductor’s nonverbal instructions (Gallops, 2005; Morrison, Price, Geiger, & Cornacchio, 2009). Teachers’ instruction delivery skills that have been identified as effective tools in music ensemble rehearsals include posture, eye contact, gestures, facial expression, verbal instruction and vocal inflection (Hamann, Baker, McAllister, & Bauer, 2000; Madsen, 2003; Whitaker, 2011).

As an isolated variable, verbal instruction is common in most classrooms and can be categorized in various ways to give feedback, correction, explanation, and reinforcement. Dickey (1991) categorized verbal instruction into directions, explanations, and imagery (including metaphor and analogy) to compare effects of verbal instruction and modeling instruction in ensemble rehearsals. Dickey’s classification of verbal instruction is similar to that of Grenchesky (1985) in which the relationship among nonverbal and verbal behaviors was investigated. Body motions involved in a rehearsal can be thought of as gestural instruction. Gestural instruction in a musical context refers to specific conducting movement and may include physical movements for enhancing musical content and intent (Gødley & Leman, 2010). Yarbrough and Hendel’s research (1993) explicating nonverbal behaviors as an influenced function in rehearsal along with verbal instructions, and the relationship between the two ways of feedback. In their study, audio-video treatments yielded higher scores compared to the other modes of presentation (audio only, video only, script only). Juchniewiz (2008) found a player’s different body movements affected the listeners’ ratings of phrasing, rubato, and dynamics. This research was confined to the results of visual observation and there was no significant interaction with the audio-only condition. This study lends supports Davidson’s (2002) findings in a study that investigated the influences of the visual stimulus of physical movement on observers. In this present study, only the audio portion of rehearsals will be recorded and presented to evaluators for adjudication. These studies introduce various effects of verbal instructions, non-verbal instruction, musical gestures, delivery strategies and conductor effect in rehearsals. However, there are presently no studies that compare verbal and paired verbal-gestural instructions specifically. I will examine the effects of verbal only instruction and paired verbal-gestural instruction on performance outcomes among intermediate level wind instrumentalists. Two sets of participants will be used in this study. Audio stimulus files will be derived from performances generated by the first set of participants, student musicians who will be randomly assigned to one of the two instruction groups. That sample consists of students (n=30) from one intact public junior high school band. The second set of participants consists of university undergraduate and graduate music majors (n=40) who will listen to and evaluate the audio stimulus files. Middle school musicians will be randomly assigned to one of ten performance trios and trios will be randomly assigned to one of two teaching conditions: (1) verbal-only, or (2) paired verbal-gestural. Students in each trio will be assigned to Part 1, 2, or 3 of a two-minute performance selection that has been arranged purposefully for this study, taking into account participants’ age and performance level. Student participants will perform this selection after rehearsal in their given teaching condition. The student-investigator will be the conductor/teacher in each condition. Rehearsals, consisting of sight-reading the work, investigator-led rehearsal, and final performance, will be audio recorded for subsequent evaluation. Evaluators, undergraduate and graduate instrumental music majors (n=40) from a large research institution in the northeast US, will listen to the recordings and rate each rehearsal using a Continuous Response Digital Interface (CRDI) using the following criteria: musicality, technical accuracy, and sound quality. Aggregate data will be analyzed using analysis of variance (ANOVA) comparing performance ratings among the two rehearsal strategies. Then, A post-hoc Tukey multiple comparison test will also be used to determine any differences among groups and
Practicing in the new world: initial Investigation of Practicing Strategies Related to the Première of Contemporary Music

The purpose of this study was to better understand how expert musicians practice with a view to applying strategies to student-musicians. In the United States, children learning to perform in a public school setting will generally be part of ensembles (i.e., orchestras or bands) and primarily practicing ensemble parts. However, the investigation into practice behaviors of expert musicians has relied heavily on case studies and interviews of solo performers. A qualitative, semi-structured interview methodology was chosen in order to compare results with previous qualitative studies and to highlight the unique approaches orchestral musicians have to learning music for performance. Based on our background as musical performers (one researcher is a collaborative pianist and the other, an orchestral musician, both active performers at the time of this research), we came to the research with views about how experts practice, but were unwilling to apply patterns based on the learning of solo repertoire to the learning of orchestral repertoire. We expected differences to emerge between the practicing of solo and ensemble works. We also chose a qualitative methodology because we believed that there were practice strategies not yet discussed in the research literature that might come to light if the context of the questions was focused. We devised interview questions that focused on preparing newly composed music for première. By asking specifically about practicing newly composed music, we hoped to place these experts in a context more similar to that encountered by the student-musician; removing some of the influences of past learning. Thus, the purpose of this study was to explore practice strategies of professional orchestral musicians preparing for a première. This initial investigation was a case study conducted with a member of the New York Philharmonic’s woodwind section. This interview served as a pilot test for the interview procedure and questions, but also provided preliminary data which will be reported here. The musician was interviewed over two days.

The questions used to drive the interview were: 1. What factors determine the amount of time you need to prepare a new piece prior to the 1st rehearsal? 2. What strategies do you use to prepare newly composed works? 3. What do you find are the most challenging aspects of preparing a piece for première? 4. I’m going to show you a copy of a piece of music that you prepared for the 2012-2013 season. Describe the process of preparing this particular piece for performance. 5. How has preparing pieces for premieres informed other aspects of your playing or teaching? The interviews were transcribed and both researchers analysed for patterns.

