THE EFFECTS OF REHEARSAL SEQUENCE ON THE EXPRESSIVITY OF CHILDREN'S CHORAL PERFORMANCE

by

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(Under the Direction of Rebecca Atkins)

ABSTRACT

Musical expression is the art of playing or singing music with a personal response (Scruton, 1982). Practically speaking, performing with musical expression means making appropriate use of dynamics, phrasing, timbre, and articulations to help make the music come to life (Scruton, 1982). Experiment 1 of this study addressed the following questions: Does the sequence in which a choir learns the elements of a song (i.e. rhythm, pitch, text, expression) influence the musical expression (articulation, dynamics) in their performance? And does a choir's expressive performance improve with multiple rehearsals? Experiment 1 participants included 27 choir students (age in years M = 11.43, SD = 1.20) who were members of a community children's choir program. Participants learned the song *Now All the Woods Are Waking* by Max Exner using one of two pre-recorded song-learning sequences (infused-expression sequence or post-expression sequence). Participants in the infused-expression sequence group learned expressive elements alongside rhythm, pitch, and text. Participants in the post-expression sequence group learned the rhythm, pitch, and text first, followed by expressive elements. Each participant recorded a performance of the song immediately after the initial learning sequence and again one week later after an at home practice session. Results showed no statistical significance between the expressivity of either sequence

group. However, both sequence groups improved their expressivity with multiple learning sessions. Experiment 2 of this study addressed the previous research questions as well as: Does feedback during a song-learning sequence influence the musical expression (articulation, dynamics) of a choral performance? Experiment 2 participants included 28 choir students (age in years M = 9.85, SD = 0.72) from an upper middle-class elementary school choir program. For experiment 2, I added feedback statements to both the infused-expression and post-expression sequences. Besides the addition of feedback statements methodology remained the same as in experiment 1. Results indicated the infused-expression group was significantly more expressive than the post-expression group both initially and after a week's time. Feedback statements seemed to help participants in the infused expression group perform more expressively. Implications for the use and benefits of infused-expression sequencing as well as future research are discussed.

INDEX WORDS: Children's Choir, Song-Learning Sequence, Expressive Singing, Feedback

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B.S., Shorter College, 2000

M.Ed., Berry College, 2003

A Dissertation Submitted to the Graduate Faculty of The University of Georgia in Partial Fulfillment of the Requirements for the Degree

DOCTOR OF EDUCATION

ATHENS, GEORGIA

2019

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May 2019

DEDICATION

To my wife, *Katie,* for her endless support.

In loving memory of *R.D. Reynolds*, my grandfather, for always believing in me.

ACKNOWLEDGEMENTS

I would like to express my sincere gratitude to my supervising professor Dr. Rebecca Atkins. Thank you for challenging me, motivating me and giving me copious amounts of feedback. I appreciate your time and expertise. Thank you to the members of my committee, Dr. Brian Wesolowski and Dr. Alison Farley. I greatly appreciate your assistance, advice, and comments. Thank you to Dr. Martha Shaw for seeing a spark in me so long ago and calling it forth. This degree would never have happened without you.

Thank you to my Spivey Hall Children's Choir and Ford Elementary School family. There are too many of you to name here, but I appreciate all your help and support during this doctoral season. I thank you for your words of encouragement and patience during this process.

Thank you to my family: Doug, Rhonda, Brian, Kelley, Todd, Julie, William, Jeff, Allison, Taylor, Kinley, Kyle, and Carisa. Thank you, Aunt Mary, for your editing eye. I appreciate your attention to detail. This dissertation would have not been possible without my wonderful wife, Katie, and my children, Daniel, Rosie, and Jonah. Thank you for your sacrifice and for supporting my dreams.

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CHAPTER 1: INTRODUCTION

Words alone do not express the full range of human expression. For example, speaking the word “hello” with different inflections can give the word different meaning. Using a kind, warm tone, the word hello can be a hospitable greeting towards a neighbor. However, the word hello spoken with a harsh, sarcastic tone conveys a rude, inhospitable message. Vocal intonation can often carry more weight when communicating than the words themselves. People use expression to convey feelings and emotions that enrich the meaning of the text. Similarly, in vocal music, expressive elements such as dynamics and articulation, aid choirs in communicating to the audience.

Using expressive elements is important in creating aesthetic musical experiences for the performer and listener. Research has suggested that the expressive elements of a performance help create a more memorable experience (Mira & Schwanenflugel, 2013; Tillmann et al., 2013; Woody, 2000). Expression helps the brain create a memory. An audience member may not remember every word or tune after a performance but will often remember how he or she felt during the performance. The emotional content of a song can be so powerful that it can even elicit a physical response from the listener such as an elevated heart rate (Lundqvist, Carlsson, Hilmersson, & Juslin, 2009). Audience members can become physically affected in response to music. College music majors ranked expression during performance more important than theoretical knowledge or musical skill (Lindström, Juslin, Bresin, & Williamon, 2003). These findings suggest expressivity is crucial in music performance.

Musical expression is the art of playing or singing music with a personal response (Scruton, 1982). Unlike rhythm or pitch, expression is open to performer interpretation. Two choirs

could theoretically both sing the same song with effective musical expression but in different ways. Often composers or editors include expression markings to aid performers in their expressive interpretation. Practically speaking, performing with musical expression means making appropriate use of dynamics, phrasing, timbre, and articulations to help make the music come to life (Scruton, 1982). Expressivity creates auditory variations in a melody. Changes in articulation, dynamics, and tempo influence the expressivity of a piece of music (Juslin & Laukka, 2003). Singers' faces and body cues can also help increase the expressivity of a performance (Leck & Jordan, 2009).

A song generally consists of four auditory elements: rhythm, pitch, text, and expressivity (Yarbrough, 2002). When teaching songs to a choir, directors typically focus on one song element at a time. Over time, teachers have developed strategies to help singers read, understand and perform rhythm, pitch and text. Counting on rhythm syllables or numbers has helped students acquire and understand the rhythm of a song. The use of solfége has helped improve singers' ability to read a melody and understand pitch relationships (Choksy, Abramson, Gillespie, Woods, & York, 2001). The International Phonetic Alphabet (IPA) has helped singers pronounce text in a uniform manner (Decker, 1999). There is not a widely accepted teaching method for teaching musical expression.

Choir directors have used many pedagogical strategies to increase musical expression in choral performance. Aural modeling, concrete instruction, and imagery seem to be common strategies used in the classroom. In aural modeling, instructors use their voice or an instrument to demonstrate exactly how they desire the phrase or section to sound. Students then imitate the model as best as possible. During concrete instruction, a teacher might say to their choir "sing the first phrase piano and the second phrase forte." Students interpret these verbal directions into a musical

idea and then perform. Teachers using an imagery strategy may ask their students to sing the phrase "like they were pounding on a table" or "as if their feet were dancing across water." Students use these images to create a musical idea and apply it to their performance.

Woody (2006a) compared the effectiveness of various teaching strategies on the expressivity of college pianists' performances. College pianists performed a melody with no instructions and then experienced one of three teaching strategies: (a) aural modeling, (b) concrete instruction, and (c) imagery and metaphor. Participants then practiced and recorded the melody. The cycle repeated two more times, so that each pianist experienced all three treatments. Results revealed all three teaching strategies were successful. However, each strategy showed strengths and weaknesses.

Skadsem (1997) explored whether verbal instructions, written instructions, conducting gesture, or surrounding singers influenced the singer's dynamic level. While singing, participants heard a choir in their headphones, held printed music and watched a prerecorded video of a conductor. Singers experienced nine variations of instructions about dynamics before singing the song. According to the results, verbal instructions elicited the most response in dynamics.

Studies have also investigated how variables effect the auditory characteristics or expressiveness of a performance. For example, Van Zijl, Toiviainen, Lartillot, and Luck (2014) investigated how a performer's focus (technique, expressivity, or emotion) would affect the auditory characteristics of their performance. Violinists played a melody under each condition (focus on technique, focus on expressivity or focus on emotion). Then, a computer program analyzed recordings of all performances for differences in auditory characteristics such as tempo, articulation, dynamics, etc. Van Zijl and colleagues found performers' focus altered the auditory characteristics of their performance.

Most musical expressivity research has used college aged participants (Ebie, 2004; Lindström, et al., 2003; Van Zijl & Luck, 2013; Van Zijl, & Sloboda, 2011; Van Zijl et al., 2014; Skadsem, 1997; Woody, 2000; Woody, 2006a; Woody, 2006b;). Some research studied expression in younger students (Broomhead, 2001; Broomhead, 2006; Broomhead, Skidmore, Eggett, & Mills, 2012; Woody, 1999), but not as many as older participants. It is not clear whether expressive strategies that are effective with older musicians are also effective with younger musicians.

Similarly, most expressivity research focused on instrumentalists (Gabrielsson & Juslin, 1996; Meissner, 2017; Van Zijl & Luck, 2013; Van Zijl, & Sloboda, 2011; Van Zijl et al., 2014; Woody, 1999; Woody, 2006a; Woody, 2006b) rather than vocalists (Broomhead, 2001; Broomhead, 2006; Broomhead et al., 2012; Ebie, 2004; Skadsem, 1997). It is also unclear whether similar strategies work for both instrumentalists and vocalists.

Additionally, most studies that explore musical expression used previously learned song material. For example, Broomhead et al. (2012) used the song *Happy Birthday* to analyze expressivity. In Skadsem's (1997) study, the participants' regular choir director taught them the musical excerpt by rote prior to the study. In Woody's (2006a) study, the pianists rehearsed the music until they felt ready to perform. Only after they had rehearsed the song did the researcher introduce variables. These studies do not account for the manner in which the participants learned the song. They are examples of learning the notes and rhythms before adding expression. Research has not explored variations in the song-learning sequence itself. Additionally, choral methodology textbooks (Collins 1993; Goetze, Broeker & Boshkoff, 2011; Leck & Jordan, 2009; Phillips, 2004; Robinson & Winold, 1976) disagree about the timing of when to introduce expressive elements.

All music requires a sense of pulse and rhythm. Thus, rhythm is usually the starting point when teaching a song (Jaques-Dalcroze, 1967). After rhythm, educators have different views on

what song element should come next (pitch, text or expression). Choral method textbooks most often recommend teachers introduce expressive elements after rhythm, pitch, and text are learned (Collins 1993; Goetze et al., 2011; Robinson & Winold, 1976). Phillips (2004) recommended adding expressivity after rhythm and pitches are learned, but before introducing the text. Jaques-Dalcroze (1967) believed students should learn rhythm, pitch, and expressive elements concurrently. Like Jaques-Dalcroze, Robert Shaw would pair each element of a song (rhythm, pitch, text, and expressivity) in various combinations during a rehearsal to create a precise and expressive performance. Jaques-Dalcroze and Shaw treated all four elements of a song as equal contributors to the overall performance (Yarbrough, 2002).

Purpose of the Study

Varieties of successful strategies exist to help choirs sing more expressively. However, research has not explored when to implement these strategies in the song-learning sequence. The purpose of this study is to explore the effects of introducing expressive elements (i.e. dynamics, articulation, etc.) early or late in the song-learning sequence. Experiment 1 of this study will address the following questions:

1. Does the sequence in which a choir learns the elements of a song (i.e. rhythm, pitch, text, expression) influence the musical expression (articulation, dynamics) in their performance?

2. Does a choir's expressive performance improve with multiple rehearsals?

Experiment 2 will address the questions above as well as:

3. Does feedback during a song-learning sequence influence the musical expression (articulation, dynamics) of a choral performance?

CHAPTER 2: REVIEW OF LITERATURE

Humans have used various cues to convey emotions to others. Researchers have long discussed the communication of emotions, starting as early as the first publishing of Darwin's *The Expression of the Emotions in Man and Animals* in 1872 (Darwin & Prodger, 1998). Cues used by humans and animals can be divided into two categories: visual cues and auditory cues. Visual cues include facial and body expressions while auditory cues include pitch, tempo, and volume variations in vocal speech. Human speech patterns have also influenced music. Music has based many of its auditory emotion cues on human speech (Juslin & Laukka, 2003). Auditory, facial, and body cues all play a role when expressing emotions to an audience but are most powerful when all three work together cohesively to communicate one message (Van den Stock, Righart, & De Gelder, 2007).

Cues of Emotion

Aural cues.

Auditory cues is typically the primary method musicians use to convey emotions and mood to an audience. Music is primarily an auditory art and therefore depends on sound to communicate. Some studies use the terms expression or expressive to refer to the auditory variations in a performance (Gabrielsson & Juslin, 1996; Van Zijl, et al., 2014; Woody, 1999). In these studies, researchers measure auditory variations such as loudness, intensity, phrasing, and tempo to calculate expression. Certain auditory variations such as loudness can help communicate a specific emotion. Listeners of all ages have been successful at identifying the emotional content or mood of a piece of music based on its auditory characteristics alone (Hevner, 1936; Sundberg, Friberg,

& Frydén, 1991; Stachó, et al., 2013). Human speech patterns have inspired many of music's auditory cues (Juslin & Laukka, 2003).

There are several similarities between expression in speaking (variance in pitch, speed, articulation, etc.) and singing expression. Juslin and Laukka (2003) performed a meta-analysis between 104 vocal expressions in speech studies and 41 studies of expression in music performance and found several trends. First, both vocal expression and music performance used similar emotional cues when expressing emotions (see Table 2.1) especially when communicating broad emotions (i.e. anger, fear, happiness, sadness, and tenderness). Second, the expressive components between vocal expression (i.e. tempo, pitch, and dynamics) and music performance expression were significantly similar. For example, human speech patterns and composed music sound similar when conveying the emotion of anger. Both speech and music tend to use a fast speech rate or tempo, high intensity, high energy, and both contain multiple accents when conveying anger. These results support the idea that music, especially vocal music, has its roots in learned speech patterns. Third, despite language barriers, participants could decode emotions within vocal expression. In other words, performances sung in a foreign language, where the audience is unaware of the meaning of the text, still expressed its emotional intent. Juslin and Laukka (2003) also found that humans learn how to decode the emotional content of vocal expression and music performance at a very young age, possibly infancy.

Table 2.1

Summary of Cross-Modal Patterns of Acoustic Cues for Emotions

Emotion	Acoustic cues (vocal expression/music performance)
Anger	Fast speech rate/tempo, high voice intensity/sound level, much voice intensity/sound level variability, much high-frequency energy, high F0/pitch level, much F0/pitch variability, rising F0/pitch contour, fast voice onsets/tone attacks, and microstructural irregularity
Fear	Fast speech rate/tempo, low voice intensity/sound level (except in panic fear), much voice intensity/sound level variability, little high-frequency energy, high F0/pitch level, little F0 pitch variability, rising F0/pitch contour, and a lot of microstructural irregularity
Happiness	Fast speech rate/tempo, medium-high voice intensity/sound level, medium high-frequency energy, high F0/pitch level, much F0/pitch variability, rising F0/pitch contour, fast voice onsets/tone attacks, and very little microstructural regularity
Sadness	Slow speech rate/tempo, low voice intensity/sound level, little voice intensity/sound level variability, little high-frequency energy, low F0/pitch level, little F0/pitch variability, falling F0/pitch contour, slow voice onsets/tone attacks, and microstructural irregularity
Tenderness	Slow speech rate/tempo, low voice intensity/sound level, little voice intensity/sound level variability, little high-frequency energy, low F0/pitch level, little F0/pitch variability, falling F0/pitch contours, slow voice onsets/tone attacks, and microstructural regularity

Note. F0 = fundamental frequency, from "Communication of Emotions in Vocal Expression and Music Performance: Different Channels, Same Code?" by Juslin, P.N., & Laukka, P. (2003) *Psychological Bulletin, 129*, p. 802.

Musical elements such as rhythm, melody direction, and mode (i.e. Dorian, Aeolian) can play a role on how an audience perceives the mood of a song. In Hevner's study (1936), musically untrained participants (N = 450) chose adjectives from a list to describe the mood of a piece of instrumental music. Then, participants listened to the same piece of music with one element changed (dynamics, rhythm, mode, etc.) and rated the mood of the piece again. Hevner was curious if participants would agree on the mood of a song and if changing only one element (i.e. mode) of the piece of music would change the perceived mood of that piece of music. Untrained musicians

were able to agree upon the mood of a piece with a high amount of accuracy. Each song's tonal mode seemed to have the highest correlation with change of mood. Major modes expressed happy, merry, graceful, and playful moods while minor modes portrayed sad, dreamy, and sentimental moods. Hevner also examined rhythm, harmonies, and melodic direction, but did not find them to have as large of an influence on the mood of music as mode.

Building on Hevner's work, Stachó, et al., (2013) explored children's (ages 3-7) ability to identify the emotional content of 15 musical excerpts. Children (n = 94) as well as two adult control groups: musicians (n = 118) and non-musicians (n = 83) chose pictorial faces to identify emotions (happy, sad, angry, fearful, and neutral) within music. Children were able to identify happy and sad emotions with relative consistency; however, they struggled with angry, fearful, and neutral emotions. Surprisingly, adult musicians were more consistent in identifying fearful and neutral emotions than their non-musician adult counterparts. This finding suggest children and non-musician adults easily perceive basic emotions in music. However, people with more musical experience are better at decoding subtler emotions.

Gabrielsson and Juslin (1996) explored how the intent of the performer affected the expressive qualities of their performance. Nine professional musicians (age range = 25 - 45, all male) performed a melody on their primary instrument (i.e. guitar, flute, voice, etc.) while conveying a specific emotion to the listener. Ninety-three listeners (both musicians and non-musicians; age range = 21 - 69) were successful at accurately identifying the emotional intent of each interpretation of the melody. A researcher created computer program analyzed recordings for auditory variations. Data showed similarities in expressive elements (i.e. tempo, attack, vibrato, etc.) for the same emotion despite different instruments and performers performing the melody. This finding suggests a common expressive vocabulary exists among musicians that audiences can

successfully interpret. Listeners were able to identify broad emotions (i.e. happy, sad) more easily than obscure emotions such as solemnity. Listeners were even able to categorize non-expressive performances correctly.

Sundberg et al. (1991) compared musicians' and non-musicians' ability to hear expressive deviations in instrumental musical excerpts. Additionally, the researchers sought to discover professional musicians' preferences for the degree of musicality (note stress, leap articulation, phrasing, harmonic dependent crescendos and decrescendos, etc.). Participants consisted of 10 advanced college music students and 12 non-music majors who had enrolled in a voice class. Participants listened to seven series of examples each containing nine pairs of recordings. Each series focused on a different expressive element (i.e. note stress). Each of the nine pairs had one example with zero expressive variation (i.e. no change in note stress) and one example with varying degrees of that expressive element (i.e. different amounts of note stress). Participants were asked to identify the more musical pair or if there was a difference at all. Musicians were better able to identify subtle differences between the pairs than non-musicians were. This finding suggests that performers should exaggerate expressive elements when performing for non-musicians. It also suggests that people might develop more refined sensitivity to expressive elements through musical training. In part two of the experiment, five professional musicians rated their preferences for the amount of variation for various musical elements. Results showed that musicians agreed in their ratings on an ideal performance quality (which were generally close to the threshold quantity), suggesting there is a consensus among musicians on performance qualities of expressive performance.

Visual cues.

Visual cues enhance communication (Bassili, 1979). Interacting face to face with a person gives you more information than talking on the phone with them. Like aural cues, visual cues can convey meaning beyond words. A smile is traditionally interpreted as happiness. Slouched shoulders can be interpreted as boredom or sadness. These visual cues seem to be recognizable across cultures and language barriers. The universal recognition of several visual cues of emotions has been documented (Ekman, Friesen, & Ellsworth, 1972; Izard, 1971).

Facial expression is a visual cue that communicates emotions non-verbally. Bassili (1979) studied whether static facial expressions or ones in motion were better at communicating basic emotions. Twenty undergraduate students (10 male and 10 female) viewed and identified six basic emotions (happiness, sadness, fear, surprise, anger, and disgust) of six actors in still photographs and movies. The six actors were filmed separately, but Basillii found they expressed each emotion in a similar fashion and used specific parts of the face to express a specific emotion. For example, happiness was consistently portrayed through an upward displacement of the mouth or a smile and surprised was easily recognized because of the upward motion of the eyebrow with a simultaneous strong downward jaw displacement. Results revealed that participants had higher recognition rates for moving displays than static displays.

Like actors, dancers seem to have a body movement vocabulary for expressing specific emotions. Sawada, Suda, and Ishii (2003) used kinematic technology to analyze the arm movement of 10 female dancers under different emotional conditions. The researchers asked dancers to express various emotions (joy, sadness, and anger). During the movement, cameras captured the speed, force, and directness of their motions. Dancers were recorded separately, yet analysis showed that individual dancers expressed the same emotion (i.e. anger) in a similar physical

manner. For example, when conveying anger, participants arm movements would increase in force and speed. When asked to convey sadness, dancers arm movements would slow in force and speed. The researchers then asked 22 observers to identify the emotion expressed in each motion. Observers were able to accurately identify anger, joy, and sadness in the dancer's movements.

Using coding schemata for the analysis of body movements and postures, Wallbott (1998) analyzed 224 theatrical performances where actors or actresses were asked to portray a specific emotion (i.e. elated joy, happiness, sadness, despair, fear, terror, cold anger, hot anger, disgust, contempt, shame, guilt, pride, and boredom). Like Sawada et al. (2003), Wallbott (2013) found that emotion-specific movements existed, but mainly for large emotional categories such as anger, happiness, and sadness. Wallbott (2013) also found that there were less emotion-specific movements for subtle emotions such as disgust or pride.

Visual cues of a musical performance may also have an influence on the audience interpretation and opinion of the performance. According to a study by Juchniewicz (2008), a performer's body gestures influenced how audiences interpreted the perceived expressive qualities of a performance. Evaluators, of different ages and musical expertise, rated the performance of a pianist that moved more expressively as having a more expressive performance even when the recordings of both pianists were identical. Similarly, in a study conducted by Morrison, Price, Geiger, and Cornacchio (2009) 120 raters evaluated four video recorded performances of expressive and non-expressive conductors (set to the same audio) of a Percy Grainger piece. Results revealed a significant difference in the ratings of the performance by the expressive conductor compared to the non-expressive conductor even though the audio was identical.

In choral performances, choirs use more than one mode to express emotions to their audience. Audiences receive both visual and auditory cues in conjunction to interpret emotional

information. Van den Stock et al. (2007) found that participants (N = 17, M age = 21.3 years) were better able to recognize emotional cues when the body, facial, and auditory expressions matched. This result suggest that choirs need to take advantage of body movement, facial expression, and auditory expression to communicate most effectively the emotional intent of a piece. A choir's auditory cues (dynamics, articulations) and visual cues (facial and body expressions) need to match and support one another to have the biggest impact on an audience (Van den Stock et al., 2007). If a choir sings expressively but has deadpan facial expressions and zero body movement, the performers send the audience mixed messages. All aspects of expression are important in sending a clear message to the audience.

Expressive performance is not the same as feeling emotions. Van Zijl and Sloboda, (2011) explored the relationship between expressive performance and the performer's emotions. Eight music students (M age in years = 20.9, SD = 1.13) completed an introductory interview, kept an *Individual Playing Diary* and participated in a post-study interview based on their diary entries. Players made a delineation between emotional playing and expressive performance. Participants described emotional playing as "just feeling and enjoying the music" (Van Zijl & Slobada, 2011, p. 213). They described expressive performance as "the conveyance of the previously constructed interpretation towards an audience" (Van Zijl & Slobada, 2011, p. 214). The players reported thinking the emotions during the performance rather than feeling the emotions themselves. One participant stated, "You don't necessarily have to feel these emotions when you are playing. You have to identify with them, mentally, in order to communicate something" (Van Zijl & Slobada, 2011, p. 212). The participant later went on to explain that at some point during the rehearsal process he felt the emotions, but during the performance he drew upon previous emotional experience.

Expressive Performance Pedagogy

Research has proposed that students can learn and perform expressive skills (Marchand, 1975). However, researchers and teachers still question the best methodology to teach these important skills and concepts. Masters of music education such as Kodaly, Orff, Suzuki, and Jaques-Dalcroze influence current educational practice. However, few masters wrote specifically about teaching musical expression. Jaques-Dalcroze, on the other hand, had a specific plan for introducing expressive elements to students (Jaques-Dalcroze, 1967).

Codifying musical expression.

The Kodály method has a strong emphasis on music literacy and uses high quality literature (Kodály, Bónis, Halápy, & Macnicol, 1974). The Kodály methodology introduces new rhythms and pitches through three distinct phases: prepare, present, and practice. A new rhythm or pitch is prepared aurally, visually, and kinesthetically through imitation and performance. The Kodály philosophy encourages aural learning prior to visual note learning which lends itself to expressive singing. Kodály also stated that a good musician has "a well-trained ear, well-trained intelligence, well-trained heart and a well-trained hand" (Kodály et al., 1974, pg. 197). One could infer a "well-trained-heart" could refer to performing with expression, but the word expression is not specifically mentioned.

The Orff-Schulwerk approach to music education is a "pedagogy that organizes the elements of music through speaking, singing, playing, and moving" (Carder, 1990, pg. 145). Orff-Schulwerk encourages creativity and improvisation. Instead of songs being learned and perfected for a concert performance, Orff-Schulwerk songs are meant to be created and experienced. The focus is on the learning process. The Orff-Schulwerk approach emphasizes experience prior to

conceptualization. These ideas lend themselves to musically expressive experiences. However, this approach does not specifically say when or how to introduce expressive elements during a song-learning sequence.

The Suzuki method emphasizes technique before notation. Suzuki believed talent education should begin at an early age. Actual instrumental playing starts at age three, but prior to age three parents should expose their children to recordings of great pieces (Kendall, 1973). The approach emphasizes rote learning, which makes quality recordings crucial. Initially, students memorize all compositions and teachers introduce note reading later. Students are required to focus on what the music sounds like versus what it looks like. This emphasis seems to lend itself to integrating expressive concepts early in the learning process. However, Suzuki does not implicitly say when and how to teach expressive elements.

Unlike Kodály, Orff-Schulwerk, and Suzuki, Jaques-Dacroze has very definite ideas about when and how to teach expressive elements to young students. In 1892, Emile Jaques-Dalcroze was the professor of harmony and solfége at the Conservatory of Music in Geneva. He found many of his students were technically proficient, but lacked expression in their performances (Choksy, et al., 2001). Throughout Jaques-Dalcorze's tenure at the university he was inspired by a fellow professor, M. Mathis Lussy. Lussy had attempted to codify musical expression into a series of "expression rules" (Jaques-Dalcroze, 1967). Jaques-Dalcroze infused these rules into his rhythm and pitch acquisition sequences. He also added expression markings to all sight-reading exercises. Jaques-Dalcroze introduced expression markings in a sequential manner (like rhythms or pitch) to increase understanding (Choksy, et al, 2001). Jaques-Dalcroze's methodology of introducing expressive elements alongside rhythm and pitch elements serves as a model for teaching students about expressivity in music (Jaques-Dalcroze, 1967).

Rules of expression are like accent rules a student might learn when learning a foreign language. Foreign language accent rules are typically unspoken if you are a native speaker, but a great aid when acquiring a foreign language. For example, native English speakers innately understand that the first syllable of the word "language" is stressed. Non-native speakers might need an accent rule such as: the first syllable in a two-syllable word is generally stressed. Some musicians, through innate talent or experience, can easily make a melody expressive. While others may need "rules" to follow to help train their ears until musical expression becomes a more inherent natural part of their music vocabulary. Both Lussy and Jaques-Dalcroze admitted these rules of expression had many exceptions but were more often correct than not. They did not intend the rules to be law, but rather to help students and educators to train their ears. Expression rules help teachers identify what is correct or missing from musical performances (Jaques-Dalcroze, 1967). Jaques-Dalcroze believed expression brought life to the rhythm and pitches of a composition. "Once he has learnt the primary rules of shading [also called phrasing], he will never want to sing a tune without being allowed to embellish it with its natural complements – rhythmic and emotional expression and accentuation" (Jaques-Dalcroze, 1967, pg. 35).

Below are some examples of Lussy's (1892) rules for expression used by Jaques-Dalcroze: Accentuation Rule 1: the performer should accent the first note of each measure (see Figure 2.1).

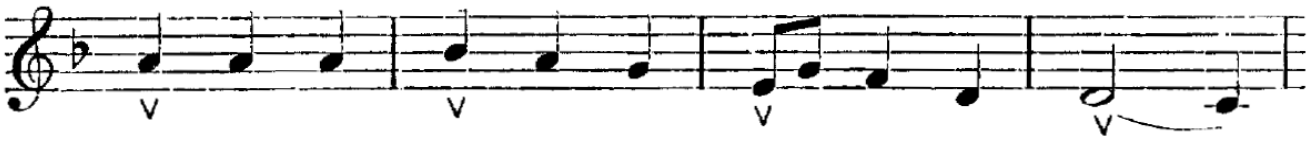

Figure 2.1. "Accentuation Rule 1" (from Lussy, 1892, pg. 29).

Accentuation Rule 12: Any note preceded by a rest is accented (see Figure 2.2).

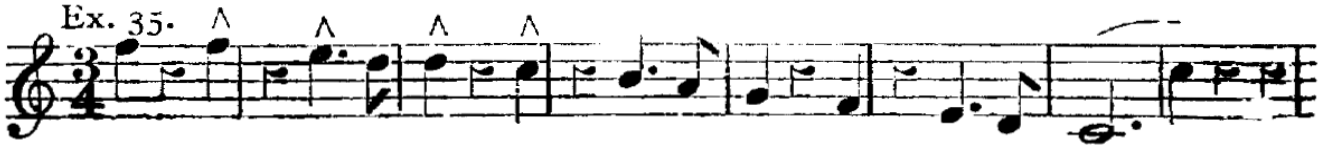

Figure 2.2. "Accentuation Rule 12" (from Lussy, 1892, pg. 33).

Rallentando Rule 1: A long note preceding the final note should be performed with a rallentando (see Figure 2.3).

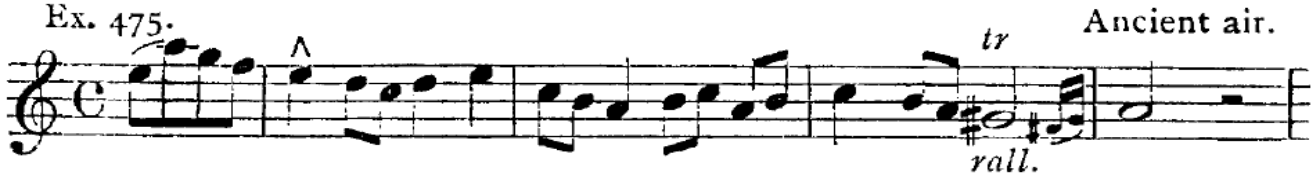

Figure 2.3. "Rallentando Rule 1" (from Lussy, 1892, pg. 188).

Nuance Rule 1: Ascending passages should be performed with a crescendo (see Figure 2.4).

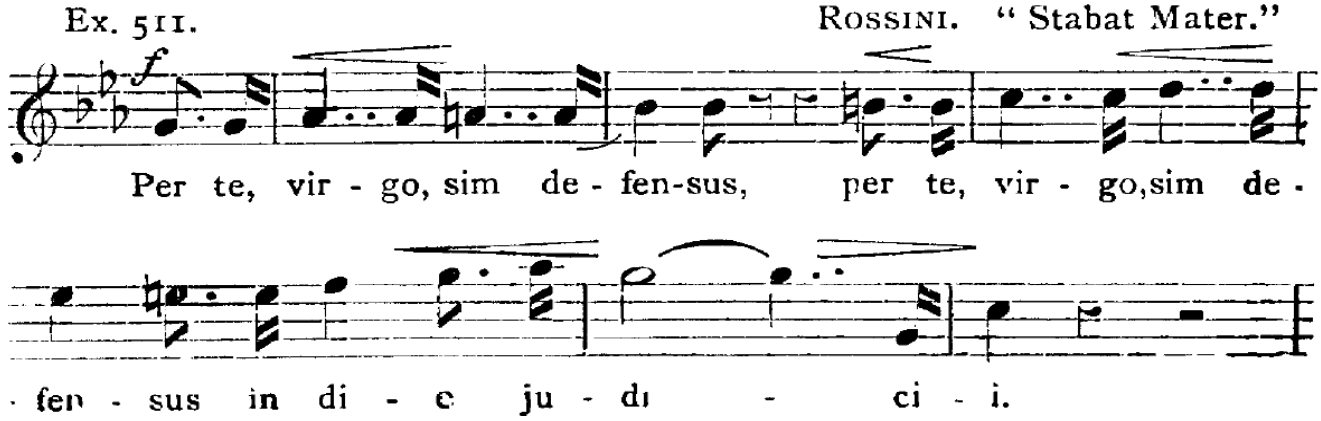

Figure 2.4. "Nuance Rule 1" (from Lussy, 1892, pg. 198).

Many of Lussy's expression rules also inspired Caldwell (1995) in his text *Expressive Singing: Dalcroze Eurhythmics for Voice.* However, Caldwell updated them with the vocalist in mind. For example, Phrase Rule 1: At the beginning of a song, a singer should take a breath on the beat immediately preceding the first note of the melody in rhythm with the song (see Figure 2.5, Figure 2.6).

Figure 2.5. "Phrase Rule 1: when to breathe" (from Caldwell, 1995, pg. 75).

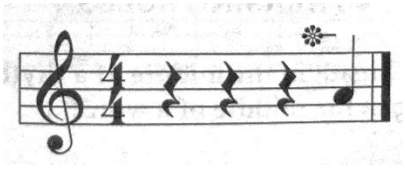

Figure 2.6. "Phrase Rule 1: when not to breathe" (from Caldwell, 1995, pg. 75).

Phrasing Rule 2: Either a breath or a silent break in the sound should separate sub-phrases. The performer should take this breath or lift from the last note in the first phrase so that the second phrase will begin on time.

Like Jaques-Dalcorze, Lussy, and Caldwell, Bowers (2012) recommended creating expressive habits by following simple expressive rules that apply to many songs. Bowers (2012) created rules of expression for young choirs. Bowers refers to these rules as "Rules for Transfer", suggesting that singers should learn these basic rules and then apply them to a myriad of choral pieces. The six main "Rules for Transfer" include: (a) the rule of the steady beat. Crescendo through any note value longer than the steady beat. (b) The rule of consonant releases. A final consonant release should occur on the last full beat, or half beat of the note. (c) The rule of

diphthongs. Sing the first sound throughout most of the value of the note and then quickly add the second sound. (d) The rule of punctuation. Lift or break for every punctuation mark throughout the piece. Do not break if there is no punctuation mark. (e) The rule of the slur (and other articulations). The performer should sing only the first note under the slur with a tenuto marking. (f) The rule of word stress. The performer should add a slight emphasis on important words or syllables as you would naturally in expressive speech. Rules of expression help musicians be more aware of the expressive possibilities within a melody. They are not law, but rather patterns that occur often in music (Caldwell, 1995).

Philosophy of expressive instruction.

Research has helped develop several core ideas about expressive instruction. For example, students can improve their musical expressiveness skills with instruction (Ebie, 2004; Marchand, 1975). The longer a student participates in musical ensembles and private music lessons the more likely they are to be expressive when performing (Broomhead, 2001). Students tend to enjoy learning expressive skills and feel they are essential to a quality performance (Lindström et al., 2003). Research has also investigated if how the performer thinks, feels, and acts effects the expressive qualities of their performance.

Broomhead et al. (2012) explored the effects of a positive mindset and pre-performance trigger words on musical expressive performance. Students (N = 155) were members in one of four junior high school choirs. The researcher randomly placed participants in the control or experimental group. For a pre-test, students performed a known song (*Happy Birthday*) by themselves expressively. The experimental group underwent a 40-minute treatment about positive mindset triggers. They also learned the mantra “bold, confident, and free” and participated in three

graduated expressive activities. The control group received no treatment. All students were then given a posttest (sing *Happy Birthday* as musically as possible). Raters evaluated samples using the Expressive Performance Achievement Measure (EPAM; Broomhead, 2001). Results indicated the treatment had a positive effect on the expressiveness of junior high age singers. Since treatment focused on the psychological aspects of performance, results may be interpreted as treatment did not necessarily teach them how to be more expressive, but rather the treatment allowed participants to better emote the expressive skills they already possessed. Participants returned two weeks later and sang again to see if treatment had a latent effect. The treatment did not hold its effect after two weeks. The experimental group's EPAM scores dropped back down and were more similar to the control group.

Van Zijl, et al. (2014) investigated how performers focus (whether on technique, expressivity or emotion) would affect how the music sounds. Eight violinists (four professionals and four accomplished amateurs, all female, *M* age in years = 24.3, *SD* = 1.8), played a melody under three different conditions. During condition one, participants focused on the technical aspects of the piece, during condition two, participants focused on creating an expressive performance and during condition three, participants focused on the emotion behind the piece. Performers answered interview question after the completion of each task. A computer program analyzed recordings of all performances for differences in tempo, articulation, dynamics, timbre, and vibrato. Analysis suggested there was a statistical difference in all five categories between each condition. For example, there was the least dynamic range and vibrato during the technical performance. In addition, zero of the eight performers rated the technical performance their best. The expressive performance tended to have the most dramatic auditory elements (biggest range of dynamics, strongest tone, hardest attacks and fastest vibrato) of the three conditions. Performers

also reported imagining themselves in front of an audience and attempting to portray the emotion to someone else possibly resulting in a more extroverted performance. The emotional performance generally had the least amount of variance in auditory characteristics. The emotional performances tended to have a slower tempo, less rapid note attacks, and a gentler timbre compared to the other two conditions. Interview answers revealed that performers focused on their inward thoughts and emotions rather than the audience during the emotional performance. Interestingly, six of the eight participants rated their emotional performance as their best, but expressed concerns about the quality of their playing because of their emotional state.

How a performer rates a performance does not always align with how an audience rates that same performance. In a related study, Van Zijl and Luck (2013) asked 30 violinists (females = 18, males = 12; *M* age in years = 28.07, *SD* = 5.64) to play a melody under three different conditions. Participants performed while focusing on technique, expression or emotion. Thirty raters observed audio-only, visual-only, and combined audio-visual recordings of the performances. Raters scored each performance on overall impression, skill of the performer and emotional content. Overall, listeners liked the expressive performances the best when compared to the technical and emotional performances. However, listeners perceived the emotional performances as being the most effective at conveying sadness. Results suggest audience's perception of musical performances varies from what performers might think of their own performances.

Teaching expressive performance.

Leaders in music education have various suggestions on teaching expressive elements to choirs. Choosing the most effective teaching strategy for specific content can be tricky. A strategy

that might be great at teaching dynamics, might fall flat when used to teach phrasing. Various choral technique textbooks offer insight on what strategies are best for specific musical ideas like dynamics, legato singing, articulations, and communication of text. Studies have explored several effective strategies for teaching expressive elements. Most techniques researchers have investigated fall into one of four categories: modeling, direct instruction, imagery, or kinesthetic reinforcement. Modeling is providing an aural example of the desired sound. Direct instruction is when the teacher explains and asks for a desired effect. Imagery is when teachers help students use their imagination to connect and reinforce expressive ideas. Kinesthetic reinforcement is using body movements to support and emphasize musical elements.

To evoke a specific sound from their choirs, directors often use modeling. For example, if a choir is singing the syllable "re" with a spread, horizontal vowel a teacher might say "no, sing it like this" and model the desired vowel sound. The choir would listen and try to imitate the teacher's sound. Modeling can also be an effective tool for teaching expression. A director can sing a phrase with the desired expression and ask students to imitate what they hear. Since singing is an aural art, modeling effectively uses aural skills to improve singing. On the other hand, modeling can sometimes produce "parrots" where students are good imitators, but struggle to think independently (Woody, 2006a).

Concrete instruction is a direct way to get results. A teacher might say, "Please sing phrase three piano and phrase four forte." The choir would listen to instruction and attempt to follow directions. Concrete instruction uses clear and decisive directions to communicate the desired results with the choir. However, there are aspects of music that are difficult to describe through words.

Imagery strategies include imaginary pictures such as, walking into a small chapel with stained glass windows and sing with awe. Imagery uses known experiences to help communicate the director's vision of a piece of music. If singers are not familiar with a particular image, or if they do not know how to interpret that image into a musical idea, imagery is not as effective of a teaching strategy. Color imagery is when different sections of a piece are labeled with different colors. For example, a director can label a dark heavy section maroon and a light and bright section yellow (Leck & Jordan, 2009). Directors uses images and colors to help communicate their desired result for different aspects of the music.

Kinesthetic reinforcements can also aid the singer in achieving a musical goal (Leck & Jordan, 2009). Kinesthetic reinforcement strategies included imitative gesture (i.e. hand-signs to represent vowel shaping) and kinesthetic teaching (i.e. using monkey fists to help singers sing with strength). Teachers can also ask choir members to use a conducting gesture (i.e. cueing a legato or staccato sound through a conducting motion) and movement (i.e. asking students to embody the character of the piece with their facial and body expressions). Kinesthetic reinforcement helps the singers create a new sound. However, sometimes modeling a particular movement on its own does not always elicit the desired results

Most often directors will use a combination of strategies to communicate with their choir. For example, if the director wants a phrase sung light and bouncy they might give several instructions. "Please sing this phrase with a light and bouncy tone (concrete instruction) like this" (models phrase with a light and bouncy tone [modeling]). "When singing this phrase imagine you are a cricket bouncing over a field (imagery) and use your hand to show bounciness (kinesthetic reinforcement)." After experiencing four methods of communicating, the choir would then attempt

to sing the phrase with a light and bouncy tone. Most likely, directors would not use all four strategies at once, but might combine two or three depending on the needs of the choir.

Woody (2006a) compared the effectiveness of (a) aural modeling, (b) concrete instruction, and (c) imagery and metaphors on the expressivity of college pianists' performances. Participants included 36 college pianists (women = 24, men = 12; age range = 19 – 52 years; *M* age in years = 24.1), half of which self-identified as advanced pianists and half as competent pianists. Pianists performed a melody for a baseline recording then experienced one of three treatments: (a) aural modeling, (b) concrete instruction, or (c) imagery and metaphor. Participants then practiced the melody and recorded a final performance. The cycle repeated two more times, so that each pianist experienced all three treatments. Results revealed that all three teaching strategies were successful. However, each strategy showed strengths and weaknesses. Modeling helped pianists reproduce the original recording but did not inspire participants to create their own interpretation. Participants simply copied the model. Concrete instruction took more rehearsal time and seemed less efficient but produced greater auditory changes than modeling. Imagery and metaphor instruction allowed the performer to create something original, but the interpretation may have been different from what the instructor desired. Each strategy (a) aural modeling, (b) concrete instruction, and (c) imagery and metaphor appeared to have merit. All three strategies used in the appropriate context could be successful.

In a companion study, Woody (2006b) explored the imagery and metaphors strategy further. The researcher examined the thought processes of student musicians as they interpreted imagery and metaphor-based instructions into musical performance. Participants included 84 graduate and undergraduate music students (women = 48, men = 36; age range = 18 - 44 years; *M* age in years = 21.3). Students wrote down their thought processes as they prepared three different

melodies using imagery-based instructions. Based on participant comments, both graduate and undergraduate students tended to first focus on technical aspects of performance and then focus on expressive elements. Using imagery examples was more effective when the students could personally relate to the image. Students with the most and least private lesson instruction time often used emotional imagery, while students in the mid-level range of lesson experience often translated the imagery into musical terms. This differing strategy might be explained by the fact that less experienced musicians do not know how to interpret imagery into musical ideas. Mid-level players are learning and practicing this skill, while experienced musicians already habitually translate emotions into musical terms before performance.

In a related study, Woody (1999) evaluated if identifying expressive elements in an aural model prior to one's own performance helped create a more musical re-enactment. Twenty-four university musicians with advanced piano skills listened to a simple eight-measure piano excerpt while viewing the notation. Some model performances included idiomatic (or expected) expression choices. Some models included non-idiomatic choices. Pianists verbally identified expressive elements in the model and then attempted to perform the excerpt in a similar manner. The researcher systematically recorded and evaluated all performances. Results suggest pianists who were better able to identify expressive characteristics were more likely to imitate them in performance. Non-idiomatic or unexpected music choices were easier to identify than expected ones. Results imply having students verbally identify expressive characteristics of a model before imitation will likely create a more musical performance than listening alone.

Skadsem (1997) explored whether verbal instructions, written instructions, conducting gesture, or surrounding singers influenced the singer's dynamic level. Participants included 96 college and 44 high-school chorus members. Participants learned *Michael Row the Boat Ashore*

by rote prior to the start of the study. While singing, participants heard a choir in their headphones, held printed music, and watched a prerecorded video of a conductor. Singers experienced nine variations of instructions before singing the song; one with no instructions, four related to singing forte and four related to singing piano. Verbal instructions were phrases like "sing the second phrase loudly," written instructions included piano or forte markings on the printed music, conducting gesture was given through the prerecorded video of a conductor, and influence of surrounding singers was achieved by altering the singers' volume in the participants' headphones. The researcher randomized the order of instructions to the participants. According to the results, verbal instructions elicited the most different dynamic response. Participants also responded better to instructions about piano singing than forte singing.

Ebie (2004) investigated if treatments (verbal instructions, modeling, kinesthetic or audio-visual) would affect middle school students' ability to convey basic emotions. Participants (males = 26, females = 30, seventh and eighth grade chorus members) were students who successfully performed the tested melody *a cappella* with correct intervals. Once a week for four weeks, participants experienced a different treatment situation. After the treatment, they performed and recorded the same melody for each of the four desired emotions (happiness, sadness, anger, fear). Verbal instructions included direct guidelines and metaphors on how to make the voice express a certain emotion. Modeling had participants listen to recordings of singers perform with the desired emotion. Recordings were not of the tested melody so that participants had to transfer knowledge during their own performance. The kinesthetic treatment had participants express a specific emotion (i.e. sadness) in a physical way (acting, drawing, dance, etc.). During the audio-visual treatment, participants watched a PowerPoint presentation with 20 pictures that expressed the desired emotion accompanied by instrumental music with the same desired emotional mood. Using

a Likert-type scale, raters assessed the singers 16 recordings. Results indicated all four instructional models seemed to be effective in eliciting the desired emotion from the singer.

Teaching expressive elements.

Expressive elements, including dynamics and articulation changes, help bring out the emotion and meaning of the text in choral music. Dynamics refer to how loud or how quiet the musician performs the music. Collins (1993) suggested when teaching dynamics directors need to: (a) make singers aware of dynamic options in singing, (b) teach students how to achieve those volume levels, and (c) choose the best dynamic levels for the piece and for the choir. Collins (1993) recommended limiting beginning singers to three dynamic levels (piano, mezzo forte, and forte) while their vocal instrument develops for their vocal health. Collins (1993) also recommended practicing vocalises at various dynamic levels outside the context of a song to learn the skill of singing at different volume levels. Once mastered, students can then apply this skill to their repertoire. For choirs that regularly sing in harmony, Phillips (2004) suggested students sing a tonic chord and practice keeping the chord balanced while singing at various dynamic levels. Once singers have an idea of what various dynamic levels feel and sound like in their ensemble, they can then apply them to performance pieces. Phillips (2004) also suggested having students mark and even color-code the dynamic levels in their score. Red is often an indicator for louder dynamics and blue is often used for quieter dynamics.

Legato style singing connects each note in a smooth manner. Directors generally prefer an arced phrase in legato style singing. An arced phrase starts quiet, builds in volume and intensity to an apex, and then relaxes. For example, when singing the first phrase of "Twinkle, twinkle little star*"* the choir would start piano, build to the syllable "lit" in little, and then relax in volume and

intensity for the rest of the phrase. To create an arced phrase, Goetze Broeker & Boshkoff, 2011 recommended first identifying the apex of the phrase and second asking the choir to crescendo towards the apex and decrescendo away from the apex. To further help the choir, especially with phrases with long rhythms, the director might ask the singers to sing the phrase while articulating the rhythmic subdivisions (i.e. 1 e & ah, 2 e & ah) of each note and gradually crescendo or decrescendo each rhythmic subdivision depending on the apex. Phillips (2004) suggested using kinesthetic reinforcement by asking students to use a continuous rolling motion with one hand to help reinforce the idea that the phrase is always traveling somewhere. Phillips also recommends using vocalises to perfect the vocal technique required to create an arced phrase (see Figure 2.7).

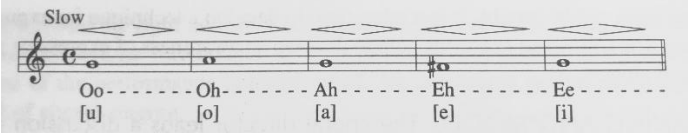

Figure 2.7. Vocalise: Mesa di voce. (from Phillips, 2004, pg. 252).

In vocal music, text often drives expressive choices. To be expressive, singers should not just understand the text, but internalize and personalize the text. This personalization may help the singers' faces and bodies perform more expressively (Collins, 1993). Phillips (2004) suggested having one individual or group read the text aloud. Then the ensemble can discuss the meaning, context, and best ways to communicate that text with the audience. Leck and Jordan (2009) suggest creating a setting and character who would sing the text of the piece. A story helps students connect personally to a text. Personal connection helps singers create their own interpretation of a song rather than parroting one already created (Leck & Jordan, 2009).

Singing with appropriate syllabic stress can help the audience understand the text of a song. Expressive syllabic stress also makes a choir seem more sincere when singing the text. When you speak the word "water", the stress is placed on the first syllable. If a choir were to sing the word "water" and place the same amount of stress on both syllables or make the second syllable louder, the audience might struggle to understand the word. Teaching correct syllabic stress can be approached through imagery, visual aids, and kinesthetic reinforcement (Goetze et al., 2011). Teachers can visually reinforce syllabic stress by writing the text on the board and making the font size of the stressed syllable larger. This strategy helps students visualize which syllable gets the stress. Using imagery, such as the gas pedal of a car, directors can ask students to gently press the pedal (kinesthetic reinforcement) on the stressed syllable of a phrase.