Practice strategies designed to create an aural model of the piece and understand how the one instrumental part being learned fit into the whole emerged as major themes. The musician studied scores and at times notated his individual part and other parts that impacted his in a software notation program to study and hear how the parts fit. The musician likened this strategy to how composers such as Bach would learn to compose by copying scores of earlier composers. He would change elements, re-notating the music (e.g., augmenting rhythm, eliminating unimportant pitches, re-barring) for better understanding. At times, he would practice along while the software program reproduced the sound of the parts. He also would record a click track that allowed the practicing of mixed and changing meter; sometimes recording himself tapping, other times using the notation program to produce the unique “beat”. To develop an aural model, he recorded himself playing at a very slow tempo, sometimes one
bar at a time, using technology to join the segments and play back at tempo. This allowed his ear to hear himself playing at tempo before he was able to technically perform at tempo. Now I have an idea what the target is. This is what I’m going to be producing. Having that in my ear…. Rather than starting slowly and working my way up, fighting my way up, and hoping I can get there, I can hear THERE, I can hear where THERE is, sometimes it gives me a leap to know what the result is, having it in your ear. And to be able to say, okay, let’s produce that. The conclusion is that practicing 21st century, orchestral parts is uniquely challenging and unique practice strategies are used. These strategies can be adapted for use with students.

Nelson, Patty K. Shorter University, Rome, GA. Piano Curriculum and Jerome’s Bruner’s Learning Theory

This study, will be done with the membership of the Music Teachers National Association (MTNA) The questionnaire 21-items including demographics, what method book(s) the teacher is currently using, staff introduction, hand position, rhythm reading, interval reading, and theory study. While all the members will be sent the questionnaire, only those who currently teach beginning piano students ages six to nine will complete all of the questionnaire. Those who do not meet the criteria, will be taken out of the questionnaire on the second question. A three-week time frame will be allowed for the MTNA membership to respond to the questionnaire.

Once the data is analyzed and the method books used most often by the participating teachers are determined, based on the questionnaire, the most used method books will be surveyed noting the order musical concepts are introduced in each book. The survey will be done by the researcher, a university piano professor, and an independent piano teacher. The matrix being used divides the concepts into the same categories as the questionnaire. The rankings of the judges will be placed in the SPSS software, and a Kendall’s coefficient of concordance will be run. The Kendall’s test shows the amount of disagreement between the judges. If they agree on every concept the coefficient will be a +1.0. The smaller the number, the greater the disagreement. The desired result is a score of +1.0. If the Kendall’s test is lower than the desired +1.0, the researcher will go through each concept to see where the disagreement has occurred. If two of the three judges agree on the rank of a concept, it will be input into SPSS (ver. 18) as that rank. If there is no agreement on the rank of a concept, the judges will meet and come to a consensus as to the placement of the concept in question. Once the concepts of the method books are ranked and placed in the SPSS software, a Spearman’s Rho Rank Correlation will be run with the ranks of the participating teachers (Charles & Mertler, 2002, p. 288; Upton & Cook, 2006, p. 400). The Spearman’s Rho correlates how closely the teachers’ rankings align with the methods’ rankings.

The researcher, the university professor, and the independent piano teacher also will place each concept within Jerome Bruner’s (1966) enactive, iconic, symbolic learning theory using the matrix. Specific instructions will be given to the raters as to what qualifies as enactive, iconic, and symbolic. If a concept is simply introduced on the page, this will be a symbolic teaching of the concept. If the concept is accompanied by a picture which represents the concepts, this will be an iconic teaching of the concept. If the student is instructed to play, clap, sing, or move to learn the concept, this will be an enactive teaching of the concept. If the symbol is accompanied by a picture, the concept will be placed in both the iconic and the symbolic categories. Some concepts may be learned in multiple ways and will therefore be placed in all categories which apply. The Bruner categories of the judges will be placed in the SPSS software (SPSS ver. 18), and a Kendall’s coefficient of concordance will be run. Once concepts are categorized, the researcher will determine based on the finding from the researcher, the piano
teacher, and the piano professor, if the most used method books use none, some, or all of Bruner’s enactive, iconic, symbolic. Because the concepts will be ranked based on their order of introduction, the researcher will be able to determine if the earliest concepts are introduced enactively and the later ones symbolically. The researcher will also be able to determine how often enactive is used as opposed to iconic as opposed to symbolic and whether concept introduction is done more often in one mode or another.

Rechel, Lynn. Arlington Public Schools, VA. The Effect of Instructional Singing Tempo during Specific Song Acquisition of Preschool Aged Children

The effect of instructional singing tempo during specific song acquisition of preschool aged children

This study investigated the effect of instructional singing tempo and a child’s ability to accurately replicate that song. Many studies that have addressed the concept of tempo focused on tempo preference for listening to a piece of music. The studies that did focus on performance tempo (Duke & Pierce, 1991; Rohwer, 2000; Malbran, 2000) generally used instrumentalists as participants and not vocalists. When tempos have been noted in performance studies, they range from 60-120 beats per minute (bpm) (Flohr, 2005). Very little research has focused on preschool aged singers and what tempos should be used to teach them songs. Few studies have addressed the area of instructional tempo. There is a shortage of research to indicate the consequential effect of instructional singing tempo on song acquisition in early childhood. It is not only important to consider a developmentally appropriate performance tempo but also an appropriate instructional tempo. The theory of tempo stability (Bergeson and Trehub, 2002) suggests that the tempo selected to teach a song to children will be the tempo that they will replicate, +/- 8% from the original tempo. In music education, books and articles are available that address guidelines for pitch range. The concept of developmentally appropriate tempo ranges are not as easily located. As educators, we must make thoughtful, educated decisions about all concepts, including tempo, in music education when selecting songs for our students. It is important that the teacher select a tempo within a range that is suitable for students to learn and appropriate for performance. Therefore, the purpose of this study was to investigate the effect of instructional singing tempo during specific song acquisition of preschool aged children. The study had two research questions: 1. What is the effect of slow and fast singing tempos during instruction on preschool children’s performance of musical components (melody, rhythm, and text, individually and combined) of a duple major song over time? 2. Will children’s performance tempo be the same as or similar to the presented instructional tempo?