Memorizing the text greatly aids in facial and bodily expressions. When choir members have to look down at their music, their facial expressions can get lost. By memorizing the music, choir members have one less thing to worry about. They can focus on the conductor and their facial expressions. In addition, when choir members memorize text they are more apt to internalize it (Collins, 1993).

Visual cues such as facial expression and body posture help communicate with an audience. Leck and Jordan (2009) believe giving an animated performance is a learned skill. They list two rules for choral movement: "(a) you must move then you sing and (b) no one has the right to upstage the choir by moving too little or too much" (Leck & Jordan, 2009, pg. 104). Directors should include movement experiences to help choristers connect with the character and demeanor of each piece. For example, students should watch a video of themselves performing to aid in self-evaluation. Alternatively, students who are more expressive can model the desired facial and body expressions for others. Phillips (2004) recommended practicing various facial postures and body

postures to convey various emotions and then applying them to a specific song or section of a song. Directors should remind singers to keep the face and body involved until it is a habit.

Goetze et al. (2011) encourage teachers to help students become more independent with expressive choices. Student input can be key when making expressive choices. Allowing students to make musical decisions prepares them to be autonomous in their future music making. The level of input may vary based on the experience and expertise of the students. Directors can tailor input to fit any level singer through leading questions. A simple way to start receiving input from singers is to incorporate student-led expressive choices during warm-ups. This strategy allows the students to experiment with making creative choices when the stakes are low.

Feedback.

In addition to appropriate instruction teachers give students feedback to clarify expectations and improve performance. Stamer (1999) surveyed 472 high school choral singers about motivational factors during a choral rehearsal. Based on survey results, effective variables of motivation included providing a nurturing environment, feedback, interesting repertoire, and achievable challenges. According to Stamer (1999), feedback should be specific to the musical task. It should help diagnose the problem, but also provide a solution on how to improve. Directors should give feedback to both the group as a whole as well as to individuals. This result suggest students thrive on getting feedback from their directors. It seems to motivate them and guide them in their learning.

Price (1983) explored whether feedback would have an effect on the performance of a 48-member non-auditioned college band. The students experienced three different teaching treatments. Treatment A included teacher directions followed by student performance with no

feedback. Treatment B included an academic task presentation and teacher directions followed by student performance, with no feedback. Treatment C included an academic task presentation, teacher directions and appropriate feedback after student performance. Treatment C, which included feedback, resulted in the highest musical gains and highest student attitude ratings. This finding implies teachers should not only focus on appropriate instruction, but also on giving feedback to their ensembles. Feedback appeared to increase attentiveness and improve student performance.

Dunn (1997) investigated whether feedback during rehearsals had an effect on choral performance. Dunn studied two high school select choirs for this study. Sight-reading ability and pretest performance results indicated little difference between groups. Both choirs followed a similar teaching sequence with similar music. However, one choir received feedback and one choir did not. Students in the feedback group consistently had a more positive attitude toward the music, rehearsals, and conductor/teacher. The group receiving teacher feedback also received higher posttest performance scores from the judges than the group receiving no teacher feedback. These results support the idea that given equivalent amounts of teacher instruction and rehearsal performance time, the addition of teacher feedback helps produce better musical performances.

Kluger and Denisi (1996) performed an extensive meta-analysis of feedback intervention studies across academic domains. The meta-analysis showed feedback interventions accounted for an improvement in performance by approximately 0.40 of a standard deviation. However, there was also a large variability in feedback intervention effects. In fact, in over one third of the studies, feedback intervention reduced performance. Kluger and Denisi suggest if a teacher does not accompany a feedback intervention with a cue on how to improve, the feedback might be

detrimental to growth. In addition, feedback interventions can sometimes act as a crutch preventing the learner from discovering solutions on their own.

Current practice.

Music education pedagogues have investigated and recommended several strategies for teaching expressive music skills. Several studies have observed choral rehearsals to identify strategies used to teach musical expression. Broomhead (2006) investigated expressive teaching techniques used in secondary choral rehearsals. Each choir had a reputation for quality expressive performances. He observed and videotaped three high school choirs' rehearsals. The researcher also interviewed teachers about their teaching process in relation to expressive performance. During rehearsal, teachers used both verbal and non-verbal strategies to communicate with their students. All three teachers used techniques effectively, as measured by post-observation performances. Expressive teaching techniques appeared to be spontaneous and not follow a prescribed sequence. Instruction techniques fell into six categories: (a) student-initiated input, (b) teacher inquiry, (c) referential, (d) demonstration, (e) teacher feedback or detailing, and (f) conducting. The results suggested there was not a consistent sequence to teach the expressive qualities of a song. Rather, strategies varied to meet the needs of the individual piece. This lack of formal sequence structure suggests expressive singing is complex.

Meissner (2017) explored the instructional strategies of nine private lesson instructors. Instructors listed the following nine expressive teaching strategies as useful: (a) teacher's inquiry, (b) discussion, (c) explanation of expressive devices, (d) gestures and movements, (e) singing, (f) imagery, (g) modeling, (h) projected performance (imagining your performing for an audience), and (i) listening to one's own recordings. Results suggested expressive qualities would improve

within a lesson. However, improvements would not often carry over to the next lesson. Furthermore, teachers and pupils often disagreed on the best interpretation of a song. Teachers wanted their students to own the performance and create their own interpretation. Yet, teachers also wanted their students' expressive interpretation to match their own. There are several concerns with the design of the study. The study used a single adjudicator with a very basic assessment tool used to rate expressiveness on a scale from one to seven (1 = deadpan, 7 = very expressive). There was little variance between initial performance and the post-treatment performance scores. Due to the small population, results are hard to generalize to a larger population. However, the study does give insight into expressive teaching techniques that teachers are currently using in private lessons.

Student perspective and characteristics.

Student musicians have many opinions on best practices for learning expressive skills. Lindström et al. (2003) questioned conservatory music students (N = 135; males = 69, females = 66; M age in years = 25; age range = 18 - 43) from three European countries about: conceptualizing expressivity, expressivity in everyday practice, expressivity in music teaching, and novel approaches to teaching expressivity. Results indicated students rank expressivity higher, in terms of importance in practice and performance, than theoretical knowledge or skill. Furthermore, students define expressivity as "playing with feeling" or "expressing emotion," suggesting emotions play a part in expressive performance. Most of the participants wished their teachers would spend more time on expressive qualities during lessons and rehearsals. Additionally, students felt metaphors were more effective in teaching expressivity than felt emotions or modeling. Results revealed a positive correlation between age and percentage of lesson time spent

on expression, suggesting as technique improves the instructor spends more time on expressive qualities.

Woody (2000) explored 46 undergraduate music majors' (N = 46; males = 23, females = 23; M age in years = 20.5; age range 19 - 32) beliefs about how they learned, and continue to learn, about expressivity in music. According to the interview-questionnaire, 41% of the students became aware of expressive elements in middle school, and 48% in high school or college. Most participants could identify a specific teacher that brought the expressive elements of music to their attention. Private lessons tended to have had a bigger influence on awareness of expressiveness than ensemble classes. When asked about expressivity instruction, 61% of participants indicated verbal instruction was mainly used in their private lessons rather than modeling. Woody also found teacher instruction influenced how students practiced alone. Students with teachers who used modeling techniques spent more time rehearsing expressive elements on their own than students with teachers who primarily used metaphors or specific instruction. Data also indicated students frequently listened to other artists' performances of their pieces to learn expressiveness, but rarely recorded themselves for analysis. Vocal majors were much more likely to learn expressive qualities using emotions than instrumentalists, citing text as the basis for musicality in vocal music.

Broomhead (2001) explored correlations between singers' characteristics and individual expressive performance. Broomhead investigated characteristics such as vocal technique, musical background and ensemble membership. Participants included individuals (N = 82) from six advanced high school choirs. Thirty-six participants were members of a high-achieving choral ensemble. Forty-six participants were members of a low-achieving choral ensemble (from scores in a local choral adjudication). Raters evaluated participants' vocal technique using the Technical Performance Achievement Measure (TPAM; Broomhead, 2001). Raters evaluated vocal

expression using the Expressive Performance Achievement Measure (EPAM; Broomhead, 2001). Results indicated choir membership (high-achieving or low-achieving) showed no significant difference in EPAM scores. However, results identified four factors significantly related to expressive singing. These factors were (a) the age of first private lesson, (b) the number of years of private voice lessons, (c) outside school musical involvement, and (d) the number of semesters involved in high school choir. This study suggests years in choir and/or private music lessons had more of an effect on expressive singing abilities than membership in a high-achieving or low-achieving choir. Participants' EPAM showed a strong positive correlation to his/her TPAM score. This finding suggests expressive singing and stronger vocal technique are related. Broomhead suggested technique and expression are intertwined and might be hard to distinguish from one another in classical solo singing. Marchand (1975) also found students with more musical experience scored higher on post-treatment expressive testing. This conclusion supports Broomhead's finding that musical experience can be an indicator of expressive performance skills.

Choral method textbooks and research have offered a myriad of suggestions for teaching and improving expressiveness in the music classroom. Teachers often combine several strategies in their classroom to achieve expressive performance. However, these texts and research articles have varied or no recommendation on when to implement these expression strategies in the song-learning sequence.

Suggested Sequences for Introducing Songs to Choirs

Various authors recommended different sequences when introducing a song to a choir. Sequences can focus on rhythm and pitch (Robinson & Winold, 1976), developing part-singing (Collins 1993), music literacy skills (Goetze et al., 2011) or creating a comprehensive picture of

the song (Leck & Jordan, 2009; Phillips, 2004). Each author has a variant on when best to introduce expressive elements in the song-learning sequence. Some authors recommended teaching rhythms and pitches first and then expression. Other authors recommended introducing expression alongside rhythm and pitch.

Robinson and Winold (1976) outlined an eight-step process to introducing a new work to a choir. Step one, briefly discuss the background of the piece (i.e. composer, style, meaning, form). Step two, listen to a recording while the singers follow along in their music. Step three, listen again and have singers focus on the text. Step four, repeat the song once more and have singers hum their respective parts. Step five, have the singers sing their parts on a neutral syllable. Step six, once parts are secure have the choir add text. Step seven, rehearse parts in various combination such as soprano-alto, tenor-bass, soprano-bass, etc. Step eight, have the singers speak the text in rhythm to emphasize musical elements such as rhythm, diction, style, and dynamics. This sequence seems straightforward and does mention expressive elements until step eight, the final step in the process. The expressive elements are mentioned among many elements including diction and style. Robinson and Winold's sequence would fall into the notes then expression category.

When introducing a new song to a choir, Collins (1993) recommended starting with a few brief remarks. The remarks would help familiarize the choir with the composer, time-period, and style. Next, he suggested playing a quality recording of the piece to help prime singers to sight-read. If sight-reading the rhythms, pitches, and words proves too difficult, students can tackle the rhythms first. Once secure, singers should sing the pitches on a neutral syllable, then combine the rhythm and pitches with the text. A director may also choose to introduce the piece through rote methods. The author suggested *a cappella* singing over the use of a piano. Voices without instrumentation is better for both modeling and echoing. Singing without accompaniment helps

improve listening abilities. Directors may also use line notation (modified music notation) as a visual aid to act as a precursor to traditional notation. Visual reinforcements such as line notation help students memorize the melody more quickly.

As an example, Collins (1993; pg. 390), discussed the steps to teach a straightforward, four-part arrangement of *Silent Night.* First, Collins suggested having each voice part (soprano, alto, tenor, bass) sit far enough away from each other so they can hear their own part well. Starting with the most melodious part (i.e. soprano) all students (regardless of voice part) should echo sing the soprano line on solfége or a neutral syllable. Once learned, all students should echo the bass section. Once secure, the soprano and bass part should be combined by having all women sing the soprano part and all men sing the bass part. Upon success, all students should echo the alto part and add it to the soprano and bass lines. Finally, the students should echo the tenor part and add the tenor part to the four-part texture with all singers on their correct voice part. Having singers echo voice parts other than their own keeps them engaged. When not singing their own voice part students may leave out uncomfortable notes. The author does not mention expressive elements in the sequence. Collins' sequence appears to focus on getting multiple voice parts singing in harmony as quickly as possible, not on developing an expressive performance.

In the text *Educating Young Singers*, Goetze et al. (2011) outlined several plans for introducing new songs to choirs. The sequences focused on teaching students correct rhythms and pitches. They integrate music literacy concepts and improving auditory discrimination skills with note learning. Sequences consistently start with aural examples and then connect the examples to written notation. This process helps give meaning to the music notation. For example, the sequence (pg. 184) for *I Will Bring You Brooches* by Ruth Boshkoff is as follows: (a) Have students echo tap short rhythm patterns in 3/4 time ending with the rhythm of the first phrase. (b) Have students

echo two melodic phrases on “loo” and create a graphic representation (squiggly line) of the pitches of each melody with their finger. (c) Discuss characteristics of each phrase. Discuss how they are similar and/or different from one another. (d) Display the notation for both phrases and have students echo sing the melody. Once successful, the teacher should sing the phrase and the students should identify which notation belongs to which phrase. (e) Invite students to find the two learned phrases every time they appear in their score. Have students find the different texts that accompany these phrases each time they appear. (f) Listen to the song and sing the two known phrases whenever they occur. (g) After reading the text aloud, discuss the vocabulary and history of the poem and poet. The sequences presented by Goetze et al. (2011) are quite detailed. The sequences never mentioned performance qualities such as word stress, breath-marks, dynamics, articulation, phrasing etc. They instead focused on understanding the rhythms, pitches, and structure of the song.

Phillips (2004) in his text, *Directing the Choral Music Program*, laid out an eight-part sequence (pg. 342) to introduce a new piece of music to a choir. Phillips based this sequence on the concept of comprehensive musicianship (Hylton, 1995). First, the director gives enough background information for the students to gain a broad understanding of the piece. Information might include the title, composer/arranger, period and style of the composition. The director might also include the meaning of the text, mood, structure and form of the piece. Much of this information appears in the octavo itself. The director can guide students to find the answers by using leading questions. During the second step, the students experience an aural overview of the piece. The director can use a quality recording of another choir performing the piece or use the piano and their own voice. Third, the choir should sight read the piece at a level where they will be successful. For some choirs, reading the entire piece on solfége or a neutral syllable is

appropriate. However, the director can modify step three in many ways. Students can sight-read only a portion of the piece or they can start with rhythms only, adding pitch once successful. In the fourth step, the choir should mark the score with a pencil. Students should mark breaths, phrasings, articulations, dynamics, character terms, and tempos. These markings will help guide the singers to an accurate presentation of music and text. During the fifth step, the director should model and rehearse correct diction of the text. In step six, the words and music come together. During step seven, the director isolates and combines various voice parts to ensure accuracy. Phillips recommended advanced singers learn all parts to increase engagement and practice reading skills. With inexperienced singers, learning multiple parts can sometimes be confusing. Another strategy would be to find voice parts that are the same and have them rehearse together. The director should not rehearse any one voice part for too long in order to keep all students engaged. In step eight, the director puts together all parts and sections. Often transitions from one section to another will need attention. With each pass, singers should focus on a specific task. For example, the choir can focus on uniform vowels or dynamics. This specific focus helps keep the choir improving throughout the rehearsal process. This sequence gives the singer a comprehensive understanding of the octavo. It also helps them understand their individual part.

Phillips does mention expressive elements in step four. The author asks students to mark the expressive elements in their score. It can be assumed that expressive elements would then be rehearsed and performed during later steps. However, the author mentions rhythm, pitch, and text several more times in the sequence after step four, but not expressive elements. Phillips identifies the three elements of a song as rhythm, pitch, and text. He does not include expression as a song element.

In their book, *Creating Artistry Through Choral Excellence*, Leck and Jordan (2009) recommended introducing a new song through Jaques-Dalcroze eurythmic movement activities. While physically showing the inherent musical elements of a piece, singers can process the music into their minds and bodies. Movement can focus on the rhythmic, melodic or expressive qualities of a piece. For example, walking the beat while clapping the rhythm draws the singers' attention to the rhythmic relationships in the music. Creating rainbows with the arms to define phrases or showing pitch levels with the body draws attention to melodic elements. Singers can convey expressive elements through large movements for slowing and smaller movement for acceleration. Singers can also use light movements for quiet sounds and heavy movements for louder sounds. By drawing students' attention to musical elements early in the learning process, students create an aural picture of the piece before they ever sing a note.

Leck and Jordan (2009) discussed the SSA version of *Shine on Me* arranged by Rollo Dilworth to demonstrate Jaques-Dalcroze's eurythmic approach (pg. 155). The song contains three sections. Section 1 has a flowing, unison melody in 9/8 meter. While the teacher plays the melody and chords of section 1 on the piano students should conduct in three with a flowing pattern. While conducting, students should use tiny steps to walk the subdivisions (eighth note) of the beat. The director draws the students' attention to the phrase structure (6 measures, 6 measures, 12 measures). While listening to the melody again, the director asks students to change walking directions at the beginning of each phrase. Section 2 repeats the melody from section one and adds a contrasting, rhythmic countermelody in the alto part. The sopranos should repeat their same movements. The altos should change from a flowy pattern to a more declamatory pattern highlighting the contrast in mood between the melodies. Section 3 repeats section 2 but adds a descant with a similar character to the initial melody. During the third section, the students singing

soprano II and altos continue their same movement. The students singing soprano I should elevate their pattern representing the soaring descant. The piece ends with a coda that ritards and drives to the finish. All students should broaden and slow their movements during the coda to represent the musical change.

The Jaques-Dalcroze methodology relies heavily on improvisation. In an actual setting, many of the movement ideas would come from the students themselves. The lesson would have the same overarching goal as the lesson presented for *Shine on Me* (Leck & Jordan, 2009, pg. 155). However, the sequence and process would follow students' needs and input.

Having students physically show several musical elements helps them create an aural picture of the piece. They are then ready to view the score and begin working on the vocal parts. Since they have heard the melodies several times, they are ready to tackle the notes. This sequence focuses on creating a holistic view of the piece for the singer. The sequence highlights rhythmic, melodic, and expressive elements. The student experiences several musical elements before singing a note. This sequence seeks to give the singer a deeper understanding of the character of the piece. Ideally, these early movement experiences would transfer to the voice when performing the piece.

When deciding upon a sequence for students, teachers have many choices. Many teachers build on what the students learned during the previous lesson. Duke (2005) outlined a sequence starting from the very beginning each day. Though this idea may seem counter-intuitive, starting at the beginning of the sequence each day allows for correct practice of skills and a feeling of student success. "Your choice is whether to address the principles after the student has performed unsuccessfully by correcting his errors, or before he performs, thereby setting him up to perform successfully and obviating many errors" (Duke, 2005, pg. 97). For example, a teacher could review

concepts and skills necessary to singing with dynamics prior to expecting singers to perform with dynamics. This learning sequence requires insight and forethought from teachers. Teachers knowing what problems they need to address before they occur requires experience and skill.

To develop model rehearsal recommendations for choral directors, Yarbrough (2002) observed recorded rehearsals of the choral icon Robert Shaw preparing Brahms *Ein Duestches Requiem*. Yarbrough coded and timed 22 teaching segments (75 minutes) of Robert Shaw's rehearsals. Rehearsals took place with a select ensemble of 145 choral singers. Instead of reacting to errors, Shaw outlined musical tasks and sequenced rehearsals to ensure success. He rehearsed each choral element: rhythm, pitch, text, and expression alone or in combination with one other element. After success, he combined three or more choral elements together. He seemed to use the technique of successive approximation (Duke, 2005). In successive approximation, each task builds upon the previous task until the choir reaches the goal. For example, a choral sequence based on Shaw's techniques might look something like this: (a) count-sing the rhythms on one pitch (rhythm alone). (b) Count-sing the rhythms on one pitch adding expressive elements such as dynamics and phrasing (rhythm and expression combined). (c) Sing the rhythms and correct pitches on solfége (rhythm and pitch combined). (d) Sing the rhythm and pitches on solfége adding expressive elements (rhythm, pitch, and expression combined). (e) Sing the text on one pitch using the correct rhythms (rhythm and text combined). (f) Sing the text on one pitch using correct rhythms adding expressive elements (rhythm, text, and expression combined). (g) Sing the text on the correct pitches with correct rhythms and expressive elements (all four choral elements combined). Shaw treats expressive elements as an integral part of the choral performance. He does not view expressiveness as something singers' layer on top of the sound once the rhythm and pitches are learned. He infuses expressive elements into the song-learning sequence.

Watkins and Scott (2012) firmly believe in introducing expressive elements early in the learning process. Performing with expression early will create a need for technique to be addressed. Improving technique helps increase the available expression vocabulary. Expression motivates students to improve their vocal technique and/or musicianship skills. “Expressive musicianship is fundamental to all students’ development and should not be delayed until technique is in place” (Watkins & Scott, 2012, pg. 104). In addition, by including expressive elements early in the learning sequence, students will hopefully recognize that expressiveness is an integral part of the music and never perform the song void of expression.

There are several sequence options when introducing a song to a choir. Among other things, sequences can focus on learning the pitches and rhythms correctly in an efficient manner (Robinson & Winold, 1976), developing part singing skills (Collins, 1993) or embedding music literacy skills throughout the learning process (Goetze et al., 2011). Each sequence type introduces the expressive elements of a song in a slightly different manner. In most sequences, directors introduce expressive elements after rhythms and pitches have been learned (Collins, 1993; Goetze et al., 2011; Phillips, 2004; Robinson & Winold, 1976). These authors fall into the notes then expression camp. On the other hand, Leck and Jordan (2009) recommend using Jaques-Dalcroze eurhythmics to introduce expressive and form elements to the singer prior to singing. Robert Shaw rehearsed the four elements of a song (rhythm, pitch, text, and expression) in various combinations to ensure success of the ensemble and create a balanced, precise performance (Yarbrough, 2002). Shaw infused expression throughout the learning process and treated expression equal to the rhythm, pitches, and text. These authors fall into the expression alongside or prior to notes camp. Other textbooks (Emmons & Chase, 2006; Jordan, 2009; Smith & Sataloff, 2013) did not contain a specific learning sequence for introducing a new work. Since there are multiple viewpoints, I am

curious to know the most effective time to introduce expressive elements to a choir to help create an expressive performance.

Need for This Study

Teachers have used several teaching strategies to inspire an expressive performance (Broomhead, 2006; Ebie, 2004; Marchand, 1975; Meissner, 2017; Woody, 1999; Woody, 2006a; Woody, 2006b). However, most of these studies assessed the students as soloists (Ebie, 2004; Marchand, 1975; Meissner, 2017; Woody, 1999; Woody, 2006a; Woody, 2006b) as opposed to an ensemble (Broomhead, 2006). Additionally, musical expression studies have focused on older students, especially college-aged students (Marchand, 1975; Woody, 1999; Woody, 2006a; Woody, 2006b). Only one study focused on expressive instruction with high school students (Broomhead, 2006) and two with middle school students (Ebie, 2004; Meissner, 2017).

All the studies mentioned so far make no indication of when directors should introduce expression techniques in the learning sequence. They either allow participants to learn the rhythms and pitches beforehand (Ebie, 2004; Skadsem, 1997; Woody, 1999; Woody, 2006a; Woody, 2006b) or do not specify in the methodology when expressive elements were introduced in the learning process (Marchand, 1975; Meissner, 2017). Additionally, song acquisition sequences in the literature vary about when to introduce expressive elements (Collins, 1993; Goetze et al., 2011; Leck & Jordan, 2009; Phillips, 2004; Robinson & Winold, 1976). A study that explores the sequence in which expressive elements are acquired would not only provide valuable information for choir directors but may also foster more expressive choral performances.

Humans use aural and visual cues to communicate with others. To narrow the focus of this study, expressiveness will only refer to the auditory characteristics of a music performance. For

this study, expressiveness will not refer to a song expressing an emotion, mood or feeling. Nor will it refer to facial or body cues of a performer. This study will focus solely on the auditory variances, changes in articulation and dynamics, in a musical performance.

Purpose of the Study

The purpose of this study is to explore the effects of introducing expressive elements (i.e. dynamics, articulation, etc.) early or late in the song-learning sequence. Experiment 1 of this study will address the following questions:

1. Does the sequence in which a choir learns the elements of a song (i.e. rhythm, pitch, text, expression) influence the musical expression (articulation, dynamics) in their performance?

2. Does a choir's expressive performance improve with multiple rehearsals?

Experiment 2 will address the questions above as well as:

3. Does feedback during a song-learning sequence influence the musical expression (articulation, dynamics) of a choral performance?

CHAPTER 3: METHOD

Experiment 1 explores whether the timing of introducing expressive elements in the song-learning sequence influences the expressivity during choral performance. More specifically does the sequence in which a choir learns the elements of a song (i.e. rhythm, pitch, text, expression) influence the musical expression (articulation, dynamics) in their performance? Experiment 1 also explores whether or not expressivity in choral performance will improve with more rehearsals.