Method Participants were randomly assigned by classroom to Tempo Group A, who learned the study song at 120 beats per minute (bpm), or to Tempo Group B (60 bpm). A three week pilot study (N = 14) validated the study song, teaching procedures, recording procedures, and the scoring rubric. Three judges evaluated individual performance recordings from the pilot study in three dimensions: melody, rhythm, and text. During the six week main study, participants (N = 50) were exposed to the song 30 times. Three judges evaluated the individual midpoint and final performance recordings from the main study in three dimensions: melody, rhythm, and text.

Results Interjudge reliabilities were calculated using a Pearson product moment reliability. Data analysis used a two-way Multiple Analysis of Variance (MANOVA) with repeated measures for the individual components and an Analysis of Variance (ANOVA) with repeated measures for the composite score. The melodic scores, the rhythmic scores, the text scores, and the composite scores showed statistically significant growth for both groups from the week three recordings to the week six recordings. There was
no statistically significant difference in any of the scores between the instructional tempo groups. The mean of complete performances for both tempo treatment groups moved toward the center of the tempo range of 60-120 bpm. Tempo Group A’s mean of complete performance was 114.26 (-5%), compared to the instructional tempo of 120 bpm. Tempo Group B’s mean of complete performance was 65.22 (+8%), compared to the instructional tempo of 60 bpm. Using a t-test, the change in performance tempo from instructional tempo was statistically significant.

References


Rutkowski, Joanne. Pennsylvania State University. University Park. The Comparative Effectiveness of Male and Female Singing Models on Kindergarten Children’s Use of Singing Voice Achievement

Replicable models are important as children develop musically but particularly when learning to use their singing voices. While many preschool and elementary teachers are female, it seems more and more males are assuming these roles. Male teachers often ask me if they should sing in their normal octave or use falsetto when teaching young children. Previous research has yielded mixed results. Some researchers have found that elementary school aged children sing more accurately with a female than male model singing in his natural range (Hendley & Persellin, 1996; Sims, Moore, & Kuhn, 1982; Yarbrough, Green, Benson, & Bowers, 1991). More specifically a child model is most effective, then a female model, then a male model (Green, 1990) and particularly a female singing with no vibrato (Yarbrough, Bowers, & Benson, 1992). In addition, a male falsetto model has been more effective than a male singing in his natural range (Paul, 1996). These results seem to suggest that males should use falsetto when providing singing models for children. In fact, use of a male model may actually hinder vocal development (Hendley & Persellin, 1996) and encourage lower register singing (Price, Yarbrough, Jones, & Moore, 1994). However, others have found that children can sing well with a male model (Small & McCachern, 1983). Third graders responded as well to a male voice as they did to a piano and resonator bells (Franks, 1992) and no differences were found between a male model using falsetto or normal range, except when singing patterns (Montgomery, 1988). In my work with preschool children in a more informal setting, I have noticed that many of these children do not seem to have difficulties singing along with my male undergraduate students. In this setting, the children hear female and male voices singing simultaneously in their appropriate octaves. How would kindergarten children respond in a similar situation? The purpose of this study was to investigate the effect of a male singing model on
kindergarten children’s singing voice achievement. During the initial phase of this study, 20 kindergarten children received structured informal music guidance once a week for 30-40 minutes over a three-month period (September to December) from a team of two music teachers, one female and one male. During this phase, the teachers sang together during activities, but sometimes the female teacher took the lead; other times the male teacher. After one music class, in September, the children were administered the Singing Voice Development Measure (SVDM) twice, two days apart. The female teacher administered the test first with her voice as the singing model. The male teacher administered the test on the second day with his voice as the singing model. In December, SVDM was administered in a similar manner. Informal observations of the children’s singing led the teachers to believe that the children were making minimal progress in their use of singing voice. The female teacher team-taught with another female teacher over a subsequent three-month period (February to May). Informal observations of the children’s singing during this time period indicated that the children’s singing was improving greatly. Therefore, it became of interest to investigate how the children would sing with both male and female models at the end of the instructional period in May. The female and male teachers administered SVMD again in May, comprising phase two of the study. Two raters evaluated the randomized recordings of the children’s (n=18) use of singing voice. Intra-judge reliabilities (r=.89 to 1.00) and inter-judge reliabilities (r=.880 to .991) were high. Paired samples t-tests revealed significant differences between models, favoring the female model, for all tests except neutral syllable performances in December. Significant gains in use of singing voice were found for the female model from December to May and from September to May; as expected, gains from September to December were not significant. No significant gains were found for the male model. Results are consistent with previous research findings. It appears a female model is more effective for kindergarten children learning to use their singing voices. However, since gains in singing occurred during the second phase, perhaps differences in models would not have existed on the May test if the male teacher had continued to team-teach classes from February to May. Further investigation is recommended. When kindergarten children are provided with informal structured music guidance and given opportunities for small group and individual singing responses their use of singing voice significantly improves but that improvement does not emerge until later in the school year, after more than 3-months of instruction.