Experiment 1

To explore these questions, I created two different sequences (infused-expression and post-expression) to teach the song *Now All the Woods Are Waking* by Max Exner (see Figure 3.1). I chose this song for its length (eight measures) and simplicity. For this experiment, I added expressive markings to the melody. The text of the song guided the expressive choices. For example, “Now all the woods are waking, the sun is rising high.” and “Before the dew is dry.” was marked piano while the text “Wake up now! Get up now!” was marked forte. Additionally the text “Now all the woods are waking” and “Before the dew is dry” was marked staccato while “the sun is rising high. Wake up now! Get up now!” was marked legato.

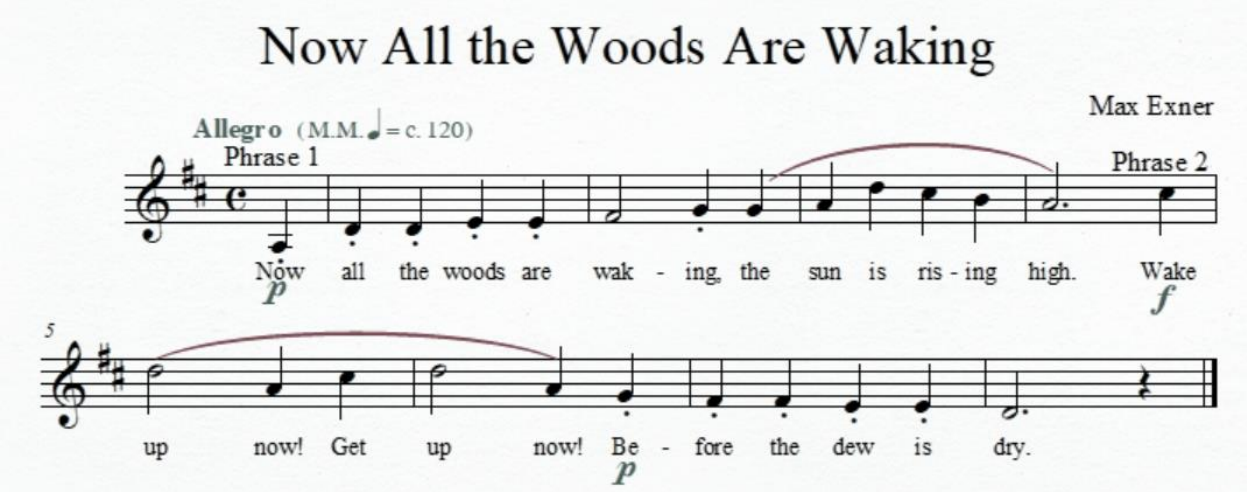

Figure 3.1. Now All the Woods Are Waking

Using a Zoom H1 Digital Recorder I recorded a high school age treble choir (age in years *M* = 15.38, *SD* = 1.50; years of choir experience *M* = 4.44, *SD* = 1.55; grade *M* = 10.36, *SD* = 1.53) performing *Now All the Woods Are Waking* and the first phrase of *Twinkle, Twinkle Little Star*. I made recordings of the choir performing on rhythm syllables, solfége, and text both with and without expression. I used these recordings as the vocal model for the audio sequences. I combined recordings of myself giving directions and clips from the model choir using the free software Audacity (Audacity, 2018). Audio sequences were then set to a visual of the music notation using Windows Movie Maker (Windows Movie Maker, 2016). I uploaded both sequences to YouTube for easy access. All notation was created using Finale notation software (Finale Music, 2016).

To ensure all singers would be vocally ready to perform *Now All the Woods Are Waking* with expression, both sequences began with a five-minute vocal warm-up using vocalizes learned in previous rehearsals for the target population. As in a typical choral rehearsal, I modeled warm-ups and used the piano to assist singers. At the end of the pre-recorded warm-up session, I added a training sequence. Using the first phrase of *Twinkle, Twinkle Little Star* where participants would

echo the model choir rhythm, on rhythm syllables, pitches on solfége, and the text with correct pitch and rhythm. I created the training sequence to mimic the learning sequence of the post-expression without expression sequence. During the training session, participants held a paper copy of the music notation. I also projected the notation on a screen in the front of the room. For a transcript of the warm-up and training session see Appendix A and Appendix B respectively. I then created two different sequences either infused-expression or post-expression.

I based the infused-expression sequence on the rehearsal techniques of Robert Shaw as outlined by Yarbrough (2002). During the infused-expression sequence expressive elements occurred alongside rhythm, pitch, and text. First, the participants heard concrete instructions explaining the expressive markings and their meanings. Then they heard an expressive model of the entire melody on text. Participants then heard the model choir speak the rhythm on rhythm syllables with musical expression. The participants echoed two times. The participants were given 30 seconds to silently decode the solfége. The participants then heard the model choir sing the pitches on solfége with musical expression. The participants echoed four times. Then the participants heard the model choir sing the melody on text with musical expression. The participants echoed two times. To watch and hear the experiment 1 infused-expression sequence, follow the YouTube link: https://youtu.be/9_o1ytpZx5c. For a transcript of the experiment 1 infused-expression sequence, see Appendix C. The entire sequence including warm-up, training session, and infused-expression sequence was 16 minutes and 40 seconds.

During the post-expression sequence, participants learned the rhythm, pitch, and text first followed by expressive elements of the song. First, the participants heard an expressive model of the entire melody. Then the participants heard the model choir speak the rhythm on rhythm syllables with no expression. The participants echoed two times. The participants were given 30

seconds to silently decode the solfége. Then the participants heard the model choir sing the pitches on solfége without musical expression. The participants echoed four times. Then the participants heard the model choir sing the melody on text without musical expression. The participants echoed two times. Once the participants had echoed the rhythm, pitch, and text, they heard concrete instructions highlighting the expressive markings and their meaning. Then the participants heard the model choir sing the text with expression elements and the participants echoed twice. To watch and hear the experiment 1 post-expression sequence, follow the YouTube link: https://youtu.be/BeOCu0TslcI. For a transcript of the experiment 1 post-expression sequence, see Appendix D. The entire sequence including warm-up, training session, and post-expression sequence was 19 minutes and 12 seconds.

Once sequences were complete, I created a survey using the computer program Qualtrics (Qualtrics, 2018). This survey acted as an at home practice session. It contained the following directions: "Thank you for participating in this study. You will be asked to follow along and sing aloud. Please only compete the sequence one time." The survey contained a link to the assigned sequence YouTube video. The participants were then asked three questions: (a) were you able to access the online sequence? (b) Did you complete the sequence one time? (c) What is your name?

Population.

For the first study in this project, participants included 28 choir students (male = 10, female = 18; age in years M = 11.43, SD = 1.20; years of choir experience M = 0.68, SD = 0.82; grade M = 6.46, SD = 1.17; see Table 3.1) from a community children's choir program located in the southeast United States. Participants learned the song *Now All the Woods Are Waking* using either a post-expression sequence or an infused-expression sequence. All participants had previously

passed a membership audition consisting of accurately echoing simple phrases and singing *My Country 'Tis of Thee* with correct pitches and rhythm in the key of F major. All participants were previous or current members of a choir directed by the researcher.

Table 3.1

Description of Experiment 1 Population

	Males	Females	Total
Age in years			
10	2	6	8
11	5	3	8
12	1	3	4
13	2	6	8
M (*SD*)	11.3 (1.06)	11.5 (1.30)	11.43 (1.20)
Years of choir experience			
0	3	12	15
1	5	2	7
2	2	4	6
M (*SD*)	0.90 (0.74)	0.56 (0.86)	0.68 (0.82)
Grade			
5	2	5	7
6	5	4	9
7	0	4	4
8	3	5	8
M (*SD*)	6.40 (1.17)	6.50 (1.20)	6.46 (1.17)
Gender	10	18	28

All participants volunteered to take part in the study, and they received no compensation for their participation. Parents/guardians granted written consent before the study. Participants also gave their written assent. To maintain anonymity, I labeled student data through a randomized numerical coding system. The experimental procedure met all the requirements for human

subjects' participation. The study took place 30-minutes prior to two consecutive weekly rehearsals late in the fall semester.

I divided participants evenly into experimental and control groups. I balanced groups based years of choral experience. Broomhead (2001) and Marchand (1975) found music experience had a strong correlation to expressive singing. Therefore, I used choral experience as a balancing factor between groups. The infused-expressive group (Group A) consisted of 15 participants (years of choir experience M = .67, SD = 0.82). The post-expressive group (Group B) consisted of 13 participants (years of choral experience M = 0.69, SD = 0.85).

Both groups experienced their sequences at the same time in two different rooms. As students entered their respective rooms, I gave each student an iPad and asked them to place it under their chair until later. Additionally, I gave each participant a copy of the notation for the first phrase of *Twinkle, Twinkle Little Star* and *Now All the Woods Are Waking*. Students stood approximately three to five feet apart from each other. This spacing allowed each singer to have the support of singing with an ensemble yet allowed the recording app on the iPad to collect an accurate recording of the individual. I played and projected the YouTube video of the sequence on the dropdown screen. Students also held the music in their hands if they chose. The participants completed identical warm-ups and training session, each group experienced a different learning sequence. Group A experienced the infused-expression sequence while group B experienced the post-expression sequence.

After each sequence, recordings were made simultaneously as a group (iPad video camera) and individually (iPad app) for the initial assessment. All warm-ups, training sessions, sequences and recording sessions were video recorded using an iPad Air video camera. Participants recorded themselves using the iPad app Voice Recorder and Audio Editor (TapMedia Limited, 2018). I

chose the app for its functionality and ease of use. I instructed students to find the Voice Recorder and Audio Editor app, tap the microphone icon and then press the red record button when ready. I checked and made sure all students were recording correctly. During all recordings, each student held an iPad about six inches from their face. All participants heard the same prerecorded recording prompt. During the prompt a piano played the chords I, IV, I, V7, I in D major, and then the first two starting pitches. After establishing the key students were counted in on "1, 2, sing." Participants then sang the melody. All students sang at the same time, but because of the proximity of the iPad and spacing of the students, it was easy to pick out the participant's individual voice in their recording. After singing the melody, participants pressed stop. Participants then saved and uploaded their recording to a designated online storage folder. I projected directions for recording and uploading on a screen in front of the room (see Figure A.3, Figure A.4). Each participant labeled their recording with their name, group letter (A or B) and date of recording. I also wrote down which student used which iPad in case a student did not upload a recording correctly. I used video recordings of the recording sessions for group recording assessments. All recordings were performed *a cappella* without a conductor.

Three days after the participants learned *Now All the Woods Are Waking* in a group setting they received an email. The email contained a survey link allowing participants access to the YouTube video of the identical warm-up, training session, and sequence they had already experienced in a group setting. The infused-expression group only had access to the infused-expression sequence. The post-expression group only had access to the post-expression sequence. In the email, I asked students to follow the link and participate in the sequence by themselves, at home, one time. The computer program Qualtrics limited each student to one log in. Students who had not logged on by the evening of the fourth day received a reminder email. The login was not

available after 5:00 PM on the fifth day after the initial sequence ensuring students did not practice the day before the retention test.

One week after the initial learning sequence, groups reconvened for a retention test. Each group recorded their retention test separately. Students stood in the same spread out position and used the same iPad as the week before. Each group took part in the same five-minute vocal warm-up. However, participants did not experience the training session or learning sequence as they had the previous week. During all recordings, each student held an iPad about six inches from their face. All participants heard the same prerecorded recording prompt as before. All students sang at the same time, but because of the proximity of the iPad and spacing of the students, it was easy to pick out the participant's individual voice in their recording. I projected directions for recording and uploading on a screen in front of the room (see Figure A.3, Figure A.4). Each participant labeled their recording with their name, group letter (A or B) and date of recording. Students saved and uploaded their recordings just like in the initial assessment. I also wrote down which student used which iPad in case a student did not upload a recording correctly. I used video recordings of the recording sessions for group recording assessments. All recordings were performed *a cappella* without a conductor.

Assessment.

I had to exclude eight participants who were initially included in the balancing of groups. Two participants did not show up for the retention test. One student experienced technical difficulty and was not able to record any data on their retention test. Five participants did not complete the at home practice session. Without the eight excluded participants the infused-expressive group (Group A) consisted of 10 participants (years of choral experience $M = 0.60$, *SD*

= 0.84). Without the eight excluded participants the post-expressive group (Group B) also consisted of 10 participants (years of choral experience *M* = 0.80, *SD* = 0.92; see Table 3.2).

Table 3.2

Description of Experiment 1 Population Without Excluded Participants

	Infused-expression group	Post-expression group	Total
Age in years			
10	4	2	6
11	3	3	6
12	0	3	3
13	3	2	5
M (*SD*)	11.2 (1.32)	11.5 (1.08)	11.35 (1.18)
Years of choir experience			
0	6	5	11
1	2	2	4
2	2	3	5
M (*SD*)	0.60 (0.84)	0.80 (0.92)	0.70 (0.86)
Grade			
5	4	2	6
6	3	3	6
7	0	2	2
8	3	3	6
M (*SD*)	6.20 (1.32)	6.60 (1.17)	6.40 (1.23)
Gender			
Male	4	3	7
Female	6	7	13

Prior to assessment, I randomly coded all recordings with an id number. I then placed all recordings in one digital folder and sorted them by number. This sorting randomized the order. This randomization kept the sequence group unknown and disguised whether the recording was from the initial assessment or the retention test. I assessed each recording by counting how many

notes the participant performed with correct expressive markings. *Now All the Woods Are Waking* consists of 25 notes. Participants could earn 25 points for correctly performing the articulations (staccato and legato). The participants could earn 25 points for correctly performing the dynamics (forte and piano). The highest possible score was 50 and the lowest possible score was two. When assessing articulation, I gave credit to all participants for note 6 and note 25. Both note 6 and 25 were half notes, located in a phrase marked staccato. When assessing dynamics, I assumed the initial phrase was sung piano. I assessed subsequent phrases in relation to the volume of the first phrase. I combined the dynamics subscores and articulation subscores to create one expressivity score. I listened to recordings multiple times until I was confident with my assessment markings.

An outside rater scored twenty percent (n = 12) of the recordings to check for reliability. The reliability rater was a certified public music educator. The rater had nine years' experience with elementary choirs and children's voices. The reliability rater and I met and scored three examples together. This meeting served as a training period and helped us agree upon assessment techniques. The reliability rater then scored 12 randomly selected recordings on her own. To improve reliability, I coded recordings so the reliability rater was blind to the sequence group and whether the initial or retention test. Of the 12 randomly chosen recordings, rater one (myself) had an average expressivity score of M = 44.00 (SD = 5.91). Rater number two had an average expressivity score of M = 43.92 (SD = 5.79) on the same recordings. I chose to run an Intraclass Correlation Coefficient (ICC) statistic to assess the consistency of quantitative measures made by two different raters. The ICC results suggested a high degree of reliability between raters on expressivity scores. The average measure ICC was .99 with a 95% confidence interval from .97 to .99 ($F(11, 11) = 99.95$, $p < .001$ (see Table 3.3).

I also explored whether there was strong inter-rater reliability on the articulation subscores and dynamics subscores. On the 12 randomly chosen recordings rater one (myself) had an average articulation subscore of M = 21.50 (SD = 2.94). Rater number two had an average articulation subscore of M = 21.42 (SD = 2.81) on the same recordings. ICC results suggested a high degree of reliability between raters. For articulation subscores the average measure ICC was .96 with a 95% confidence interval from .85 to .99 (F (11, 11) = 23.39, p < .001 (see Table 3.3). On the 12 randomly chosen recordings rater one (myself) had an average dynamics subscore of M = 22.33, SD = 3.26. Rater number two had an average dynamics subscore of M = 22.42 (SD = 3.09) on the same recordings. ICC results demonstrated a high degree of reliability between raters. The average measure ICC was .98 with a 95% confidence interval from .93 to .99 (F (11, 11) = 48.70, p < .001 (see Table 3.3).

Table 3.3

Intraclass Correlation Coefficient of Raters for Experiment 1

Type of Score	95% Confidence level			*F* Test with true value 0			
	Intraclass correlation[a]	Lower bound	Upper bound	Value	df1	df2	Sig
Expressivity score	0.99[b]	0.97	0.99	99.95	11	11	0.00
Articulation subscore	0.96[b]	0.85	0.99	23.39	11	11	0.00
Dynamics subscore	0.98[b]	0.93	0.99	48.70	11	11	0.00

a. Type C intraclass correlation coefficients using a consistency definition. The between-measure variance is excluded from the denominator variance.
b. This estimate is computed assuming the interaction effect is absent, because it is not estimable otherwise.

Experiment 2

During experiment 1, I noticed students who had previously demonstrated understanding of the expressive concepts (dynamics, articulation) were not performing these concepts accurately during performance. The students heard an accurate model of the song and appeared to understand the directions and expectations, but still were not changing the way they were singing. Normally in a rehearsal, I would give feedback on student performance. However, prerecording both sequences did not allow for any feedback. I did not know how students would react in the moment, so I did not include any feedback in the experiment 1 sequences. I was curious to explore if adding feedback to both sequences would change the results from experiment 1.

In order to explore question 3 (Does feedback during a song-learning sequence influence the musical expression of a choral performance?) and after reviewing the literature related to feedback interventions, I decided to add feedback interventions to my sequences and repeat the experiment. However, I wanted the feedback to be the same for both sequence groups. According to research, feedback should be specific and offer a solution to the problem (Stamer, 1999). Ideally, feedback statements should be positive around 80% of the time (Price, 1983). Chambers and Vickers (2006) replaced coach feedback with questioning with 24 swimmers aged 14-17. They found that posing feedback as a question to encourage swimmers to self-reflect had a positive effect on performance. I based my feedback statements on these findings.

Considering this information, I watched the video recordings of experiment 1 and wrote down the feedback I would have said if it were a normal rehearsal. Using feedback as suggested by Chambers & Vickers (2006), I settled on three feedback questions: (a) Can you make the first part of the phrase separated and the second part of the phrase smooth like the model? (b) Can you make the forte section louder and the piano section quieter? (c) I want to hear a big change in

volume on the words “wake up now get up now.” Statement A occurred in between repetitions of the first phrase. Statement B occurred in between repetitions of the second phrase. Statement C occurred in between repetitions of the entire song. See Appendix E and Appendix F for experiment 2 sequence scripts.

As in experiment 1, the infused-expression sequence worked on expressive elements during the rhythm, pitch and text sections of the sequence. Therefore, I added feedback statements to all three sections of the infused-expression sequence. The post-expression sequence only focused on expression during the fourth section of the sequence after the participants had learned the rhythm, pitch and text of the song. Therefore, I only added feedback statements to the fourth section of the post-expression sequence. Overall, the infused-expression sequence heard each of the three feedback statements three times while the post-expression group only heard each of the three feedback statements one time. Besides the feedback statements, all other aspect of the sequences remained the same. To watch and hear the experiment 2 infused-expression sequence, follow the YouTube link: https://youtu.be/dczkM3G9QsM. The entire infused-expression sequence including the warm-up, training session and sequence was 18 minutes and 55 seconds. To watch and hear the experiment 2 post-expression sequence, follow the YouTube link: https://youtu.be/2KPwwreBC50. The entire post-expression sequence including the warm-up, training session and sequence was 20 minutes and 40 seconds

Population.

For the second study in this project, participants included 27 choir students (male = 6, female = 21; age in years M = 9.85, SD = 0.72; years of choir experience M = 0.48, SD = 0.51; grade M = 4.56, SD = 0.51; see Table 3.4) from an upper middle-class elementary school choir

program located in the Southeast United States. Participants learned a new song using either a post-expression sequence or an infused-expression sequence. All participants had previously passed a membership audition consisting of accurately echoing simple phrases and singing *Twinkle, Twinkle Little Star* with correct pitches and rhythm in the key of E flat major. All participants were current members of a choir directed by the primary investigator.

Table 3.4

Description of Experiment 2 Population

	Males	Females	Total
Age in years			
9	1	8	9
10	4	9	13
11	1	4	5
M (*SD*)	10.00 (0.63)	9.81(0.75)	9.85 (0.72)
Years of choir experience			
0	3	10	13
1	3	11	14
M (*SD*)	0.50 (0.55)	0.52 (0.51)	0.52 (0.51)
Grade			
4	3	9	12
5	3	12	15
M (*SD*)	4.50 (0.55)	4.57 (0.51)	4.56 (0.51)
Gender	6	21	27

All participants volunteered to take part in the study, and they received no compensation for their participation. Parents/guardians granted written consent before the study. Participants also gave their written assent. To maintain anonymity, I labeled student data through a randomized numerical coding system. The experimental procedure met all the requirements for human

subjects' participation. The study took place after school during two consecutive weeks late in the fall semester.

I divided participants evenly into experimental and control groups. I balanced groups based on years of choral experience as recommended by previous research (Broomhead, 2001; Marchand, 1975) and singing ability as assessed by choir audition scores. The infused-expressive group (Group A) consisted of 15 participants (years of choral experience $M = .40$, $SD = 0.51$; choir audition score $M = 14.50$, $SD = 1.20$). The post-expressive group (Group B) consisted of 12 participants (years of choral experience $M = 0.58$, $SD = 0.51$; choir audition score $M = 14.30$, $SD = 1.18$)

Each group experienced their sequence on a different day in the same room. As in experiment 1, students stood approximately three to five feet apart from each other and were each given a copy of the notation for the first phrase of *Twinkle, Twinkle Little Star* and *Now All the Woods Are Waking*. After identical warm-ups and training sessions, each group experienced a different learning sequence. Group A experienced the infused-expression sequence while group B experienced the post-expression sequence.

After each sequence, participants were recorded in the same manner using the same iPad app as in experiment 1. As in experiment 1, all warm-ups, training sessions, sequences and recording sessions were video recorded using an iPad Air video camera. I used video recordings of the recording sessions for group recording assessments. All recordings were performed *a cappella* without a conductor.

As in experiment 1, participants received an email three days after learning *Now All the Woods Are Waking* in the group setting. The email and survey were identical to the email and

survey in experiment 1 except the students had links to the updated sequences which included feedback.

One week after the initial learning sequence, groups reconvened for a retention test. Students stood in the same spread out position and used the same iPad as the week before. Each group took part in the same five-minute vocal warm-up. However, participants did not experience the training session or learning sequence as they had the previous week. Students recorded themselves in the same manner as before using iPads approximately 6 inches from their face.

Assessment.

I had to exclude six participants. Five participants did not complete the at home practice session. One participant had technical difficulty and did not collect any retention test data. Without the six excluded participants the infused-expressive group (Group A) consisted of 11 participants (years of choral experience M = .55, SD = 0.52; choir audition score M = 15.09, SD = 0.51) and the post-expression group consisted of 10 participants (years of choral experience M = 0.50, SD = 0.53; choir audition score M = 14.00, SD = 1.00; see Table 3.5).

Table 3.5

Description of Experiment 2 Population Without Excluded Participants

	Infused-expression group	Post-expression group	Total
Age in years			
9	3	3	6
10	4	5	9
11	4	2	6
M (*SD*)	10.0 (0.85)	9.90 (0.74)	9.91 (0.75)
Years of choir experience			
0	5	5	10
1	6	5	11
M (*SD*)	0.50 (0.52)	0.50 (0.53)	0.50 (0.51)
Grade			
4	3	5	8
5	8	5	13
M (*SD*)	4.67 (0.49)	4.50 (0.53)	4.59 (0.51)
Gender			
Male	0	6	6
Female	11	4	15

As in experiment 1, I randomly coded all recordings with a random ID. I then placed all recordings in one digital folder and sorted them by number. This sorting randomized the order. This randomization kept the sequence group unknown and disguised whether the recording was from the initial assessment or the retention test. I assessed each recording exactly as I did in experiment 1. Participants could earn 25 points for correctly performing the articulations correctly (staccato and legato). The participants could earn 25 points for correctly performing the dynamics correctly (forte and piano). The highest possible score was 50 and the lowest possible score was two. When assessing articulation, I gave credit to all participants for note 6 and note 25. Both note

6 and 25 were half notes, located in a phrase marked staccato. When assessing dynamics, I assumed the initial phrase was sung piano. I assessed subsequent phrases in relation to the volume of the first phrase. I combined the dynamics subscores and articulation subscores to create one expressivity score. I listened to recordings multiple times until I was confident with my assessment markings.

The same outside rater as in experiment 1 scored twenty percent (n=12) of the recordings to check for reliability. The reliability rater was blind to the sequence group and whether the initial or retention test. Of the 12 randomly chosen recordings, rater one (myself) had an average expressivity score of $M = 41.42$, $SD = 7.54$. Rater number two had an average expressivity score of $M = 41.17$, $SD = 7.61$ on the same recordings. I chose to run an Intraclass Correlation Coefficient (ICC) statistic because it is used to assess the consistency of quantitative measures made by two different raters. The ICC results suggested a high degree of reliability between raters on expressivity scores. The average measure ICC was .99 with a 95% confidence interval from 0.98 to 0.99 ($F (11, 11) = 154.40$, $p < .001$ (see Table 3.6).

I also explored whether there was strong inter-rater reliability on the articulation subscores and dynamics subscores. On the 12 randomly chosen recordings, rater one (myself) had an average articulation subscore of $M = 19.58$, $SD = 5.16$. Rater number two had an average articulation subscore of $M = 19.42$, $SD = 4.09$ on the same recordings. Results indicated a high degree of reliability between raters. For articulation subscores the average measure ICC was .99 with a 95% confidence interval from .95 to .99 ($F (11, 11) = 64.42$, $p < .001$ (see Table 3.6). On the 12 randomly chosen recordings rater one (myself) had an average dynamics subscore of $M = 21.67$, $SD = 2.99$. Rater number two had an average dynamics subscore score of $M = 21.75$, $SD = 2.99$ on the same recordings. Results indicated a high degree of reliability between raters. The average

measure ICC was .99 with a 95% confidence interval from 0.99 to 0.99 (F (11, 11) = 428.64, $p <$ .001 (see Table 3.6).

Table 3.6

Intraclass Correlation Coefficient of Raters for Experiment 2

	95% Confidence level			F Test with true value 0			
Type of Score	Intraclass correlation[a]	Lower bound	Upper bound	Value	df1	df2	Sig
Expressivity score	0.99[b]	0.98	0.99	154.40	11	11	0.00
Articulation subscore	0.99[b]	0.95	0.99	64.42	11	11	0.00
Dynamics subscore	0.99[b]	0.99	0.99	428.64	11	11	0.00

a. Type C intraclass correlation coefficients using a consistency definition. The between-measure variance is excluded from the denominator variance.
b. This estimate is computed assuming the interaction effect is absent, because it is not estimable otherwise.

CHAPTER 4: RESULTS

Experiment 1

Experiment 1 expressivity scores.

Articulation and dynamics subscores was added together to create an expressivity score. The average expressivity score for the infused-expression group's initial assessment was M = 40.00 (SD = 3.89). The average expressivity score for the post-expression group's initial assessment was M = 38.90 (SD = 4.77). The average expressivity score for the infused-expression group's retention test was M = 47.30 (SD = 1.64). The average expressivity score for the post-expression group's retention test was M = 47.80 (SD = 2.35). See Table 4.1 for expressivity scores for all experiment 1 participants.

Table 4.1

Experiment 1 Expressivity Scores

	Initial Assessment			Retention Test		
Student Number	**Articulation Subscore**	**Dynamics Subscore**	**Expressivity Score**	**Articulation Subscore**	**Dynamics Subscore**	**Expressivity Score**
Infused- Expression Group						
1	21	19	40	23	25	48
4	18	25	43	23	25	48
8	20	22	42	21	25	46
11	25	19	44	25	25	50
16	16	24	40	24	25	49
17	19	19	38	22	22	44
18	18	19	37	22	25	47
21	18	15	33	24	23	47
24	18	19	37	22	25	47
26	21	25	46	22	25	47
Mean	19.40	20.60	**40.00**	22.80	24.50	**47.30**
SD	2.50	3.27	**3.89**	1.23	1.08	**1.64**
Post-Expression Group						
2	24	19	43	25	25	50
3	23	19	42	25	25	50
5	20	19	39	24	25	49
10	13	13	26	23	9	32
12	18	15	34	24	20	44
13	24	25	49	23	25	48
14	18	19	37	24	25	49
15	17	16	34	25	23	48
19	20	19	39	25	25	50
27	18	19	38	21	25	46
Mean	20.10	18.90	**38.90**	24.00	23.70	**47.80**
SD	2.64	2.60	**4.77**	1.25	2.31	**2.35**

I conducted a two-way mixed ANOVA to see if there was an interaction between the sequence group and number of rehearsals on the students' expressiveness score. I chose a two-way mixed ANOVA because it compares the mean differences between groups that have been split on two independent variables. In this study, sequence group (between-subjects factor) and number of

rehearsals (within-subjects factor) were the two independent variables. The dependent variable was expressiveness score.

There was no statistically significant interaction between the sequence group, number of rehearsals, and expressivity scores, F (1, 18) = 0.86, p = 0.37, partial η^2 = 0.05 (see Figure 4.1). These data suggests the sequence and number of rehearsals did not interact to influence student's expressivity scores. However, the main effect of the number of rehearsals showed a statistically significant difference on mean expressivity scores between the initial assessment and retention test, F (1, 18) = 87.81, $p < .001$, partial η^2 = 0.83. This finding suggests that with more rehearsals and repetitions of a learning sequence students improve their expressivity during performance. The main effect of sequence group did not show a statistically significant difference on mean expressivity scores F (1, 18) = 0.58, p = 0.81, partial η^2 = 0.00. These data imply that both the infused-expression sequence and the post-expression sequence had a similar influence on how expressive participants were during the initial assessment and retention test.

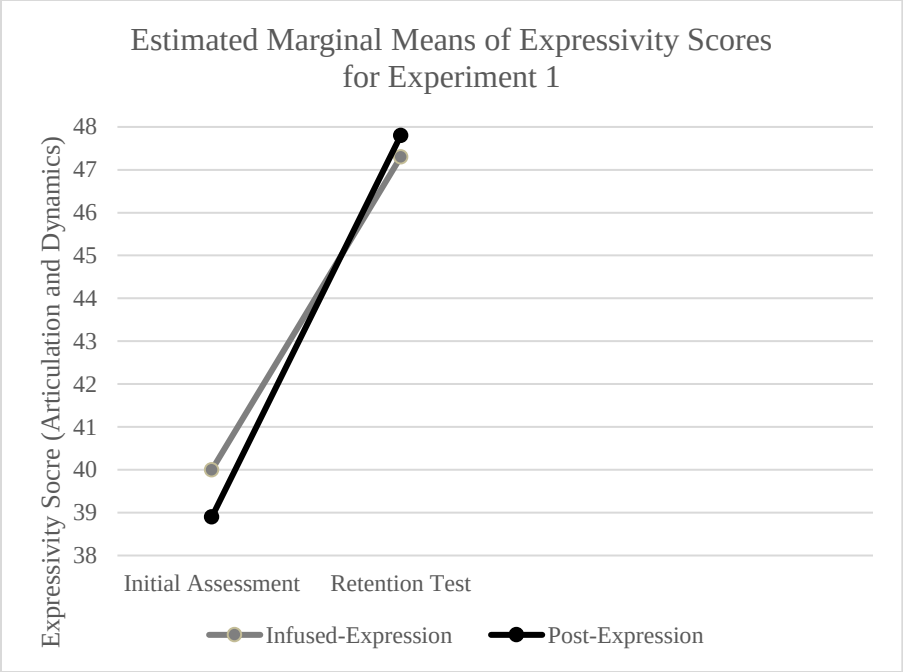

Figure 4.1. Estimated Marginal Means of Expressivity Scores for Experiment 1

There were two outliers in the data as assessed by inspection of a boxplot for values greater than 1.5 box-lengths from the edge of the box. I ran statistics both with and without the two outliers and received similar results. Therefore, I chose to leave the outliers in the data set. Some test scores did not follow a normal distribution as assessed by Shapiro-Wilk's test ($p > 0.05$). The post-expression retention test had a p value of 0.04, which is smaller than the 0.05 Shapiro-Wilk standard. However, the infused-expression initial assessment ($p = 0.96$), post-expression initial assessment ($p = 0.21$) and the infused-expression retention test ($p = 0.59$) were above the 0.05 threshold. There was homogeneity of covariances as assessed by Box's test of equality of covariance matrices ($p = 0.62$). There was homogeneity of variances, as assessed by Levene's test of homogeneity of variance ($p > 0.05$). Neither the initial assessment ($p = 0.68$) or the retention test ($p = 0.18$) was significant at the 0.05 level on Levene's test. Mauchly's test of sphericity was not required since there were only two within-subject factors.

Experiment 1 articulation subscores.

I also investigated if there was an interaction between sequence group, number of rehearsals and articulation subscores. The average articulation subscore for the infused-expression group's initial assessment was M = 19.40 (SD = 2.50). The average articulation subscore for the post-expression group's retention test was M = 20.10 (SD = 2.64). The average articulation subscore for the infused-expression group's retention test was M = 22.80 (SD = 1.23). The average articulation subscore for the post-expression group's retention test was M = 24.00 (SD = 1.25). See Table 4.2 for the experiment 1 individual articulation subscores.

Table 4.2

Experiment 1 Articulation Subscores

	Initial Assessment					Retention Test				
Student Number	**Notes 1-7**	**Notes 8-13**	**Notes 14-19**	**Notes 20-25**	**Total**	**Notes 1-7**	**Notes 8-13**	**Notes 14-19**	**Notes 20-25**	**Total**
Highest Possible Score	**7**	**6**	**6**	**6**	**25**	**7**	**6**	**6**	**6**	**25**
Infused-Expression Group										
1	3	6	6	6	21	5	6	6	6	23
4	1	6	6	5	18	6	5	6	6	23
8	2	6	6	6	20	3	6	6	6	21
11	7	6	6	6	25	7	6	6	6	25
16	1	6	4	5	16	6	6	6	6	24
17	1	6	6	6	19	5	6	6	5	22
18	1	5	6	6	18	6	4	6	6	22
21	1	5	6	6	18	6	6	6	6	24
24	1	6	6	5	18	5	5	6	6	22
26	3	6	6	6	21	6	5	6	5	22
Mean	2.10	5.80	5.80	5.70	**19.40**	5.50	5.50	6.00	5.80	**22.80**
SD	1.91	0.42	0.63	0.48	**2.50**	1.08	0.71	0.00	0.42	**1.23**
Post-Expression Group										
19	2	6	6	6	20	7	6	6	6	25
2	6	6	6	6	24	7	6	6	6	25
3	5	6	6	6	23	7	6	6	6	25
5	2	6	6	6	20	6	6	6	6	24
10	2	4	6	7	19	6	6	6	6	24
12	1	6	6	6	18	6	6	6	6	24
13	6	6	6	6	24	7	5	5	6	23
14	1	6	5	6	18	6	6	6	6	24
15	1	6	6	5	17	7	6	6	6	25
27	1	6	6	6	18	3	6	6	6	21
Mean	2.70	5.80	5.90	6.00	**20.10**	6.20	5.90	5.90	6.00	**24.00**
SD	2.11	0.63	0.32	0.47	**2.64**	1.23	0.32	0.32	0.00	**1.25**

The largest variance in articulation subscores occurred in notes 1-7 on the text “Now all the woods are waking” (see Table 4.2). Participants tended to either earn the highest possible points

a sub-phrase (i.e. notes 1-7) or no points at all. It was rare for a student to change articulations in the middle of a sub-phrase. For example, only one student in the infused-expression sequence group and three students in the post-expression group earned five points or higher on the first seven notes of the initial assessment. In contrast, nine participants in each group earned higher than five points on the same seven notes on the retention test. Most every participant earned five or more points for all other note groupings. This finding indicates a key difference between a higher and lower articulation subscore was when students remembered to sing the text "Now all the woods are waking" with a staccato articulation.

There was no statistically significant interaction between the sequence group, number of rehearsals and articulation subscores, F (1, 18) = 0.12, p = 0.73, partial η^2 = 0.01 (see Figure 4.2). These data suggest the number of rehearsals and order in which the participants learned the elements of a song did not interact on student's articulation subscores at a significant level. However, the main effect of number of rehearsals showed a statistically significant difference in mean articulation subscores between the initial assessment and the retention test, F (1, 18) = 129.60, $p < .00$, partial η^2 = 0.68. This finding suggests correct execution of articulation improved when participants partook in multiple rehearsals and repeated a song-learning sequence. The main effect of sequence group showed there was not a statistically significant difference in mean articulation subscores between sequence groups F (1, 18) = 1.66, p = 0.21, partial η^2 = 0.08. These data imply that both the infused-expression group and the post-expression group had a similar influence on the execution of the participants' articulation subscores.

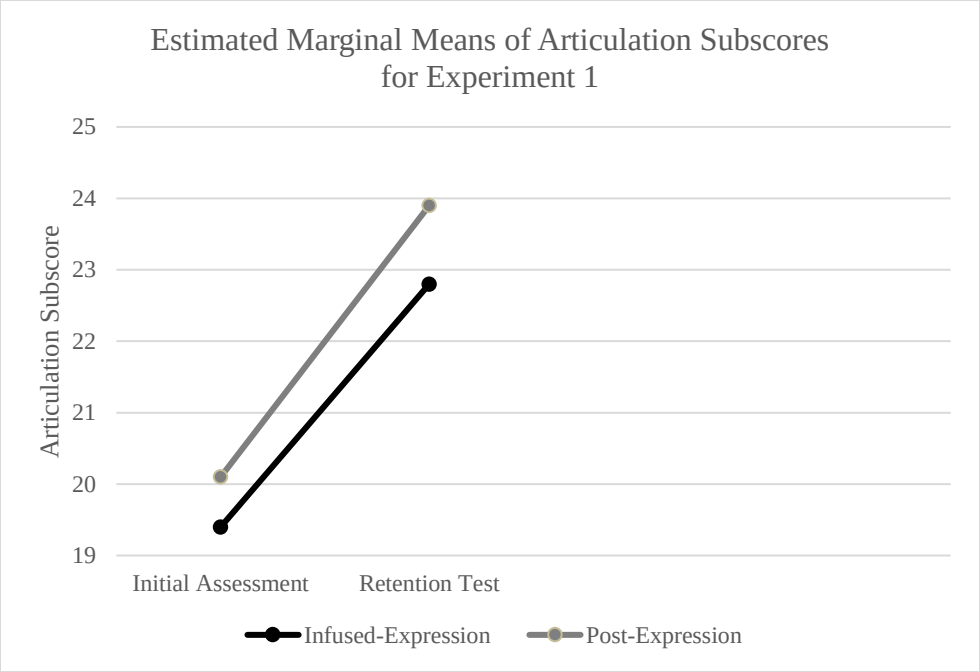

Figure 4.2. Estimated Marginal Means of Articulation Subscores for Experiment 1

There were no outliers in the data as assessed by inspection of a boxplot for values greater than 1.5 box-lengths from the edge of the box. However, articulation subscores did not follow a normal distribution as assessed by Shapiro-Wilk's test ($p > .05$). The post-expression retention test had a p value of .03, which is smaller than the Shapiro-Wilk's .05 standard. The infused-expression initial assessment ($p = 0.16$), post-expression initial assessment ($p = 0.73$) and the infused-expression retention test ($p = 0.39$) were above the 0.05 threshold. There was homogeneity of covariances as assessed by Box's test of equality of covariance matrices ($p = 0.99$). There was homogeneity of variances, as assessed by Levene's test of homogeneity of variance ($p > 0.05$). Neither the initial assessment ($p = 0.69$) or the retention test ($p = 0.86$) was significant at the 0.05 level on Levene's test. Mauchly's test of sphericity was not required since there were only two within-subject factors.

Experiment 1 dynamics subscores.

I also investigated if there was an interaction between sequence group, number of rehearsals, and dynamics subscores. The average dynamics subscore for the infused-expression group's initial assessment was M = 20.60 (SD = 3.27). The average dynamics subscore for the post-expression group's retention test was M = 18.90 (SD = 2.60). The average dynamics subscore for the infused-expression group's retention test was M = 24.50 (SD = 1.08). The average dynamics subscore for the post-expression group's retention test was M = 23.70 (SD = 2.3). See Table 4.3 experiment 1 for individual dynamic subscores.

Table 4.3

Experiment 1 Dynamics Subscores

	Initial Assessment					Retention Test				
Student Number	**Notes 1-7**	**Notes 8-13**	**Notes 14-19**	**Notes 20-25**	**Total**	**Notes 1-7**	**Notes 8-13**	**Notes 14-19**	**Notes 20-25**	**Total**
Highest Possible Score	**7**	**6**	**6**	**6**	**25**	**7**	**6**	**6**	**6**	**25**
Infused-Expression Group										
1	7	6	0	6	19	7	6	6	6	25
4	7	6	6	6	25	7	6	6	6	25
8	7	6	6	3	22	7	6	6	6	25
11	7	6	0	6	19	7	6	6	6	25
16	7	6	6	5	24	7	6	6	6	25
17	7	6	0	6	19	7	5	4	6	22
18	7	6	0	6	19	7	6	6	6	25
21	7	4	0	4	15	7	6	6	4	23
24	7	6	0	6	19	7	6	6	6	25
26	7	6	6	6	25	7	6	6	6	25
Mean	7.00	5.80	2.40	5.40	**20.60**	7.00	5.90	5.80	5.80	**24.50**
SD	0.00	0.63	3.10	1.07	**3.27**	0.00	0.32	0.63	0.63	**1.08**
Post-Expression Group										
2	7	6	0	6	19	7	6	6	6	25
3	7	6	0	6	19	7	6	6	6	25
5	7	6	0	6	19	7	6	6	6	25
10	7	6	0	6	19	7	6	0	6	19
12	7	2	6	0	15	6	2	6	6	20
13	7	6	6	6	25	7	6	6	6	25
14	7	6	0	6	19	7	6	6	6	25
15	7	6	0	3	16	7	6	6	4	23
19	7	6	0	6	19	7	6	6	6	25
27	7	6	0	6	19	7	6	6	6	25
Mean	7.00	5.60	1.20	5.10	**18.90**	6.90	5.60	5.40	5.80	**23.70**
SD	0.00	1.26	2.53	2.02	**2.60**	0.32	1.26	1.90	0.63	**2.31**

The largest variance in dynamics scores occurred in notes 14-19 on the text "Wake up now! Get up now!" (see Table 4.3). Participants tended to either earn points for the entire sub-phrase

(i.e. notes 14-19) or none at all. It was rare for a student to change dynamic levels in the middle of a sub-phrase. For example, three students in the infused-expression group and two students in the post-expression group earned the highest possible six points on their initial assessment. All other participants earned zero points on their initial assessment. In contrast, nine participants in each group earned all six points on the retention test. Most every participant earned five or more points for all other note groupings. These data indicate a key difference between a higher and lower dynamics subscore was when students remembered to sing the text "Wake up now! Get up now!" at a forte dynamic level.

There was no statistically significant interaction between the sequence group, number of rehearsals and dynamics subscores, F (1, 18) = 0.54, p = 0.48, partial η^2 = 0.03 (see Figure 4.3). These data suggest the number of rehearsals and sequence did not have a significant interaction on student's dynamics subscores. However, the main effect of the number of rehearsals showed a statistically significant difference on mean dynamics subscores between the initial assessment and the retention test, F (1, 18) = 50.65, $p < .00$, partial η^2 = 0.74. These results suggest with more rehearsals the choir's execution of dynamics improved. The main effect of sequence group did not show a statistically significant difference in mean dynamics subscores between intervention groups F (1, 18) = 1.89, p = 0.19, partial η^2 = 0.10. These data imply sequence groups did not influence the choir's ability to execute dynamics in performance.

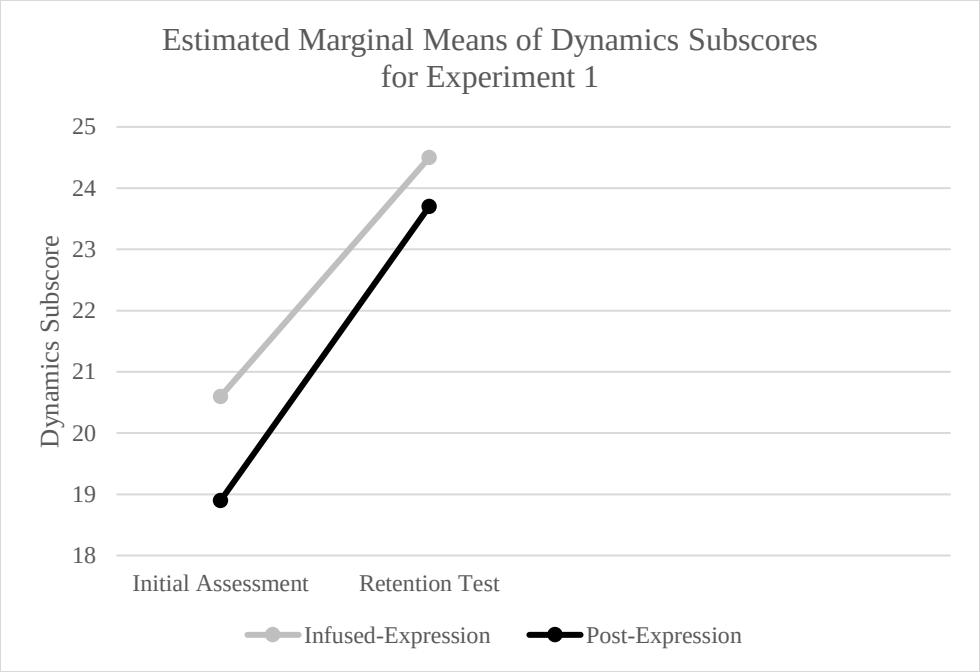

Figure 4.3. Estimated Marginal Means of Dynamics Subscores for Experiment 1

There were five outliers in the data as assessed by inspection of a boxplot for values greater than 1.5 box-lengths from the edge of the box. I ran statistics with and without the outliers resulting in similar results. Therefore, outliers remained in the data set. Dynamics subscores did not follow a normal distribution as assessed by Shapiro-Wilk's test ($p > 0.05$),. The post-expression group's initial assessment ($p = 0.03$), the infused-expression group's retention test ($p = 0.00$), and the post-expression group's retention test ($p = 0.00$), all fell under the Shapiro=Wilk's $p > .05$ threshold for normality. The infused-expression group's initial assessment ($p = 0.10$) was above the threshold. There was homogeneity of covariances as assessed by Box's test of equality of covariance matrices ($p = 0.13$). There was homogeneity of variances assessed by Levene's test of homogeneity of variance ($p > 0.05$) for the initial assessment ($p = 0.14$). However, the dynamic subscore for the retention test ($p = .04$) was below the ($p > .05$) threshold. Mauchly's test of sphericity was not required since there were only two within-subject factors.

Experiment 2

Experiment 2 expressivity scores.

Articulation and dynamics subscores were added together to create one expressivity score per participant. The average expressivity score for the infused-expression group's initial assessment was M = 48.27, SD = 2.69. The average expressivity score for the post-expression group's initial assessment was M = 33.70, SD = 1.83. The average expressivity score for the infused-expression group's retention test was M = 47.55, SD = 3.14. The average expressivity score for the post-expression group's retention test was M = 35.00, SD = 2.25. See Table 4.4 for expressivity scores for all experiment 2 participants.

Table 4.4

Experiment 2 Expressivity Scores

	Initial Assessment			Retention Test		
Student Number	**Articulation Subscore**	**Dynamics Subscore**	**Expressivity Score**	**Articulation Subscore**	**Dynamics Subscore**	**Expressivity Score**
Infused- Expression Group						
1	24	25	49	25	25	50
4	22	19	41	25	25	50
6	25	25	50	24	19	43
14	25	25	50	24	19	43
17	25	25	50	24	25	49
18	22	25	47	24	25	49
20	22	25	47	25	25	50
21	23	25	48	25	25	50
22	25	25	50	25	21	46
23	24	25	49	25	25	50
25	25	25	50	24	19	43
Mean	23.82	24.45	**48.27**	24.55	23.00	**47.55**
SD	1.33	1.81	**2.69**	0.52	2.83	**3.14**
Post-Expression Group						
3	14	19	33	16	19	35
5	12	19	33	19	19	38
8	15	19	34	15	21	36
9	13	19	32	18	19	38
10	14	19	33	13	19	32
11	14	19	33	18	19	37
13	13	19	32	13	19	32
15	14	19	33	16	19	35
16	18	19	37	12	19	33
19	18	19	37	15	19	34
Mean	14.50	19.00	**33.70**	15.50	19.20	**35.00**
SD	2.01	0.00	**1.83**	2.37	0.63	**2.25**

As in experiment 1, I conducted a two-way mixed ANOVA to see if there was an interaction between the sequence group and the number of rehearsals on the students' expressiveness score. I chose a two-way mixed ANOVA because it compares the mean differences

between groups that have been split on two independent variables. In this study, sequence group (between-subjects factor) and number of rehearsals (within-subjects factor) were the two independent variables. The dependent variable was expressiveness score.

There was not a statistically significant interaction between the sequence group, number of rehearsals and expressivity scores, F (1, 19) = 1.15, p = 0.30, partial η^2 = 0.06 (see Figure 4.4). This finding suggests the number of rehearsals and sequence group did not have a significant interaction on student's expressivity score. However, the main effect of sequence group did show a statistically significant difference in mean for expressivity scores, F (1, 19) = 19557.18, $p < 0.05$, partial η^2 = .90. These data imply sequence group did influence the student's ability to perform expressively during performance. Participants in the infused-expression sequence group outperformed the participants in the post-expression sequence group on both the initial assessment and the retention test. The main effect of the number of rehearsals did not show a statistically significant difference on expressivity scores between the initial assessment and the retention test, F (1, 19) = 1.15, p = 0.77, partial η^2 = 0.01. This finding suggests expressiveness does not necessarily improve with more rehearsals.