References


The Effect of Conducting Plane on Band and Choral Musicians' Perceptions of Conductor and Ensemble Expressivity

Although the use of different conducting planes (i.e., where a conductor's pattern lies in relationship to their body) features prominently in the number of published opinions found in conducting textbooks, the lack of empirical evidence for plane location provides a basis for further exploration. Understanding musicians' perceptions about plane usage could be helpful for conducting instructors as they teach beginning conductors strategies for eliciting expressive responses from their ensembles. In addition to designing our study to determine whether the use of different conducting planes would influence perceptions of conductor or ensemble expressivity, we sought to delineate responses between band and choral musicians. Gaining knowledge about these musicians' beliefs might help better inform and differentiate conducting instruction. The purpose of this study was to examine whether the use of various conducting planes (high, medium, low) affected college musicians' ratings of ensemble and conductor expressivity.

Participants (N = 120) were ensemble members enrolled in either band (n = 60) or choir (n = 60) at two separate mid-sized university music programs. Participants were shown three videos of both a choral and band conductor conducting mm. 46 – 61 from Morten Lauridsen's, O Magnum Mysterium (for a total of six videos). These videos were synchronized with identical, high-quality audio specific to each genre. After watching each video, participants evaluated the conductor’s expressivity on a 10-point Likert-type scale anchored by not expressive (1) and very expressive (10). The ensemble's expressivity was then evaluated using the same 10-point Likert-type scale. In addition to these numeric ratings, participants were asked to write one brief comment about either the conducting or ensemble performance at the conclusion of each of the six videos.
Ensemble Expressivity Ratings. A repeated-measures ANOVA with one between-subjects factor (ensemble membership) and one within-subjects factor (conducting plane) was used to determine the effect of ensemble membership on ensemble expressivity ratings. Results indicated no main effect for ensemble membership, $F(1,118) = .231, p = .63$, partial $\eta^2 = .002$. A main effect was found for the within-subjects variable of conducting plane, $F(4.38, 517.33) = 9.21, p < .001$, partial $\eta^2 = .07$. No significant interaction was found, $F(4.38, 517.33) = 1.43, p = .22$, partial $\eta^2 = .01$. A Bonferroni post hoc test for multiple comparisons revealed that participants’ ensemble expressivity ratings for both the choral and band high conducting planes were significantly lower than all of the other conducting planes. No statistically significant differences were found between the low and medium conducting planes for either the band or choral ensemble expressivity ratings.

Conductor Expressivity Ratings. A repeated-measures ANOVA with one between-subjects factor (ensemble membership) and one within-subjects factor (conducting plane) was used to determine the effect of ensemble membership on conductor expressivity ratings. Results indicated no main effect for ensemble membership, $F(1,118) = .236, p = .63$, $\eta^2 = .002$. A main effect was found for the within-subjects variable of conducting plane, $F(4.47, 527.48) = 25.13, p < .001$, partial $\eta^2 = .18$. No significant interaction was found, $F(4.47, 527.48) = .65, p = .64$, partial $\eta^2 = .01$. A Bonferroni post hoc test for multiple comparisons revealed that participants’ conductor expressivity ratings while viewing the band conductor at both the medium and low conducting planes were significantly higher than the high conducting plane. All three of the choral conducting planes were significantly different, with viewers significantly favoring the choral medium plane. Both the choral high conducting plane and the band high conducting plane videos were rated significantly lower than all of the other conducting planes.

Participants’ Written Responses. Participants’ written responses were mostly negative after viewing high plane conducting videos (154 of 260 total comments; 59.23%). The number of negative comments given after watching the low plane (96 of 275 total comments) and medium plane (63 of 268 total comments) videos were much lower, 34.91% and 23.51% respectively.

Implications for Music Education. The findings of this study appear to confirm general conducting pedagogical advice that advocated for the usage of the medium conducting plane. One might reasonably assume that assistance by instructors in early field experience placements and beginning conducting courses in recognizing the importance of expressive conducting could help strengthen preservice teachers’ demonstration of expressive conducting. Choral and band directors might consider modifying their conducting plane to reside somewhere between their naval and chest in attempts to evoke more expressive playing from their ensembles. This recommended modification may also impact how audiences and festival adjudicators perceive the overall expressivity of the conductor and ensemble.

Sogin, David. University of Kentucky, Lexington. *An Analysis of the Maximum and Minimum Bow Bridge Distance for Violin Performances with a Normal Bow versus a Straight Bow*

Most string teachers use the three major string factors of producing a characteristic sound in their teaching. These three major factors include the speed at which the bow moves or accelerates across the strings, the weight (pressure) or force that the performer exerts with the bow, and finally the placement of the bow between the bridge and the fingerboard of the instrument (Askenfelt, 1986, 1989; Nichols, 2002; Raman, 1918; Schelleng, 1973; Young, 2007).
The early investigations by Raman (1918) and Schelleng (1973) were more theoretical, investigating the steady state constraints of bow force, pressure or weight that is applied with the bow to the strings. Askenfelt (1986, 1989) was the first to use real violins in studies calibrating the measurement of bow speed, weight, and placement. It is these three variables speed, weight or pressure, and bow placement that have been the most widely studied (Askenfelt, 1986, 1989; Nichols, 2002; Young, 2007).

Many violin pedagogues have proposed that the bow adjustment between the bridge and fingerboard is used to create dynamic changes in the music by purposely altering the bow-bridge distance Galamian (1962), Gerle (1991), and Fisher (1997). However, Schoonderwaldt (2009) and Schooderwalt and Demoucron (2009), found that bow-bridge distance only had a minor influence on the sound spectrum of the instrument. This seems to challenge the more common belief among string pedagogues that strategically bringing the bow closer to the bridge would in itself cause an increase in the brightness of the sound. The purpose of this study was to investigate the Maximum and Minimum bow bridge placement during a musical performance by three college-trained violinists. The conditions for which this was investigated included asking the string instrumentalists to perform “Normally” with their bow versus performing with a “Straight bow”. The dependent measure was the distance of the bow from the bridge in inches. In order to measure the minimum and maximum bow distance from the bride HD videos were made using an elaborate set of targets attached both to the instrument and to the bow. Additional software was used to track the targets and analyze each frame of the video as specified by the target patterns. The data is reported in inches from the contact point of the bow to the bridge. The results showed statistically significant differences in the means between the “Normal” (X= 1.18) versus “Straight” (X = .92) conditions performers played the excerpt, the Minimum (X = .86) and Maximum (X= 1.24) bow placement from the bridge and bow direction, that is the down-bow (X= 1.00) and up-bow (X1.09) stroke of the bow.