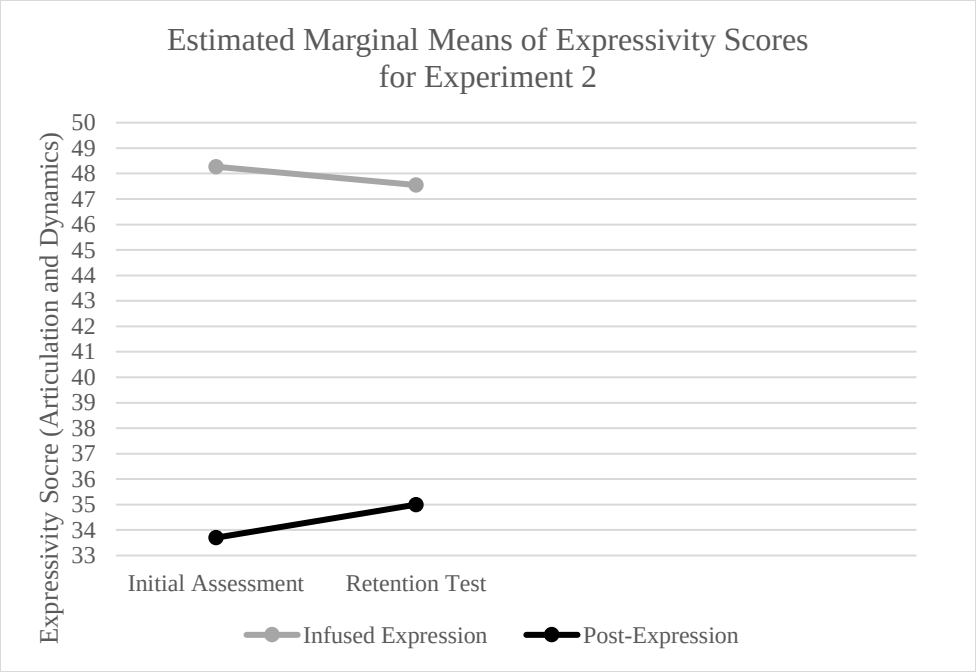

Figure 4.4. Estimated Marginal Means of Expressivity Scores for Experiment 2

There were three outliers in the data as assessed by inspection of a boxplot for values greater than 1.5 box-lengths from the edge of the box. I ran statistics both with and without the three outliers and received similar results. Therefore, I chose to leave the outliers in the data set. Expressivity scores did not follow a normal distribution as assessed by Shapiro-Wilk's test ($p >$ .05),. The infused-expression initial assessment ($p < 0.004$) and retention test ($p = 0.003$) as well as the post-expression initial assessment ($p = 0.001$) have p values smaller than the 0.05 Shapiro-Wilk standard. Only the post-expression retention test ($p = 0.39$) met the 0.05 Shapiro-Wilk standard. There was homogeneity of covariances as assessed by Box's test of equality of covariance matrices ($p = 0.76$). There was homogeneity of variances, as assessed by Levene's test of homogeneity of variance ($p > 0.05$). Neither the initial assessment ($p = 0.51$) or the retention assessment ($p = 0.09$) was significant at the 0.05 level on Levene's test. Mauchly's test of sphericity was not required since there were only two within-subject factors.

Experiment 2 articulations subscores.

I also investigated if there was an interaction between sequence group, number of rehearsals and articulation subscores. The average articulation subscore for the infused-expression group's initial assessment was M = 23.70, SD = 1.34. The average articulation subscore for the post-expression group's initial assessment was M = 14.50, SD = 2.01. The average articulation subscore for the infused-expression group's retention test was M = 24.60, SD = 0.52. The average articulation subscore for the post-expression group's retention test was M = 15.50, SD = 2.37. See Table 4.5 for experiment 2 individual participants' articulation subscores.

Table 4.5

Experiment 2 Articulation Subscores

	Initial Assessment					Retention Test				
Student Number	**Notes 1-7**	**Notes 8-13**	**Notes 14-19**	**Notes 20-25**	**Total**	**Notes 1-7**	**Notes 8-13**	**Notes 14-19**	**Notes 20-25**	**Total**
Highest Possible Score	**7**	**6**	**6**	**6**	**25**	**7**	**6**	**6**	**6**	**25**
Infused-Expression Group										
1	7	6	5	6	24	7	6	6	6	25
4	7	5	4	6	22	7	6	6	6	25
6	7	6	6	6	25	7	6	5	6	24
14	7	6	6	6	25	7	6	5	6	24
17	7	6	6	6	25	7	6	5	6	24
18	7	5	4	6	22	7	5	6	6	24
20	7	5	4	6	22	7	6	6	6	25
21	7	6	4	6	23	7	6	6	6	25
22	7	6	6	6	25	7	6	6	6	25
23	7	6	5	6	24	7	6	6	6	25
Mean	7.00	5.70	5.00	6.00	**23.70**	7.00	5.90	5.70	6.00	**24.60**
SD	0.00	0.48	0.94	0.00	**1.34**	0.00	0.32	0.48	0.00	**0.52**
Post-Expression Group										
3	1	6	6	1	14	1	6	6	3	16
5	1	6	6	1	12	1	6	6	6	19
8	2	6	6	1	15	1	6	6	2	15
9	1	6	6	0	13	1	6	6	6	18
10	1	6	6	1	14	1	6	4	2	13
11	0	6	6	2	14	1	6	5	6	18
13	1	6	6	0	13	1	6	5	1	13
15	1	6	6	1	14	1	6	6	3	16
16	1	6	5	6	18	1	6	6	1	12
19	6	6	5	1	18	1	6	6	2	15
Mean	1.50	6.00	5.80	1.40	**14.50**	1.00	6.00	5.60	3.20	**15.50**
SD	1.65	0.00	0.42	1.71	**2.01**	0.00	0.00	0.70	2.04	**2.37**

The infused-expression group scored high on all sub-phrases (see Table 4.5). However, the post-expression sequence group's lower articulation subscores occurred in notes 1-7 on the text

"Now all the woods are waking" and notes 20-25 on the text "before the dew is dry" (see Table 4.5). Participants tended to either earn the highest possible points a sub-phrase (i.e. notes 1-7) or no points at all. It was rare for a student to change articulations in the middle of a sub-phrase. For example, on the first seven notes only one student in the post-expression sequence group earned six points or higher on the initial assessment and zero students on the retention test. On the last six notes only one student in the post-expression sequence group earned six points or higher on the initial assessment and only three students on the retention test. Based on the data, the first seven notes and the last six notes were a key difference between sequence group scores.

There was no statistically significant interaction between the sequence group, number of rehearsals, and articulation subscores, F (1, 19) = .05, p = 0.83, partial η^2 = 0.00 (see Figure 4.5). This finding suggests the sequence group and number of rehearsals did not interact on the student's articulation subscores at a significant level. However, the main effect of sequence group did show a statistically significant difference in mean articulation subscores, F (1, 19) = 615.30, $p < 0.05$, partial η^2 = 0.99. These data imply that the order in which the participants learned the elements of a song influenced their ability to execute articulations in performance. Participants that learned the expressive elements alongside rhythm, pitch and text (infused-expression) were more successful at performing correct articulations on the initial assessment and retention test. The main effect of number of rehearsals did not show a statistically significant difference on articulation subscores between the initial assessment and the retention test, F (1, 19) = 1.85, p = 0.19, partial η^2 = 0.89. These data imply that despite repeating the sequence twice, participants did not improve their articulation execution from the initial assessment to the retention test.

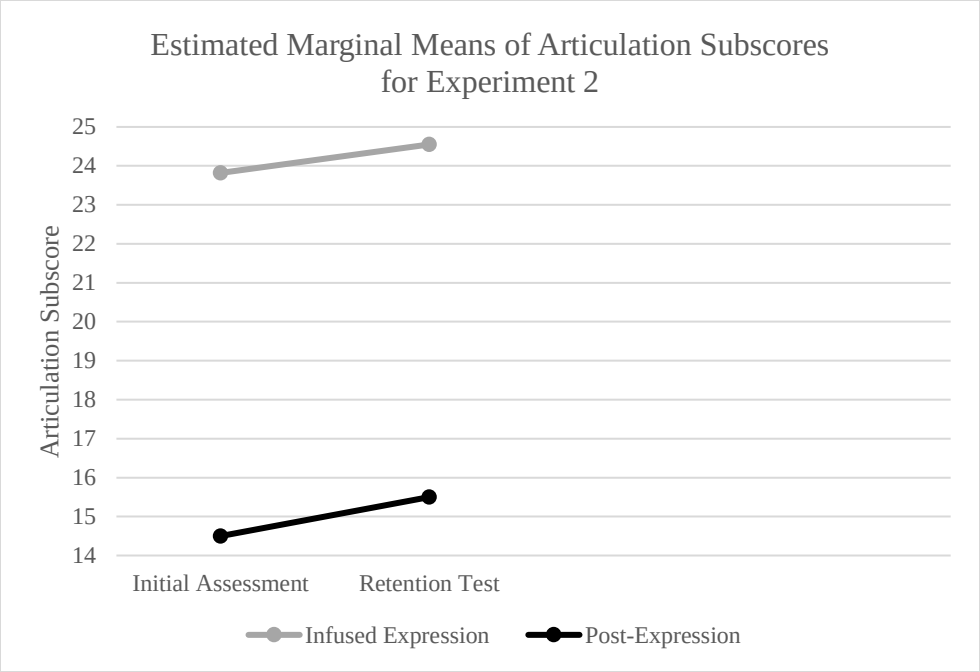

Figure 4.5. Estimated Marginal Means of Articulation Subscores for Experiment 2

There were no outliers in the data as assessed by inspection of a boxplot for values greater than 1.5 box-lengths from the edge of the box. Articulation subscores did not follow a normal distribution as assessed by Shapiro-Wilk's test ($p > .05$). The infused-expression group's initial assessment ($p = 0.01$), post-expression group's initial assessment ($p = 0.04$) and the infused-expression group's retention test ($p = 0.001$) fell below the Shapiro-Wilk's 0.05 standard. Only the post-expression group's retention test ($p = 0.57$) was above the 0.05 threshold. There was not homogeneity of covariances as assessed by Box's test of equality of covariance matrices ($p = 0.00$). There was homogeneity of variances, as assessed by Levene's test of homogeneity of variance ($p > 0.05$) for the initial assessment ($p = 0.40$). There was not homogeneity of variances, as assessed by Levene's test of homogeneity of variance ($p > 0.05$) for the retention assessment ($p = 0.02$). Mauchly's test of sphericity was not required since there were only two within-subject factors.

Experiment 2 dynamics subscores.

I also investigated if there was an interaction between sequence group, number of rehearsals, and dynamics subscores. The average dynamics subscore for the infused-expression group's initial assessment was $M = 24.40$, $SD = 1.90$. The average dynamics subscore for the post-expression group's initial assessment was $M = 19.00$, $SD = 0.00$. The average dynamics subscore for the infused-expression group's retention test was $M = 23.40$, $SD = 2.63$. The average dynamics subscore for the post-expression group's retention test was $M = 19.20$, $SD = 0.63$. See Table 4.6 for experiment 2 individual participants' dynamics subscores.

Table 4.6

Experiment 2 Dynamics Subscores

	Initial Assessment					Retention Test				
Student Number	**Notes 1-7**	**Notes 8-13**	**Notes 14-19**	**Notes 20-25**	**Total**	**Notes 1-7**	**Notes 8-13**	**Notes 14-19**	**Notes 20-25**	**Total**
Highest Possible Score	**7**	**6**	**6**	**6**	**25**	**7**	**6**	**6**	**6**	**25**
Infused-Expression Group										
1	7	6	6	6	25	7	6	6	6	25
4	7	6	0	6	19	7	6	6	6	25
6	7	6	6	6	25	7	6	0	6	19
14	7	6	6	6	25	7	6	6	0	19
17	7	6	6	6	25	7	6	6	6	25
18	7	6	6	6	25	7	6	6	6	25
20	7	6	6	6	25	7	6	6	6	25
21	7	6	6	6	25	7	6	6	6	25
22	7	6	6	6	25	7	6	6	2	21
23	7	6	6	6	25	7	6	6	6	25
Mean	7.00	6.00	5.40	6.00	**24.40**	7.00	6.00	5.40	5.00	**23.40**
SD	0.00	0.00	1.90	0.00	**1.90**	0.00	0.00	1.90	2.16	**2.63**
Post-Expression Group										
3	7	6	0	6	19	7	6	0	6	19
5	7	6	0	6	19	7	6	0	6	19
8	7	6	0	6	19	7	6	2	6	21
9	7	6	0	6	19	7	6	0	6	19
10	7	6	0	6	19	7	6	0	6	19
11	7	6	0	6	19	7	6	0	6	19
13	7	6	0	6	19	7	6	0	6	19
15	7	6	0	6	19	7	6	0	6	19
16	7	6	0	6	19	7	6	0	6	19
19	7	6	0	6	19	7	6	0	6	19
Mean	7.00	6.00	0.00	6.00	**19.00**	7.00	6.00	0.02	6.00	**19.20**
SD	0.00	0.00	0.00	0.00	**0.00**	0.00	0.00	0.63	0.00	**0.63**

The largest variance in dynamics scores occurred in notes 14-19 on the text "Wake up now! Get up now!" (see Table 4.6). Participants tended to either earn the highest possible points a sub-

phrase (i.e. notes 14-19) or no points at all. It was rare for a student to change dynamics in the middle of a sub-phrase. Once again, the infused-expression group earned high dynamics subscores on all sub-phrases. However, no students in the post-expression group earned a single point on notes 14-19 on their initial assessment and only one student earned two points or higher on notes 14-19 on the retention test. A key difference in participant's dynamics subscore between the infused-expression and post-expression sequence groups was the text "Wake up now! Get up now!"

There was no statistically significant interaction between the sequence group, number of rehearsals and dynamics subscores, F (1, 19) = 1.94, p = .18, partial η^2 = 0.09 (see Figure 4.6). This result suggests the sequence group and number of rehearsals did not interact on the student's dynamics subscores at as significant level. However, the main effect of sequence group did show a statistically significant difference in mean dynamics scores, F (1, 19) = 93.32, $p < 0.05$, partial η^2 = 0.83. These data imply that the sequence group in which a participant belonged to influenced their ability to execute on the initial assessment and retention test. Infused-expression group participants were more successful at performing correct dynamics on the initial assessment and retention test than the post-expression group participants. The main effect of the number of rehearsals did not show a statistically significant difference in mean dynamics subscores between the initial assessment and the retention test, F (1, 19) = 1.16, p =0.30, partial η^2 = 0.06. These data imply that repeating a song-learning sequence does not necessarily improve a choir's ability to execute dynamics correctly during performance.

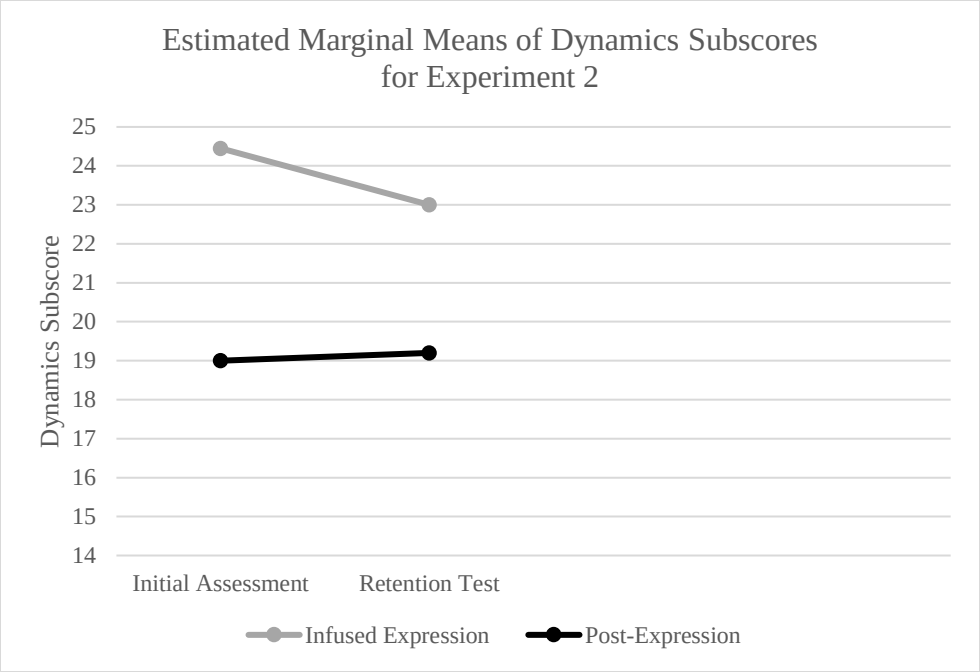

Figure 4.6. Estimated Marginal Means of Dynamics Subscores for Experiment 2

There were two outliers in the data as assessed by inspection of a boxplot for values greater than 1.5 box-lengths from the edge of the box. I ran statistics with and without the outliers with similar results. Therefore, outliers remained in the data set. Dynamics scores did not follow a normal distribution as assessed by Shapiro-Wilk's test ($p > .05$). The infused-expression initial assessment ($p = 0.001$), the post-expression initial assessment ($p = 0.001$), the infused-expression retention test ($p = 0.001$), and the post-expression retention test ($p = 0.001$) all fell under the Shapiro=Wilk's $p > .05$ threshold for normality. There was homogeneity of covariances as assessed by Box's test of equality of covariance matrices ($p = 0.13$). There was not homogeneity of variances, as assessed by Levene's test of homogeneity of variance ($p > .05$). The dynamics subscore for the initial assessment ($p = 0.04$) and retention test ($p < .00$) was below the ($p > .05$) threshold. Mauchly's test of sphericity was not required since there were only two within-subject factors.

Experiment 1 and Experiment 2

Feedback.

Retention test scores were very similar between experiment 1 and experiment 2. Therefore, to explore the effects of feedback between the two experiments I ran t-test comparing the experiment 1 (without feedback) and experiment 2 (with feedback) expressivity scores on the initial assessments. There was a significant difference in the expressivity scores for the infused-expression sequence groups on their initial assessment without feedback (experiment 1; $M = 40.00$, $SD = 3.89$) and with feedback (experiment 2; $M = 48.27$, $SD = 2.69$); $t\ (10) = -5.72$, $p = <.00$ (see Figure 4.7). These data reveal that feedback during an infused-expression sequence was beneficial for creating a more expressive performance. There was also a significant difference in the expressivity scores for the post-expression sequence groups on their initial assessment without feedback (experiment 1; $M = 38.90$, $SD = 4.77$) and with feedback (experiment 2; $M = 33.70$, $SD = 1.83$); $t\ (10) = 4.64$, $p = <.05$ (see Figure 4.7). However, these data suggest adding feedback to the post-expression sequence was not necessarily beneficial for improving expressivity during performance.

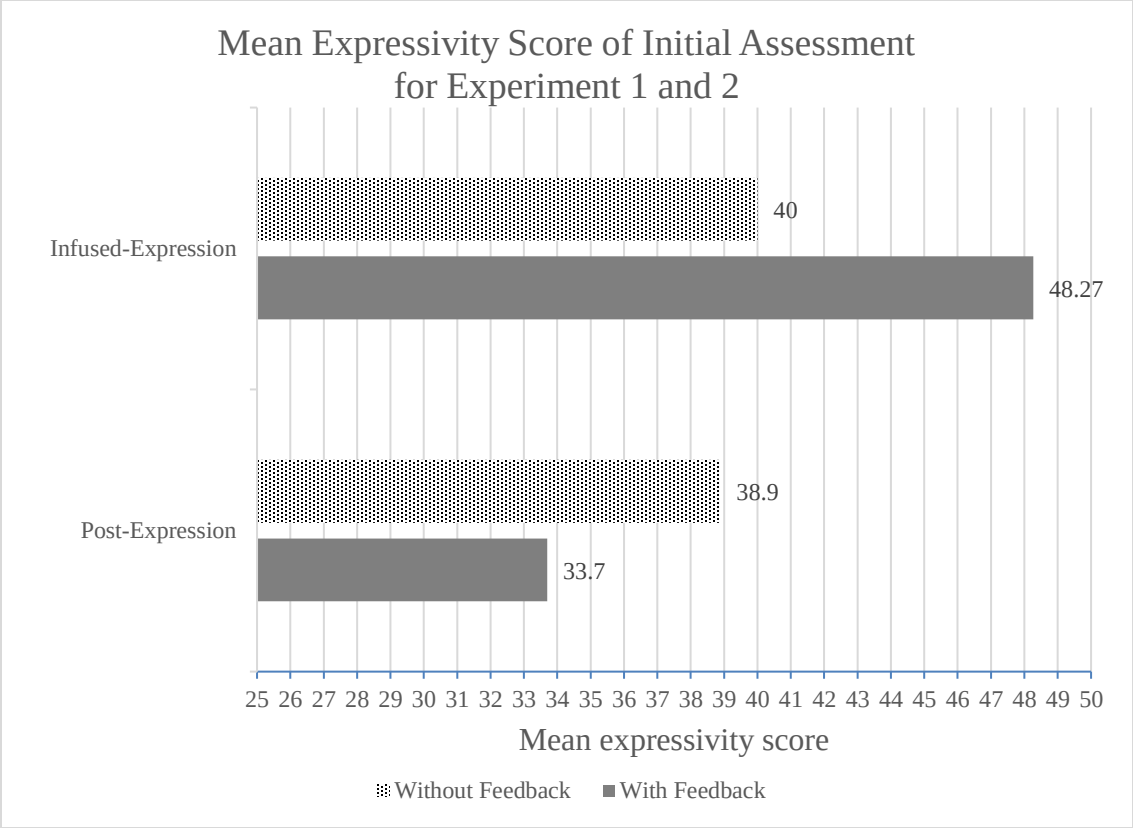

Figure 4.7. Mean Expressivity Score of Initial Assessment for Experiment 1 and 2

I also ran t-test comparing experiment 1 (without feedback) and experiment 2 (with feedback) articulation subscores on their initial assessment. There was a significant difference in the articulation subscores for the infused-expression sequence groups on their initial assessment without feedback (experiment 1; M = 19.40, SD = 2.50) and with feedback (experiment 2; M = 23.82, SD = 1.33); t (10) = -5.12, p = <.05 (see Figure 4.8). This result suggests adding feedback to an infused-expression sequence improves the execution of articulations in performance. There was also a significant difference in the articulation subscores for the post-expression sequence groups on their initial assessment without feedback (experiment 1; M = 20.10, SD = 2.64) and with feedback (experiment 2; M = 14.50, SD = 2.01); t (10) = 3.94, p = <.05 (see Figure 4.8). However,

these data imply adding feedback to a post-expression sequence was not necessarily beneficial in improving the execution of articulations during performance.

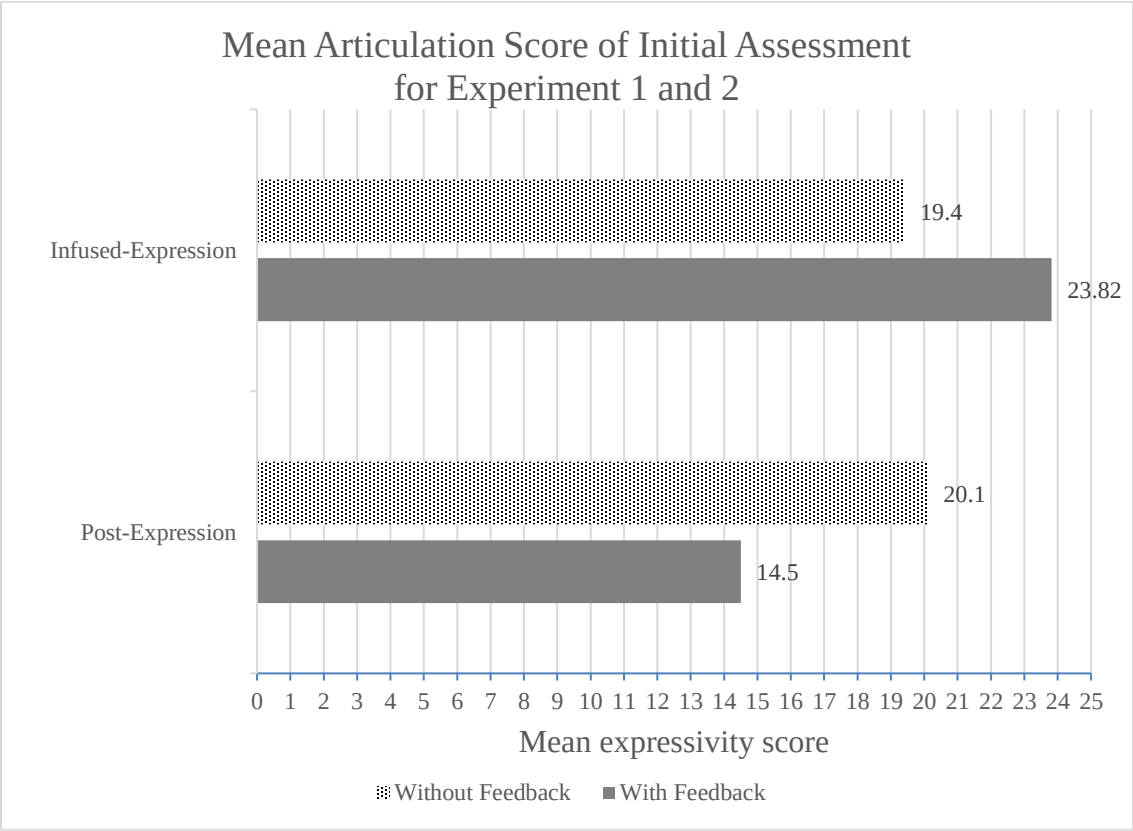

Figure 4.8. Mean Articulation Score of Initial Assessment for Experiment 1 and 2

I also ran t-test comparing experiment 1 (without feedback) and experiment 2 (with feedback) dynamics scores on their initial assessment. There was a significant difference in the articulation subscores for the infused-expression sequence groups on their initial assessment without feedback (experiment 1; M = 20.60, SD = 3.27) and with feedback (experiment 2; M = 24.45, SD = 1.81); t (10) = -3.38, p = <.05 (see Figure 4.9). This result suggests adding feedback to an infused-expression sequence improves the execution of dynamics. There was not a significant difference in the articulation subscores for the post-expression sequence groups on their initial

assessment without feedback (experiment 1; *M* = 18.90, *SD* = 2.60) and with feedback (experiment 2; *M* = 19.00, *SD* = 0.00); *t* (10) = -0.69 (see Figure 4.9). This finding suggests adding feedback to a post-expression sequence did not necessarily influence the execution of dynamics positively or negatively during performance.

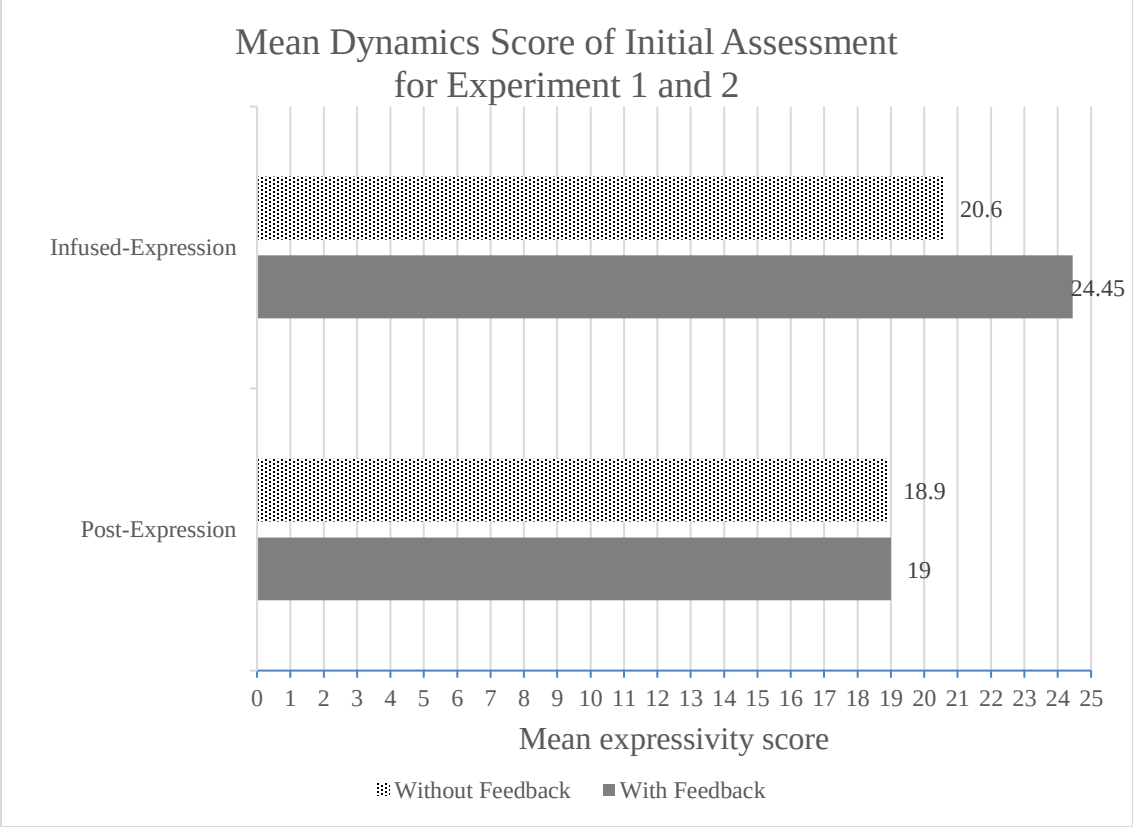

Figure 4.9. Mean Dynamics Score of Initial Assessment for Experiment 1 and 2

CHAPTER 5: DISCUSSION

Expression is a key element in choral performance (Leck and Jordan, 2009) and expressive performances tend to be more memorable (Mira & Schwanenflugel, 2013; Tillmann et al., 2013; Woody, 2000). When expressive elements are not present in a performance, the performance can feel stiff and robotic. Additionally, students enjoy performing expressively and want to improve their expressive skills (Woody, 2000). Pedagogues and researchers have suggested many strategies for improving expression in musical performance such as modeling, concrete instruction, and imagery (Leck & Jordan, 2009; Phillips, 2004; Woody, 2006a). However, there is disagreement and little research about when to incorporate these strategies to teach expression during the song-learning sequence.

Choral method textbooks (Collins 1993; Goetze et al., 2011; Leck & Jordan, 2009; Phillips, 2004; Robinson & Winold, 1976) do not always agree about when teachers should introduce expressive elements in a song-learning sequence. Some texts suggest focusing on the rhythm, pitch, and text first and then adding expressive elements (Collins 1993; Goetze et al., 2011; Phillips, 2004; Robinson & Winold, 1976). Others propose introducing expressive elements of a song alongside rhythm, pitch, and text (Jaques-Dalcroze, 1967; Leck & Jordan, 2009; Yarbrough, 2002).

I designed experiment 1 and experiment 2 to explore the effects of sequence, number of rehearsals and feedback on expressive performance. Experiment 1 of this study addressed the following questions:

1. Does the sequence in which a choir learns the elements of a song (i.e. rhythm, pitch, text, expression) influence the musical expression (articulation, dynamics) in their performance?

2. Does a choir's expressive performance improve with multiple rehearsals?

Experiment 2 addressed the questions above as well as:

3. Does feedback during a song-learning sequence influence the musical expression (articulation, dynamics) of a choral performance?

In the first experiment, singers learned a song in one of two ways. The infused-expression group's sequence introduced the song's expressive elements while learning the rhythm, pitch, and text. The post-expression group's sequence introduced the song's expressive elements after the singers had already learned the rhythm, pitch, and text. I added feedback statements to both sequences for experiment 2. Results of these experiments showed an infused-expression sequence with feedback was the most effective and efficient sequence. The students in the experiment 2 infused-expression sequence group earned the highest score in the shortest amount of rehearsals and retained their performance level through the retention test.

Research Question 1

Does the sequence in which a choir learns the elements of a song (i.e. rhythm, pitch, text, expression) influence the musical expression (articulation, dynamics) in their performance? In experiment 1, both sequences appeared to be effective strategies when teaching students, the expressive elements of a song (see Table 4.1). This finding supports both an infused-expression sequence as recommended by Jaques-Dalcroze, 1967; Leck and Jordan, 2009; and Yarbrough, 2002, and a post-expression sequence as recommended by Collins 1993; Goetze et al., 2011; Phillips, 2004; and Robinson and Winold, 1976. Results from experiment 2 indicated that an infused-expression sequence is more effective at teaching the expressive elements of a song than a post-expression sequence (see Table 4.4). The infused-expression group outperformed the post-

expression group on both the initial assessment and retention test. This result suggests practicing the expressive elements of a song earlier and more often improve expressivity during performance. This finding supports an infused-expression sequence as recommended by Jaques-Dalcroze, 1967; Leck and Jordan, 2009; and Yarbrough, 2002.

The participants from the infused-expression group in experiment 2 had the highest mean expressivity score of any group in either experiment (see Table 4.1 and Table 4.4). It was several points higher than any other sequence group on the initial assessment. The expressivity score for both the infused-expression group and post-expression group from experiment 1 came close to the experiment 2 infused-expression group, but only on their retention test. This result suggests an infused-expression sequence with feedback statements was as effective in one rehearsal session as the experiment 1 infused-expression and post-expression sequence were in two rehearsal sessions.

Some students struggled to accurately imitate the model. From rehearsal experience with these students, I know the students understood the concepts (legato, staccato, forte, piano) presented in the study. However, despite being given explicit instructions and hearing an accurate model, students simply did not perform the melody with correct articulation and dynamics. In their head, they might have felt like their articulations and dynamics were contrasting and evident, but it did not come across in their performance. In a typical rehearsal, I would have given feedback to the students. If the dynamics were not evident, I would have asked for more contrasting dynamics. If the articulations were not correct, I would have reminded them of what I expected. I did not give any feedback during the sequences in experiment 1. Students had to self-determine if they were matching the model or not. Lack of feedback may have influenced the sequence group results of experiment 1.

Student engagement.

After observing video recordings of all four teaching sequences, I noticed some difference in engagement levels. Generally speaking, students in the infused-expression groups appeared more engaged than students in the post-expression sequence groups. For example, participant number 14 was in the experiment 2 infused-expression sequence group. In the video, I observed her tracking the notation with her finger while the choir modeled each phrase. Participant 14 would also flick her fingers while singing staccato and make a smooth type motion while singing legato section. These motions are similar to kinesthetic reinforcements that I have used with all the participants in regular choral rehearsals. These kinesthetic movements may have helped participant 14 remember and perform the expressive elements more accurately. On the other hand, I did not notice anyone in the post-expression group using kinesthetic reinforcements. For example, participant number 9 was in the experiment 2 post-expression group. While the choir modeled each phrase, I observed participant 9 staring off at the wall. While singing, participant 9 had a slouched posture, and her mouth barely moved. These two participants represent extremes of each group's engagement level but do give an idea of on and off task behaviors. Engagement level may have differed because students in the infused-expression sequence were asked to perform more than one task at a time (i.e. rhythm plus expression). Performing more than one task creates a higher challenge environment which can be motivating for some students. The students in the post-expression group typically performed one task a time (i.e. only rhythm) with multiple repetitions possibly resulting in boredom.

However, some students feel overwhelmed when attempting to learn rhythms, pitch or text, and expression simultaneously. I did notice two students (participants 4 and 20) in the experiment 1 infused-expression group who appeared to be frustrated during the sequence. They would squint

their eyes and shake their head slightly. Frustration could possibly have come from not being able to grasp the rhythm and expressive elements at the same time. However, student 4's expressivity score increased from a 43 on the initial assessment to a 48 on the retention test and student 20's expressivity score increased from a 39 on the initial assessment to a 48 on the retention test.

Based on observation, students in the infused-expression group rarely performed with expression during their first attempt at a phrase. Students were asked to repeat every phrase at least twice. Often, the infused-expression group would initially perform the phrase without expression and only add expressive elements once the rhythm, pitch, or text was secure. Different students achieved this security level at different rates and therefore added expression at different times. The post-expression group was more secure with the melody before it was asked to add expressive elements. Post-expression participants seemed more able and willing to add expressive elements immediately when asked. This difference may have been caused by the fact that the post-expression group had experienced more repetitions of the rhythm, pitches, and text before being asked to add expressive elements. All of these observations support the Teaching-Learning Zone created by Mariani (1997; See Figure 5.1)

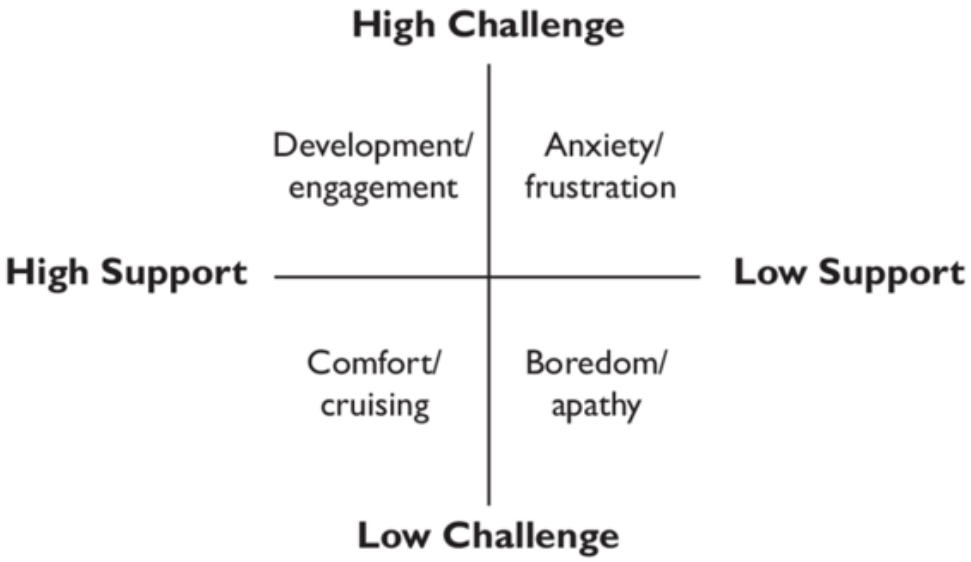

Figure 5.1. Teaching-learning zones based on Mariani's (1997) teaching style framework

Rehearsal time.

A song-learning sequence that gets the same results in less time is a great benefit to choral educators. The infused-expression sequences were shorter than the post-expression sequences. For example, in experiment 1 the infused-expression sequence lasted 16 minutes and 40 seconds while the post-expression sequence lasted 19 minutes and 12 seconds, a difference of 2 minutes and 32 seconds. For experiment 2, the infused-expression sequence lasted 18 minutes and 55 seconds while the post-expression sequence lasted 20 minutes and 40 seconds, a difference of 1 minute and 45 seconds. The post-expression sequences were longer because they included a fourth section that introduced the expressive elements to the students. The infused-expression sequences did not include section four because the expressive elements had already been introduced along the way. These sequence length differences may be small, but their practical significance may have a great impact on choral rehearsals, especially when compounded across many songs and rehearsals.

Research Question 2

Does a choir's expressive performance improve with multiple rehearsals? In experiment 1, having multiple rehearsals improved students' abilities to perform expressively. The experiment 1 infused-expression group's mean score increased by 7.30 points from the initial assessment to the retention test. The experiment 1 post-expression group's mean score increased by 8.90 points from the initial assessment to the retention test. This finding suggests that having more than one rehearsal will increase expressivity in a choral performance.

However, in experiment 2, the number of rehearsals did not have a significant effect on students' abilities to sing with expression. The infused-expression group's mean score decreased by 0.72 points from the initial assessment to the retention test. However, 10 of the 11 participants scored a 47 or higher on their initial assessment. The highest score possible was a 50. Therefore creating a ceiling effect where experiment 2 infused-expression students had very little room to improve on the retention test.

The post-expression group's mean score only increased by 1.3 points from the initial assessment to the retention test. I was surprised multiple rehearsals did not improve the experiment 2 post-expression sequence group's scores. Their scores were much lower than the experiment 1 post-expression group and unexpectedly did not improve on the retention test. I did have to exclude six participant's data in experiment 2 due to technology issues or not completing the at home practice session. Groups were balanced based on choir experience and choir audition scores. I ran a t-test on the audition scores excluding these participants and found the experiment 2 post-expression group had a significantly lower choir audition score than the experiment 2 infused-expression group. Therefore, the groups were no longer balanced on ability level, but only on

number of years in choir. The infused-expression groups ceiling effect and the difference in choir audition scores could explain why multiple rehearsals did not improve the results in experiment 2.

Research Question 3

Does feedback during a song-learning sequence influence the musical expression (articulation, dynamics) of a choral performance? When comparing experiment 1 (without feedback) to experiment 2 (with feedback) the addition of feedback statements significantly improved participants' expressivity, articulation and dynamics scores in the infused-expression sequence group. However, feedback showed to lower expressivity and articulation subscores significantly in a post-expression sequence. There was no significant effect on the execution of dynamics in the experiment 2 post-expression sequence. These results both support and disagree with previous research (Dunn, 1997; Price, 1983).

According to the data, the combination of an infused-expression treatment with feedback statements appeared to be the most effective sequence option. The results suggest feedback statements sped up the learning process, supporting the findings of earlier research (Dunn, 1997; Price, 1983). Feedback statement increased the number of times a student's attention was drawn to a specific item and therefore raised the awareness of that item. This raised awareness was especially evident in the experiment 2 infused-expression group whose attention was drawn to the expressive elements nine times through feedback statements. This heightened awareness seemed to help students remember and perform those items more accurately. In contrast, the experiment 2 post-expression group only experienced three feedback statements towards the end of the sequence. Therefore, the high score for the experiment 2 infused-expression group may be a result of repeatedly drawing the students' attention to the expressive elements through feedback

statements rather than the sequence itself. Additionally, introducing expressive elements early in a song-learning sequence gave the students more repetitions to practice expressive elements and more opportunities for the teacher to draw the students' attention to specific expressive elements.

Since the addition of feedback statements increased the experiment 2 infused-expression group's score as compared to experiment 1, I would have expected the experiment 2 post-expression group's score to be higher than the experiment 1 post-expression group as well. However, as mentioned earlier, excluding six participant's data in experiment 2 may have caused the sequence groups to be unbalanced. Participants were no longer balanced between groups on singing ability, but only on number of years in choir, possibly influencing results.

The differences in the age and type of choral singer between the two experiments may have affected the feedback results as well. The students in experiment 1 were approximately a year and a half older than the students in experiment 2 (See Table 3.2 and Table 3.5). Older students tend to be more mature and able to focus for a longer period. This maturity level may have allowed them to grasp and perform expressive elements more effectively in a shorter amount of time. In experiment 1, students had more choral experience than the students did in experiment 2 (see Table 3.2 and Table 3.5). Broomhead (2001) and Marchand (1975) found students with more music experience were more likely to be expressive in their own performance. This difference might have allowed for students in experiment 1 to be more expressive despite their sequence group. The students in experiment 1 were a part of a community choir children's program, whereas experiment 2 students were part of an afterschool elementary school chorus. I teach both programs, therefore instruction is similar in both situations. However, based on observation, students in the community children's choir program are more committed to growing and developing as musicians. This increased commitment is evident by the fact the parents pay annual tuition and travel farther to

attend rehearsals. Students in the elementary afterschool choral program attend rehearsals at their home school and only pay a small annual donation. The possibly stronger commitment to musicianship of the participants of experiment 1 might have influenced their ability to sing expressively despite receiving feedback.

Assessment

I was interested in finding out if the scores of the group recordings were similar to the mean of the individual recordings. I scored the group recordings in the same manner as the individual recordings. For the group recording, I used the audio from each group's treatment session videos. This audio contained all singers performing at the same time, even those participants who were excluded for various reasons. Group recording scores mirrored mean individual scores. For example, the experiment 1 mean expressivity score for the post-expression initial assessment individual recordings was M = 38.90 (SD = 4.77) and the group recording score on the same test was 38.00. The experiment 2 mean expressivity score for the infused-expression retention test individual recordings was M = 47.55 (SD = 3.14) and the group recording score on the same test was 49.00. These scores suggest recording and scoring individuals in a group setting yields similar results to recording and scoring the group as a whole. However, individual recordings provide more personalized data on students. For example, participant six earned 19 dynamics points on the retention test. However, the majority of the participant six's sequence group earned a 25. I only know participant six struggled with dynamics because I listened to the individual recording. This lack of dynamic expression from participant six was hidden in the group recording.

Students in this study experienced the song-acquisition sequence in a group setting. Participants recorded themselves individually while singing with other choir members. How much

or little other participants influenced singers was not accounted for in this study. However, very few participants changed their articulations or dynamics mid-phrase as you would expect if they were being influenced by those around them (see Table 4.2, Table 4.3, Table 4.5, and Table 4.6). Furthermore, I chose to have students rehearse and assessed in a group setting because I was more interested in how students behaved in a typical choral rehearsal than as a solo singer. Results might be different if students learned the sequence individually and were recorded without others singing with them.

In addition, many data sets did not meet Shapiro-Wilk's test for normality. Shapiro-Wilk's test assesses data to see if it follows a normal distribution curve. Data in these two experiments tended to be grouped. Participants either earned the highest possible points for a sub-phrase (i.e. notes 1-7) or no points at all. It was rare for a student to change articulations or dynamics in the middle of a sub-phrase and earn partial credit. These groupings of data could explain why the Shapiro-Wilk's test for normality was not met.

Future Research

The at home practice session reduced the numbers of an already small sample size (experiment 1: $N = 20$, experiment 2: $N = 21$). Participants were removed from each experiment because they did not complete the at home practice session. This extra practice session eliminated approximately 20% of the total participants. Initially, I decided to add the at home practice because I wouldn't expect students to learn and perform a song in one rehearsal. However, the average scores of the participants who did not complete the at home practice were only slightly lower than those who did complete the at home practice session. For example, the average experiment 1 expressivity retention test score of those who did not complete the at home practice session was

M = 46.60 (*SD* = 2.51) while those who did complete the at home practice session had an average expressivity score of *M* = 47.45 (*SD* = 2.21). The average experiment 2 expressivity retention test score of those who did not complete the at home practice was *M* = 40.20 (*SD* = 3.63) while those who did complete the at home practice session had an average expressivity score of *M* = 41.57 (*SD* = 6.96). Future replications could consider removing the mid-week sequence review. Furthermore, having a small population makes various statistics less reliable than with a large population. Future studies could replicate the study with a larger population.

All participants in this study were current or former members of a choir I direct. Therefore, many of the students had previously experienced a version of an infused-expression sequence during rehearsals on other pieces of music. This population characteristic may or may not have influenced the results. Future studies could replicate the study with a more varied population who have directors other than the researcher.

Assessment criteria for experiment 1 and experiment 2 included articulation and dynamics. There are many other musical characteristics that help create an expressive performance such as phrasing, various articulations, beat stress, facial expressions, and body expression (Leck & Jordan, 2009). Future studies could explore how learning sequences effect other expressive criteria besides articulation and dynamics. I am also curious to explore how song-learning sequences effect student engagement levels and furthermore how engagement levels during song-learning sequences influence performance outcomes.

Conclusion

In conclusion, the results from this study show an infused-expression sequence combined with feedback was the most efficient and effective process for teaching students the expressive

elements of a song. Choral pedagogy textbooks differed on when to introduce expressive elements in a song-learning sequence. However, according to these results the infused-expression sequence with feedback produced the highest mean expressivity score in the shortest amount of time. Infused-expression with feedback was an effective sequence because it drew the students' attention to the expressive details of the song repeatedly. Focusing on the expressive elements of a song more often gives the students additional opportunities to practice and receive feedback regarding expressive elements. This result may be why Shaw and Jaques-Dalcroze introduced expressive elements early and often in their song-learning sequences. Considering these findings, teachers should evaluate their song-learning sequences and explore the effects of introducing expressive elements early in the learning process.

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APPENDICES

Appendix A: Script for Vocal Warm-Up

"Make sure you're sitting or standing up nice and tall"

"Go ahead and roll your shoulders back three times. 1…2….3…."

"Roll them forward three times. 1…2….3…"

"Shake out your arms. Shake out your legs."

"Chin down to your chest slowly go to one side and back the other way"

"Chin down slowly raise your head up."

"Massage your forehead with your hands."

"Massage your temples around your eyes."

"Massages your cheeks."

"Stretch."

"Take a nice deep breath. Fill up all the way to your belt."

"Breathe in 2…3….4… and out tssssss"

"Do it again breath in……and out…."

"This time breath in for 8 - 1…2…3...4...5…6...7...8..."

"And out - 1…2…3...4...5…6...7...8..."

"Once more breathe in this time fill up with air to your knees - 1…2…3...4...5…6...7...8..."

"And out - 1…2…3...4...5…6...7...8..."

"What I want you to do is sing: [modeled Figure A.1 with voice]" See Figure A.1.

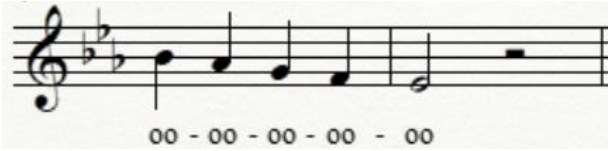

Figure A.1. Vocal Warm-Up Number One

I started the warm-up in E flat major. I repeated it eight times ascending by a half step each time. Between each repetition, I added reminders to breathe. I played the piano during the warm-up to aid singers.

"Let's do a different one" [modeled Figure A.2 with voice twice] See Figure A.2.

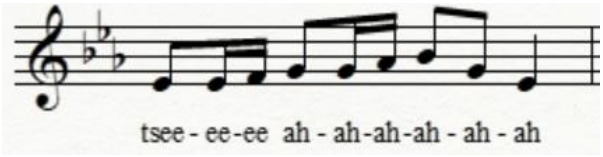

Figure A.2. Vocal Warm-Up Number Two

I started warm-up number two in E flat major. I repeated the pattern 10 times with reminders to breathe and relax in between repetitions. I played the piano during the warm-up to support singers.

"One last thing – please sing a major scale. We are starting at the top of the scale on high do." [modeled do', ti, la, so in D major]

Singers sing descending and ascending scale in D major. I played the piano to support singers.

Appendix B: Script for Training Session

"Look at *Twinkle, Twinkle Little Star*. Echo the rhythm on Ta."