Strickland, Kathryn. Northwest Missouri State University, Maryville. The Effect of Real-Time Pitch Tracking and Correction on High School Instrumentalists' Tuning Accuracy

The main purpose of this study was to determine the effectiveness of pitch tracking and correction (auto-tuning) on the intonation performed by high school clarinet (n = 30) and trumpet (n = 30) players with at least three years of experience in the large ensemble setting. Participants (N = 60) were assigned to one of three treatment groups, each differentiated by means of intonation evaluation. An aural group (n = 20) used Real Time Pitch Tracking and Correction (RTPTC) software; a visual group (n = 20) used an electronic tuner; and a control group (n = 20) “played in-tune to the best of your ability.” All three groups played target pitches documented as unstable from an intonation standpoint (clarinet A4 and trumpet D4) in single-pitch, melodic, and ensemble contexts. All performances were evaluated for cent deviation through the RTPTC software. The 2-way interactions of instrument x lessons (p = .05), context x group (p < .05), and instrument x context (p < .05) were found to be significant. Clarinet participants with private lesson experience performed with more accurate but overall sharper intonation than their trumpet counterparts. Aural and visual groups were able to perform below the threshold of the just noticeable difference in the single pitch context and improved from out-of-tune to in-tune across treatments, while results for these groups in the melodic and ensemble contexts were mixed and may have been affected by the constraints of time. The control group showed improvement across the melodic treatment, but those improvements have questionable musical significance as they are not below the threshold of the just noticeable difference. Clarinets performed significantly more in-tune than trumpets in the single pitch context, while the opposite was true in the melodic and ensemble contexts. The main effects of group, instrument, context and lessons were not statistically significant (p
Responses to student questionnaires reflected knowledge of tuning strategies among a portion of participants including instrument tendencies, beat elimination techniques, and methods for correction. Time may have been a confounding factor related to comfort with included technology, based on student questionnaire responses. Director responses yielded themes related to fostering student independence with intonation, and daily use of methods for teaching intonation including the above mentioned tendencies, beat elimination, and correction strategies.

Thames, Geoff. University of Arizona, Tucson. The Effects of Aural Models and Self-Efficacy on High School String Orchestra Students’ Ability to Improvise

The purpose of this study was to determine the feasibility of integrating improvisational instruction into orchestra rehearsal, and to determine if string orchestra students could learn to improvise in a greater capacity within one instructional unit. Specific research questions were (a) What extent do orchestra students’ abilities to improvise increase as a result of the instructional treatment? (b) Does self-efficacy for improvisation increase as a result of this instructional intervention? There is a lack of extant research that investigates the implementation of improvisational instruction for string orchestra students. Therefore, the researcher created an instructional unit to teach high school string orchestra student the process of musical improvisation through classical music. Five theoretical instructional design principles of reflection, learners as critics, multiple representations, clear and engaging flow of activities, and standards based instruction were used in the creation of this instructional unit (Design Principles Database, 2013).

The design of this quasi-experimental intervention study was treatment/control, pretest/posttest. Purposeful sampling was used to recruit students (N = 61) from two neighboring high schools (Schools A and B) of similar demographics and socioeconomic status. The treatment group (n = 28) was representative of students from school A, and the control group (n = 33) consisted of students from school B. All students recorded improvised solos to a researcher-created backing track of the chord progression to ‘Canon in D’ at the beginning of the study and again one month later, at the end of the study. In addition to the performance component, all students completed self-efficacy questionnaires at the beginning and end of the study. Modified data collection instruments from Watson’s (2010) study on jazz improvisation for performance evaluation and self-efficacy were used in this research. (Reliability measures of these instruments here)

For students at school A, the instructional treatment consisted of three phases: Establishing aural familiarity with ‘Canon in D’ including learning the researcher-created chord progression; in-class ‘call and response’ activities; and small group performances. The treatment concluded with an in-class jam session where students practiced their improvised solos as the group performed the chord progression to ‘Canon in D’. The aural treatment lasted for nine class periods, and in-class call and response activities took four class periods. The students listened to a recording of ‘Canon in D’ by the Pachelbel Chamber Orchestra. Students at school B did not participate in any improvisational instructional treatment throughout the course of the study. During the instructional treatment phase, students learned basic skills for independent improvisation through teacher modeling, peer modeling, peer feedback, and self-feedback during the small group performances. The researcher modeled and gave basic instruction on how to improvise a solo with two notes, three notes, four notes, and five notes. Students were informed of the basic principles of improvised solo construction through this process and worked toward improvising solos of their own creation.
An experienced jazz musician scored all student performances as part of this preliminary analysis. MANOVA analysis was performed on all students’ scores in this study. An overall significant difference was found within pretest scores of the treatment group (M = 133.21, SD = 48.88), pretest scores of the control group (M = 132.71, SD = 65.78), posttest scores of the treatment group (M = 202.48, SD = 46.35), and posttest scores of the control group (M = 149.61, SD = 58.22). These results indicate that students from school A significantly outperformed students from school B on the performance posttest. The Pillai’s Trace criterion was used for the overall omnibus test because of unequal ‘n’ and violation of homogeneity of covariance F(2, 58) = 17.14, p < .001, partial η2 = .37, with a moderate effect of 37% of the variation accounted for by the instructional treatment.

Multivariate discriminate analysis (MDA) confirmed the internal classification of the independent variable, ‘group’. Significant results were found in Wilks’ Lambda test of functions λ = .63, χ2 = 26.94, p < .001. Predicted treatment group membership was 87.9% and predicted control group membership was 78.6%. A significant difference in posttest self-efficacy was found through an additional MANOVA test. Posttest efficacy for treatment students (M = 84, SD = 29) was significantly higher than posttest efficacy for control students (M = 65, SD = 30) F(1,52) = 2.84, p = .07, partial η2 = .10, power = .53. This study provides string orchestra teachers with instructional strategies for teaching and including improvisation into established classical music repertoire. Further research is needed for the refinement of the instructional strategies that were devised in this intervention.

Walter, Donald. Northwest Guilford Middle School, Greensboro, NC. Walter, Jennifer S. University of North Carolina at Greensboro. From Research To Practice: How Deliberate Practice Theory Is Supported By Neurobiological Science. PPI

Brain researchers continue to find that brains change in interesting and measurable ways when people engage in deliberate practice – that is when they actively work to refine a desired performance skill. Along with changes in the organization of synapses, where neurons connect with other neurons, researchers have found that the amount and organization of myelin, the tissue that wraps around the long part of a neuron, is affected by deliberate practice. The presence and structure of myelin is important because the result of well-myelinated neurons is ease when performing an action – what music teachers consider a well-developed skill.

This session will examine how a desired musical activity, deliberate practice, affects students’ neurological systems through the biological process of myelination. Teachers may be able to use this integrated exploration of deliberate practice and the process of myelination to improve music teaching and learning outcomes by structuring student practice to take advantage of research results. Additionally, teachers may make explicit interdisciplinary connections for music students between the results of neurobiological research and musical practice behaviors.

To understand the process of myelination in greater detail, some basic terms are defined here: they are deliberate practice and myelination. Deliberate practice (Ericsson, et.al, 1993) has four components: 1) A well-defined task; 2) at an appropriate level of difficulty; 3) that is accompanied by informative feedback; and 4) also accompanied by opportunities to apply corrections and complete repetitions. Myelin is a white, fatty tissue that accumulates around the long tail (axon) of a neuron. Myelination is the process by which particular cells in the brain and body, called glial cells, wrap myelin around axons. For many years, researchers viewed myelin as mere neural insulation and did not give much attention to the location and accumulated amount of myelin. Now they understand that myelin plays a crucial role in
how well neural circuitry functions. They also understand that myelination is both a maturational process and a process influenced by learning. Consider a group of beginning viola students learning how to play a C# on the G-string. The teacher has decided that this skill is a well-defined task, that it is of appropriate difficulty, and that he or she can provide appropriate feedback. Now, the teacher sets up a drill so that the students can practice this skill repeatedly, applying corrections as needed. As the students complete the drill, they are sending messages from their brains to their muscles to perform the specific action. This message travels from the neuron, down the axon, to their muscles, and results in movement. When the axon is used to deliver messages, the body recognizes it as a pathway that needs to be optimized and begins the process of myelination. After practicing the C# drill, the students will be able to expend less energy to send the signals to their hands to form the correct shape to play C#. They will not have to think as hard as they did before practice to form the correct hand shape. The challenge for beginning musicians is not that they are unable to perform the motions necessary to play their instruments, but that they have too many motions in their repertoire. The application of deliberate practice helps them to refine separate motions into a chain of events that work as one unit, a circuit, to complete a task with consistent outcomes. As they practice, the students complete many repetitions of the desired actions. These repetitions cause the body to fire neural circuits many times. As the circuits fire repeatedly, glial cells apply insulation, as a sheath of myelin, around the axon, the long, message-transmitting part of a neuron, to improve the speed and ease of transmission of the bioelectric neural impulse. This increased speed and ease manifests as automaticity, the ability to complete a complex motion with very little effort. Teachers and students must take care to determine and practice only the desired actions, because the process of myelination does not discriminate between “good” and “bad” actions. The body will optimize whatever is done repeatedly. Increasing myelin around an axon is one underlying component of the process of deliberate practice. The result is smoother, more efficient performances.

Watson, Kevin. Western University, London, Ontario, Canada. A Descriptive Analysis of Jazz Improvisation Studio Instruction Practices

Music education research into teacher effectiveness (e.g., MacLeod, & Napoles, 2011; Madsen, 2003) has often focused on systematically observing teacher behaviors (e.g., pacing, eye contact, content of verbalizations) in order to identify components of effective music teaching. However, Duke (1999/2000) has pointed out that this body of research is characterized by an underrepresentation of student achievement as a dependent measure. As an alternative method for examining the effectiveness of instruction, Duke (1994, 1999/2000) has proposed using rehearsal frames as units of analysis. Rehearsal frames methodology has been used to examine student-teacher interactions in piano lessons (Siebenaler, 1997), the Suzuki method of string teaching (Colpritt, 2000), and the rehearsal techniques of expert wind conductors in college band rehearsals (Worthy, 2006).

While a number of jazz researchers have investigated the relative effectiveness of various instructional methodologies for jazz improvisation (e.g., Burnsed, 1978; Bash, 1983; Laughlin, 2001, Watson 2010), very little empirical research has examined the instructional practices of expert studio teachers engaged in one-to-one jazz improvisation instruction. Analysis of expert jazz improvisation instruction using rehearsal frames methodology may yield information regarding relationships between aspects of student achievement and the procedures teachers use to effect change.
The purpose of this in-progress study is to investigate the process of applied instruction in jazz improvisation as practiced by expert teachers and to describe instructional conditions associated with student improvement in jazz improvisation ability. The specific research questions are as follows:

1. What teaching strategies do expert jazz improvisation instructors use to bring about positive change in the performances of student improvisers?

2. What types of instructional targets do expert teachers of jazz improvisation identify?

3. Do the instructional targets identified by expert teachers of jazz improvisation exhibit any particular pattern of categorization?

4. Within the studio lesson environment, what is the relative emphasis placed on elements such as instrumental technique, harmonic accuracy, rhythmic and melodic idea development, and interpretation of musical style.

5. Which teacher/student behaviors lead to more successful accomplishment of proximal performance goals?

6. How frequently are student perspectives incorporated into the following activities: diagnostics, interpretation of musical style, composition of musical content, formative assessment of improvisation ability.

A sample of fifteen studio teachers of jazz improvisation has been recruited to participate in the present study. Teachers were recruited from a population of full-time applied studio instructors at a college or university offering a degree major (undergraduate or graduate) in jazz studies in the United States and Canada. A list of these instructors was compiled, and potential participants were randomly selected from this list for recruitment purposes. Three students from each of the 15 teachers’ studios are being recruited to participate in the study. Student demographic information such as degree program, year of study, and years of experience with jazz improvisation performance is being collected through the use of a survey instrument. Two consecutive private studio lessons for each student are being videotaped. Teachers are asked to turn on the video camera at the outset of the student’s lesson, and then carry out their usual lesson procedures. Students are instructed to follow their teacher’s directives in the same manner that they would in any studio lesson. The researcher is not present in the room during the lessons.

Upon completion of data collection, the videorecordings will be reviewed to identify lesson segments that depict teacher and student working on specific jazz improvisation skills. Each of these lesson excerpts will be segmented into rehearsal frames and categorized according to teacher-selected performance goals. Teacher and student activities within each rehearsal frame will be noted, creating a chronology of performance goals and outlines of events that occurred during work on these goals. Frequencies and durations of teacher and student behaviors will be recorded using the software Scribe (Duke & Stammen, 2006). Student performances at the conclusion of each rehearsal frame will be rated along a continuum from very successful to very unsuccessful in relation to the preceding teacher directive and the general quality of playing. Two independent reliability observers will analyze five randomly selected excerpts from each studio teacher and evaluate performance trials as successful or unsuccessful, according to the goal defined by the teacher, in order to calculate interobserver reliability results. The overall mean performance rating for each lesson will then used in correlational analyses with other variables (e.g., time spent in a particular activity) in order to investigate possible relationships among teacher activities and student achievement in jazz improvisation.
Webb, Richard. University of Massachusetts–Amherst. **Construction of Musical Understandings: An Exploration of Peer Tutoring in the School Orchestra Program**

The purpose of this study was to explore the choices, thought processes, and evidence of knowledge construction of high school orchestra members in their role as peer tutors to younger string players. Four high school-aged peer tutors served as participants, teaching students from within their school districts’ orchestra program. I observed and video-recorded three 30-minute private lessons taught by each of the tutors, and this lesson data were supplemented by initial and post-lesson interviews. The final interviews included video of selected lesson excerpts to stimulate recollection and discussion on the part of the tutor. The peer tutors also answered questions in the form of short journal reflections following each lesson. These data sets were transcribed, coded, and analyzed for themes related to peer teaching and learning. The framework on which this study was based included modern theories of knowledge construction and the historical practice of peer tutoring.

Following an analysis of the qualitative data, several themes emerged. These themes included reorganization and communication of musical concepts, pedagogical choices and prior experiences, the enjoyment and value of tutoring, tutor perception of roles, and a tutor’s “pedagogical comfort zone.” Connections to findings in the research literature were made, both in the individual cases and the subsequent cross-case analysis. Related to the conceptual framework of the study, teaching younger peers might contribute to an increased motivational interest for learning on the part of the tutor. Shared learning experiences such as peer tutoring may also foster an increased sense of ownership, both of the music program in which the tutor participates and of a tutors’ own learning processes.

One of the aims of the study was to provide a window into peer teaching and learning in the music performance ensemble, to inform both practice and future research efforts. Implications for music education included suggestions for preparation and guidance of the peer tutor, addressing observations made during the course of the study. An extension of the current study from the perspective of the student on the receiving end of the instruction, a more longitudinal study of a peer tutoring program, and research comparing the effects of peer teaching and learning with more traditional, teacher-directed instruction were suggested.

Whitaker, Jennifer, University of North Carolina, Charlotte. **Professional Orchestral Conductors’ Use of Selected Teaching Behaviors in Rehearsal**

This study examined professional orchestral conductors’ use of rehearsal time in sequential pattern components, discussing musical targets, and using verbal imagery and modeling techniques. Commercially available videos of 15 professional conductors rehearsing prominent orchestras were scripted, coded and timed for selected teaching behaviors. Sequential pattern categories included conductor task presentation (academic musical task, direction, questioning, social, and off-task); ensemble response (performance, verbal, and non-verbal); and conductor reinforcement (specific approval, non-specific approval, specific disapproval, and non-specific disapproval). Emergent categories for task presentation targets included tone quality, intonation, rhythm, balance and blend, technique, interpretation, articulation and bowing, conducting, theoretical, and non-musical/off-task. Use of analogies (statements containing comparisons), and imagery (statements containing highly descriptive language) were identified and timed. Modeling behaviors were classified as either occurring alone or with gestures. All behaviors were timed to the nearest full second. Because the rehearsal time analyzed
varied across conductors, the total number of seconds spent in each component was summed and converted to percentages for comparison.

An independent observer coded 20% of the scripts for sequential pattern components and task presentation targets. Percentage agreement was calculated using the formula: agreements/(agreements + disagreements) x 100. Reliability for sequential pattern components equaled 88% and that for task presentation targets equaled 84%. Time spent in task presentation types revealed a general focus on presenting musical information. Of the time spent in task presentations (M = 28.80, SD = 9.70), these conductors spent an average of 17.47% (SD = 9.75) of rehearsal time presenting musical tasks. The second greatest amount of time was spent giving directions (M = 9.00, SD = 4.55). In comparison to academic and directional tasks, very little time was spent questioning orchestra members (M = 0.60, SD = 0.63), giving social task presentations (M = 0.40, SD = 0.63), and making off-task remarks (M = 1.07, SD = 1.28).

As a group, these conductors spent the largest percentage of rehearsal time allowing for musician response (M = 66.53, SD = 11.17), most of which was performance (M = 65.07, SD = 10.50). Musicians spent little to no time responding verbally (M = 1.00, SD = 1.56) or non-verbally (M = 0.20, SD = 0.56). One sequential pattern component the conductors did not stress was reinforcement. As a group, very little time was spent providing reinforcement (M = 4.60, SD = 2.87). Almost all the conductors’ time spent in reinforcement was specific (M = 3.00, SD = 2.56) in nature rather than non-specific (M = 1.40, SD = 1.18). All but two conductors used some sort of verbal imagery during rehearsal (M = 3.03, SD = 4.67). However, of the 13 who used verbal imagery, nine spent 2% or less time using the technique. Unlike the verbal imagery category, all 15 conductors verbally modeled during instruction (M = 3.35, SD = 2.41).

Examination of musical target focus revealed a significant amount of time spent on interpretational aspects of the music. Among conductors, 61.87% (SD = 14.54) of rehearsal time was spent focused on interpretational aspects including dynamics, style, phrasing, tempo, texture, vibrato, and general musicality. Of those, dynamics and style comprised the majority of time within the interpretation category (44% and 36%, respectively). The next greatest amount of time among conductors was spent focused on rhythm (M = 11.13, SD = 8.55) and articulation/bowing (M = 9.93, SD = 7.27). In contrast, very little time was spent focused on tone (M = 1.87, SD = 2.77), technique (M = 1.67, SD = 2.35), and theoretical aspects of the music (M = 1.47, SD = 2.26).

Although it is likely that none of these conductors studied music education in the same manner as licensed teachers, results revealed several similarities between the rehearsal behaviors of these conductors and findings of studies examining behaviors of experienced and expert teachers at other levels. Results revealed that professional conductors spent a large amount of rehearsal time allowing the ensemble to perform, presenting musical information, and focusing on interpretational aspects of the music (especially dynamics and style). All the conductors used verbal modeling to some extent, and most used verbal imagery at some point in rehearsal. Pre-service and practicing music educators may find these results to be beneficial when reflecting on and refining their own teaching skills. Conductors of ensembles at all levels may benefit from using modeling techniques regularly; ensuring verbal content during rehearsals contains specific musical tasks, including taking time to present tasks related to dynamics and style; and providing ensembles frequent and lengthy opportunities to perform.
Waymire, Mark and Parker, Webb. University of Southern Mississippi, Hattiesburg. **Behavioral Analysis of Directors of High Performing versus Low Performing High School Choirs, Part One**

Based on concepts of grounded theory, part one of a three-part study was designed to inform research question development and hypotheses that would best inform an investigation of relationships between student performance levels and teacher behaviors in the high school choral setting. Ten high school choir directors were classified into one of two categories, directors of high-performing choirs or directors of low-performing choirs, based on concert festival ratings over a five year period, as well as on recommendations from area university music faculty. Directors from the two categories were matched in terms of years of experience, educational background, and current teaching environment in an effort to delimit possible causal relationships between these factors and student performance outcomes. Each director was observed and videotaped over a two-day period in the fall semester. Field notes were taken during each rehearsal and interviews were conducted with participants. Teaching materials, including repertoire, were identified. Coding of all classroom events allowed for recurring concepts to emerge that delineated categories of teacher and student behaviors similar to those previously investigated by Yarbrough (1981, 1989, 1999), Goolsby (1996, 1997, 1998), Cavitt (1998), Arthur (2002), Worthy (2003, 2006), and Waymire (2011). Skill development/warm up versus repertoire rehearsal time, and transition periods (macro categories of rehearsal organization) were revealed to act as the overarching units of rehearsal. Within these macro categories, each section of rehearsals presented teacher behaviors that fell into periods of preparation, information, instruction, feedback, and inactivity. Student behavior categories included performance, listening, questioning, and transitional activities. Rehearsal target categories were revealed as tone, intonation, diction, dynamics, technique, balance-blend, rhythm, tempo, unidentified, and other. Incidences of teacher modeling (positive and negative), teacher feedback (positive and negative), and performance approximations were recorded.

Teacher behavioral categories of metaphor and analogy use emerged with both directors of high performing and low performing choirs. Additionally, use of piano, teacher proximity, conducting versus no conducting, and student use of music versus memorization were revealed as recurring and at times, predictable behaviors. Data analysis of macro categories of rehearsal periods reveals that rehearsals among directors in both groups (high versus low performing) were similar in all observable categories. Data analysis of macro categories of rehearsal periods between both groups of directors shows rehearsals to be significantly different (p = .05).