[choir models the rhythm on ta with no expression]

"Go" [participants echo rhythm on Ta]

"Take a few second to figure out the solfége to *Twinkle, Twinkle, Little Star*. The song starts on do."

[tonic chord is played, starting pitch is played, 20 seconds of silence is given]

[choir models melody on solfége]

"Sing" [participants echo]

[choir models melody on solfége again]

"Sing" [participants echo again]

"Echo the words"

[choir models melody on words]

"Sing" [participants echo]

Appendix C: Script for Infused-Expression Sequence for Experiment 1

"The purpose of this sequence is to learn the rhythm, pitch, and text of this melody and perform it with musical expression.

Look at the notation for the song *Now All the Woods are Waking*.

Notice that the top line and the second part of the bottom line is marked piano or quiet with a *p*.

The words 'Wake up now get up now' is the only section marked forte or loud with an *f*.

Also notice that the text 'Now all the woods are waking' and 'before the dew is dry' is marked staccato or short as shown by a dot underneath each note.

The text 'the sun is riding high and wake up now get up now' is marked legato or smooth as shown by an arched line drawn over the phrase.

Listen to the choir perform *Now All the Woods are Waking*."

[choir models whole melody on text with expression]

Section 1 - Rhythm

"Echo the rhythm of phrase 1 with expression"

[choir models phrase one on rhythm syllables (ta), with expression]

"Sing" [participants echo]

[choir models phrase one on rhythm syllables (ta, ti-ti), with expression again]

"Sing" [participants echo again]

"Echo the rhythm of phrase two with expression"

[choir models phrase two on rhythm syllables (ta, ti-ti), with expression]

"Sing" [participants echo]

[choir models phrase two on rhythm syllables (ta, ti-ti), with expression again]

“Sing” [participants echo again]

“Echo the rhythm of the whole song with expression”

[choir models whole song on rhythm syllables (ta, ti-ti), with expression]

“Sing” [participants echo]

[choir models whole song on rhythm syllables (ta, ti-ti), with expression again]

“Sing” [participants echo again]

Section 2 – Pitch

“Take 30 seconds and figure out the solfége to line number one. The first two pitches are so, do.”

[piano plays tonic chord and first two pitches]

“You may begin” [30 seconds of silence]

“Echo the solfége of phrase 1 with expression”

[choir models phrase one on solfége, with expression]

“Sing” [participants echo]

[choir models phrase one on solfége, with expression again]

“Sing” [participants echo again]

[choir models phrase one on solfége, with expression again]

“Sing” [participants echo again]

[choir models phrase one on solfége, with expression again]

“Sing” [participants echo again]

“Take 30 seconds and figure out the solfége to phrase two. The first three pitches are ti do’ so.”

[30 seconds of silence]

“Echo the solfége of phrase two with expression”

[choir models phrase two on solfége, with expression]

“Sing” [participants echo]

[choir models phrase two on solfége, with expression again]

“Sing” [participants echo again]

[choir models phrase two on solfége, with expression again]

“Sing” [participants echo again]

[choir models phrase two on solfége, with expression again]

“Sing” [participants echo again]

“Echo the solfége of the whole song with expression”

[choir models whole song on solfége, with expression]

“Sing” [participants echo]

[choir models whole song on solfége, with expression again]

“Sing” [participants echo again]

Section 3 – Text

“Echo the text of phrase one with expression”

[choir models phrase one on text, with expression]

“Sing” [participants echo]

[choir models phrase one on text, with expression again]

“Sing” [participants echo again]

“Echo the text of phrase two with expression”

[choir models phrase two on text, with expression]

“Sing” [participants echo]

[choir models phrase two on text, with expression again]

“Sing” [participants echo again]

“Echo the text of the whole song with expression”

[choir models the whole song on text, with expression]

“Sing” [participants echo]

[choir models the whole song on text, with expression again]

“Sing” [participants echo again]

Section 4 – Expression

Section four is where expressive elements are introduced in the post-expression sequence. Since expressive elements have already been introduced in the infused-expression sequence section four is not needed.

Section 5 - Recording

“Perform the song with musical expression.”

[Piano plays the chords I, IV, I, V7, I in D major, and then the first two starting pitches.]

"1, 2, sing”.

For recording and uploading directions see Figures A.3 and A.4.

Select Voice Recorder

Select the microphone icon
at the bottom of the screen

Press the red REC button to record
(green light tells you it's recording)

Stop to stop

Figure A.3. Recording Directions

How to upload your recording to Dropbox:

Select Recording
Press Pause
Select upload in top corner

Tap: Share
--> Share audio

--> Import with Dropbox
--> choose a different folder
--> Group/Date
--> choose
--> save

Figure A.4. Recording Uploading Directions

Appendix D: Script for Post-Expression Sequence for Experiment 1

"The purpose of this sequence is to learn the rhythm, pitch, and text of this melody and perform it with musical expression.

Look at the notation for the song *Now All the Woods are Waking*.

Listen to the choir perform *Now All the Woods are Waking*."

[choir models whole melody on text with expression]

Section 1 - Rhythm

"Echo the rhythm of phrase 1"

[choir models phrase one on rhythm syllables (ta), with no expression]

"Sing" [participants echo]

[choir models phrase one on rhythm syllables (ta, ti-ti), with no expression again]

"Sing" [participants echo again]

"Echo the rhythm of phrase two"

[choir models phrase two on rhythm syllables (ta, ti-ti), with no expression]

"Sing" [participants echo]

[choir models phrase two on rhythm syllables (ta, ti-ti), with no expression again]

"Sing" [participants echo again]

"Echo the rhythm of the whole song"

[choir models whole song on rhythm syllables (ta, ti-ti), with no expression]

"Sing" [participants echo]

[choir models whole song on rhythm syllables (ta, ti-ti), with no expression again]

"Sing" [participants echo again]

Section 2 – Pitch

“Take 30 seconds and figure out the solfége to line number one. The first two pitches are so, do.”

[piano plays tonic chord and first two pitches]

“You may begin” [30 seconds of silence]

“Echo the solfége of phrase one”

[choir models phrase one on solfége, with no expression]

“Sing” [participants echo]

[choir models phrase one on solfége, with no expression again]

“Sing” [participants echo again]

[choir models phrase one on solfége, with no expression again]

“Sing” [participants echo again]

[choir models phrase one on solfége, with no expression again]

“Sing” [participants echo again]

“Take 30 seconds and figure out the solfége to phrase two. The first three pitches are ti do’ so.”

[30 seconds of silence]

“Echo the solfége of phrase two”

[choir models phrase two on solfége, with no expression]

“Sing” [participants echo]

[choir models phrase two on solfége, with no expression again]

“Sing” [participants echo again]

[choir models phrase two on solfége, with no expression again]

“Sing” [participants echo again]

[choir models phrase two on solfége, with no expression again]

“Sing” [participants echo again]

“Echo the solfége of the whole song”

[choir models whole song on solfége, with no expression]

“Sing” [participants echo]

[choir models whole song on solfége, with no expression again]

“Sing” [participants echo again]

Section 3 – Text

“Echo the text of phrase one”

[choir models phrase one on text, with no expression]

“Sing” [participants echo]

[choir models phrase one on text, with no expression again]

“Sing” [participants echo again]

“Echo the text of phrase two”

[choir models phrase two on text, with no expression]

“Sing” [participants echo]

[choir models phrase two on text, with no expression again]

“Sing” [participants echo again]

“Echo the text of the whole song”

[choir models the whole song on text, with no expression]

“Sing” [participants echo]

[choir models the whole song on text, with no expression again]

“Sing” [participants echo again]

Section 4 – Expression

“Notice that the top line and the second part of the bottom line is marked piano or quiet with a *p*. The words ‘wake up now get up now’ is the only section marked forte or loud with an *f*.
Also notice that the text ‘Now all the woods are waking’ and ‘before the dew is dry’ is marked staccato or short as shown by a dot underneath each note.
The text ‘the sun is riding high and wake up now get up now’ is marked legato or smooth as shown by an arched line drawn over the phrase.
Notice that phrases one, two and four are marked piano or quiet while phrase three is marked forte or loud. Notice that phrases one and four are marked staccato or short while phrases two and three are marked legato or smooth. Echo the staccato, legato, piano and forte of each phrase.”

“Echo the text of phrase one with expression”

[choir models phrase one on text, with expression]

“Sing” [participants echo]

[choir models phrase one on text, with expression again]

“Sing” [participants echo again]

“Echo the text of phrase two with expression”

[choir models phrase two on text, with expression]

“Sing” [participants echo]

[choir models phrase two on text, with expression again]

“Sing” [participants echo again]

“Echo the text of the whole song with expression”

[choir models the whole song on text, with expression]

“Sing” [participants echo]

[choir models the whole song on text, with expression again]

“Sing” [participants echo again]

Section 5 - Recording

“Perform the song with musical expression.”

[Piano plays the chords I, IV, I, V7, I in D major, and then the first two starting pitches.]

"1, 2, sing”.

For recording and uploading directions see Figures A.3 and A.4.

Appendix E: Script for Infused-Expression Sequence with Feedback for Experiment 2

(Changes from the experiment 1 infused-expression sequence are italicized)

"The purpose of this sequence is to learn the rhythm, pitch, and text of this melody and perform it with musical expression.

Look at the music notation for the song for *Now All the Woods are Waking*.

Notice that the top line and the second part of the bottom line is marked piano or quiet with a *p*.

The words 'Wake up now get up now' is the only section marked forte or loud with an *f*.

For Example, the beginning of the song should be sung quiet like this: "now all the woods are waking the sun is riding high" then forte "wake up now get up now" then piano or quiet "before the dew is dry"

Also notice that the text 'Now all the woods are waking' and 'before the dew is dry' is marked staccato or short as shown by a dot underneath each note.

The text 'the sun is riding high and wake up now get up now' is marked legato or smooth as shown by an arched line drawn over the phrase.

For example, the beginning of the song should be separated like this: "now all the woods are waking" then legato or smooth "the sun is riding high wake up now get up now" then staccato and separated "before the dew is dry"

Listen to the choir perform *Now All the Woods are Waking*. *Pay attention to the details and try to imitate the way they sing it."*

[choir models whole melody on text with expression]

Section 1 - Rhythm

"Echo the rhythm of phrase one with expression"

[choir models phrase one on rhythm syllables (ta), with expression]

"Go" [participants echo]

"Can you make the first part of the phrase separated and second part of the phrase smooth like the model?

[choir models phrase one on rhythm syllables (ta, ti-ti), with expression again]

"Go" [participants echo again]

"Echo the rhythm of phrase two with expression"

[choir models phrase two on rhythm syllables (ta, ti-ti), with expression]

"Go" [participants echo]

"Can you make the forte section louder and the piano section quieter?"

[choir models phrase two on rhythm syllables (ta, ti-ti), with expression again]

"Go" [participants echo again]

"Echo the rhythm of the whole song with expression"

[choir models whole song on rhythm syllables (ta, ti-ti), with expression]

"Go" [participants echo]

"I want to hear a big change in volume on the words 'wake up now get up now.'"

[choir models whole song on rhythm syllables (ta, ti-ti), with expression again]

"Go" [participants echo again]

Section 2 – Pitch

"Take 30 seconds and figure out the solfége to line number one. The first two pitches are so, do."

[piano plays tonic chord and first two pitches]

“You may begin” [30 seconds of silence]

“Echo the solfége of phrase one with expression”

[choir models phrase one on solfége, with expression]

“Sing” [participants echo]

[choir models phrase one on solfége, with expression again]

“Sing” [participants echo again]

“Can you make the first part of the phrase separated and second part of the phrase smooth like the model?”

[choir models phrase one on solfége, with expression again]

“Sing” [participants echo again]

[choir models phrase one on solfége, with expression again]

“Sing” [participants echo again]

“Take 30 seconds and figure out the solfége to phrase two. The first three pitches are ti do’ so.”

[30 seconds of silence]

“Echo the solfége of phrase two with expression”

[choir models phrase two on solfége, with expression]

“Sing” [participants echo]

[choir models phrase two on solfége, with expression again]

“Sing” [participants echo again]

“Can you make the forte section louder and the piano section quieter?”

[choir models phrase two on solfége, with expression again]

“Sing” [participants echo again]

[choir models phrase two on solfége, with expression again]

“Sing” [participants echo again]

“Echo the solfége of the whole song with expression”

[choir models whole song on solfége, with expression]

“Sing” [participants echo]

“I want to hear a big change in volume on the words ‘wake up now get up now.’”

[choir models whole song on solfége, with expression again]

“Sing” [participants echo again]

Section 3 – Text

“Echo the text of phrase one with expression”

[choir models phrase one on text, with expression]

“Sing” [participants echo]

“Can you make the first part of the phrase separated and second part of the phrase smooth like the model?”

[choir models phrase one on text, with expression again]

“Sing” [participants echo again]

“Echo the text of phrase two with expression”

[choir models phrase two on text, with expression]

“Sing” [participants echo]

“Can you make the first part of the phrase separated and second part of the phrase smooth like the model?”

[choir models phrase two on text, with expression again]

“Sing” [participants echo again]

“Echo the text of the whole song with expression”

[choir models the whole song on text, with expression]

“Sing” [participants echo]

“I want to hear a big change in volume on the words ‘wake up now get up now.’”

[choir models the whole song on text, with expression again]

“Sing” [participants echo again]

Section 4 – Expression

Section four is where expressive elements are introduced in the post-expression sequence. Since expressive elements have already been introduced in the infused-expression sequence section four is not needed.

Section 5 - Recording

“Perform the song with musical expression.”

[Piano plays the chords I, IV, I, V7, I in D major, and then the first two starting pitches.]

"1, 2, sing”.

For recording and uploading directions see Figures A.3 and A.4.

Appendix F: Script for Post-Expression Sequence with Feedback for Experiment 2

(Changes from the experiment 1 post-expression sequence are italicized)

"The goal of this sequence is to learn the rhythm, pitch, and text of this melody and perform it with musical expression.

Look at the notation for *Now All the Woods are Waking*.

Listen to the choir perform *Now All the Woods are Waking*. *Pay attention to the details and try to imitate the way they perform it."*

[choir models whole melody on text with expression]

Section 1 - Rhythm

"Echo the rhythm of phrase one"

[choir models phrase one on rhythm syllables (ta), with no expression]

"Sing" [participants echo]

[choir models phrase one on rhythm syllables (ta, ti-ti), with no expression again]

"Sing" [participants echo again]

"Echo the rhythm of phrase two"

[choir models phrase two on rhythm syllables (ta, ti-ti), with no expression]

"Sing" [participants echo]

[choir models phrase two on rhythm syllables (ta, ti-ti), with no expression again]

"Sing" [participants echo again]

"Echo the rhythm of the whole song"

[choir models whole song on rhythm syllables (ta, ti-ti), with no expression]

“Sing” [participants echo]

[choir models whole song on rhythm syllables (ta, ti-ti), with no expression again]

“Sing” [participants echo again]

Section 2 – Pitch

“Take 30 seconds and figure out the solfége to line number one. The first two pitches are so, do.”

[piano plays tonic chord and first two pitches]

“You may begin” [30 seconds of silence]

“Echo the solfége of phrase one”

[choir models phrase one on solfége, with no expression]

“Sing” [participants echo]

[choir models phrase one on solfége, with no expression again]

“Sing” [participants echo again]

[choir models phrase one on solfége, with no expression again]

“Sing” [participants echo again]

[choir models phrase one on solfége, with no expression again]

“Sing” [participants echo again]

“Take 30 seconds and figure out the solfége to phrase two. The first three pitches are ti do’ so.”

[30 seconds of silence]

“Echo the solfége of phrase two”

[choir models phrase two on solfége, with no expression]

“Sing” [participants echo]

[choir models phrase two on solfége, with no expression again]

“Sing” [participants echo again]

[choir models phrase two on solfége, with no expression again]

“Sing” [participants echo again]

[choir models phrase two on solfége, with no expression again]

“Sing” [participants echo again]

“Echo the solfége of the whole song”

[choir models whole song on solfége, with no expression]

“Sing” [participants echo]

[choir models whole song on solfége, with no expression again]

“Sing” [participants echo again]

Section 3 – Text

“Echo the text of phrase one”

[choir models phrase one on text, with no expression]

“Sing” [participants echo]

[choir models phrase one on text, with no expression again]

“Sing” [participants echo again]

“Echo the text of phrase two”

[choir models phrase two on text, with no expression]

“Sing” [participants echo]

[choir models phrase two on text, with no expression again]

“Sing” [participants echo again]

“Echo the text of the whole song”

[choir models the whole song on text, with no expression]

“Sing” [participants echo]

[choir models the whole song on text, with no expression again]

“Sing” [participants echo again]

Section 4 – Expression

“Notice that the top line and the second part of the bottom line is marked piano or quiet with a *p*.

The words ‘Wake up now get up now’ is the only section marked forte or loud with an *f*.

For Example, the beginning of the song should be sung quiet like this: ‘now all the woods are waking the sun is riding high” then forte ‘wake up now get up now’ then piano or quiet ‘before the dew is dry’

Also notice that the text ‘Now all the woods are waking’ and ‘before the dew is dry’ is marked staccato or short as shown by a dot underneath each note.

The text ‘the sun is riding high and wake up now get up now’ is marked legato or smooth as shown by an arched line drawn over the phrase.

For example, the beginning of the song should be separated like this: ‘now all the woods are waking’ then legato or smooth ‘the sun is riding high wake up now get up now’ then staccato and separated ‘before the dew is dry’

Echo the text of phrase one with expression”

[choir models phrase one on text, with expression]

“Sing” [participants echo]

"Can you make the first part of the phrase separated and second part of the phrase smooth like the model?"

[choir models phrase one on text, with expression again]

"Sing" [participants echo again]

"Echo the text of phrase two with expression"

[choir models phrase two on text, with expression]

"Sing" [participants echo]

"Can you make the first part of the phrase separated and second part of the phrase smooth like the model?"

[choir models phrase two on text, with expression again]

"Sing" [participants echo again]

"Echo the text of the whole song with expression"

[choir models the whole song on text, with expression]

"Sing" [participants echo]

"I want to hear a big change in volume on the words 'wake up now get up now.'"

[choir models the whole song on text, with expression again]

"Sing" [participants echo again]

Section 5 - Recording

"Perform the song with musical expression."

[Piano plays the chords I, IV, I, V7, I in D major, and then the first two starting pitches.]

"1, 2, sing". For recording and uploading directions see Figures A.3 and A.4.

Appendix G: Experiment 1 Participation Consent Form

Student: _____

Participation Consent Form – Hurley

Dear Spivey Families:

My name is Craig Hurley and I am currently pursuing my doctorate degree in music education at the University of Georgia (GO DAWGS!). As part of my degree I am completing a research project. I am interested in exploring the relationship between instructional sequence and expressive performance. In other words, does practicing expressive elements (i.e. articulation, accentuation, dynamics, etc.) early or late in the song-learning sequence lead to a more expressive performance?

Study Title: The effects of sequence on children's choral performance expressivity

Study Purpose and Rationale

The purpose of this study is to explore the effect of introducing expressive elements (i.e. dynamics, articulation, etc.) early or late in the song-learning sequence. There are several challenges when teaching expressive elements (i.e. articulation, dynamics, etc.) to a choir. There are a variety of strategies to help choirs sing more expressively and many of these approaches have been successful in various situations. However, when to implement these strategies in the song acquisition sequence has not been explored.

Participation Procedures and Duration

Participants will learn the round *Now All the Woods Are Waking* through one of two prerecorded audio teaching sequences. Sequence will differ based on procedure group. Sequence activities will include echo-speaking, echo-singing, singing on text and singing with expression and will mimic normal choral rehearsal activities. Participants will then be audio recorded in a group and individually as they would during a normal chorus rehearsal.

Participants will be asked to repeat the procedure at home using an online link. Students will then reconvene for a retention test the following week. The retention test will consist of performing the song again while being recorded as a group and an individual like before. Students will participate in two rehearsals for this study. Each rehearsal will last around 45 minutes.

Please continue reading on the back of this page.

Parental Consent Form

My signature below indicates that I have read the information provided and have decided to allow my child to participate in the study titled "The effects of sequence on children's choral performance expressivity" to be conducted at my Spivey Hall during the 2018 fall semester.

I understand the purpose of the research project will be to help identify best instructional techniques for teaching expressive elements to choral students and that my child will participate in the following manner:

1. Participate in two sessions one week a part.
2. Complete the song-learning sequence one time via an online link at home.
3. Be audio recorded in a group and individually performing a song.

Potential benefits of the study are to help increase expressive performance skills in choral students.

I agree to the following conditions with the understanding that I can withdraw my child from the study at any time should I choose to discontinue participation.

- The identity of participants will be protected. Students will be assigned a number and not be referred to by name or any identifiable information.
- Information gathered during the project will become part of the data analysis and may contribute to published research reports and presentations.
- A potential risk of the study is that participants may become nervous or frustrated if a singing task is too difficult.
- Participation in the study is voluntary and will not affect either student grades or placement decisions. If I decide to withdraw permission after the study begins, I will notify the school of my decision.

If further information is needed regarding the research study, I can contact Craig Hurley.
Questions or concerns about your rights as a research participant should be directed to the University of Georgia Institutional Review Board, telephone (706) 542-3199; email address irb@uga.edu.

Yes, my child has permission to participate.

Student's Name : ____

Signature ____
Parent Date

My child is available (check all that apply)
___ Monday, November 5 from 5:45 – 6:30
___ Monday, November 5 from 8:15 – 9:00
___ Monday, November 12 from 6:00 – 6:30
___ Monday, November 12 from 8:15 – 8:45

OR
~~~~~~

No, I'd rather my child not participate and/or they are unavailable during those times.

Student's Name : ____________________

Signature ____
Parent Date
~~~~~~

Appendix H: Experiment 2 Participation Consent Form

Student: _____

Participation Consent Form – Hurley

Dear Chorus Families:

My name is Craig Hurley and I am currently pursuing my doctorate degree in music education at the University of Georgia (GO DAWGS!). As part of my degree I am completing a research project. I am interested in exploring the relationship between instructional sequence and expressive performance. In other words, does practicing expressive elements (i.e. articulation, accentuation, dynamics, etc.) early or late in the song-learning sequence lead to a more expressive performance?

Study Title: The effects of sequence on children's choral performance expressivity

Study Purpose and Rationale

The purpose of this study is to explore the effect of introducing expressive elements (i.e. dynamics, articulation, etc.) early or late in the song-learning sequence. There are several challenges when teaching expressive elements (i.e. articulation, dynamics, etc.) to a choir. There are a variety of strategies to help choirs sing more expressively and many of these approaches have been successful in various situations. However, when to implement these strategies in the song acquisition sequence has not been explored.

Participation Procedures and Duration

Participants will learn the round *Now All the Woods Are Waking* through one of two prerecorded audio teaching sequences. Sequence will differ based on procedure group. Sequence activities will include echo-speaking, echo-singing, singing on text and singing with expression and will mimic normal choral rehearsal activities. Participants will then be audio recorded in a group and individually as they would during a normal chorus rehearsal.

Participants will be asked to repeat the procedure at home using an online link. Students will then reconvene for a retention test the following week. The retention test will consist of performing the song again while being recorded as a group and an individual like before. Students will participate in two rehearsals for this study. Each rehearsal will last around 45 minutes.

Please continue reading on the back of this page.

Parental Consent Form

My signature below indicates that I have read the information provided and have decided to allow my child to participate in the study titled "The effects of sequence on children's choral performance expressivity" to be conducted at my child's school during the 2018 fall semester. I understand that the signature of the principal and classroom teacher indicates they have agreed to participate in this research project.

Signature_____/_____

Principal Date Teacher Date

I understand the purpose of the research project will be to help identify best instructional techniques for teaching expressive elements to choral students and that my child will participate in the following manner:

1. Participate in two sessions one week a part.
2. Complete the song-learning sequence one time via an online link at home.
3. Be audio recorded in a group and individually performing a song.

Potential benefits of the study are to help increase expressive performance skills in choral students.

I agree to the following conditions with the understanding that I can withdraw my child from the study at any time should I choose to discontinue participation.

- The identity of participants will be protected. Students will be assigned a number and not be referred to by name or any identifiable information.
- Information gathered during the project will become part of the data analysis and may contribute to published research reports and presentations.
- A potential risk of the study is that participants may become nervous or frustrated if a singing task is too difficult.
- Participation in the study is voluntary and will not affect either student grades or placement decisions. If I decide to withdraw permission after the study begins, I will notify the school of my decision.

If further information is needed regarding the research study, I can contact Craig Hurley. Questions or concerns about your rights as a research participant should be directed to the University of Georgia Institutional Review Board, telephone (706) 542-3199; email address irb@uga.edu.

_____Yes, my child has permission to participate:

Student's Name : _____
Birthday (MM/DD/YYYY): _____
Was your child in the Ford Chorus last year? _____

Signature

____

Parent Date

My child is available (check all that apply)
___ Wednesday, November 7 until **3:30**
___ Thursday, November 8 until **3:30**
___ Wednesday, November 14 until **3:00**
___ Thursday, November 15 until **3:00**

OR

~~~~~~

_____No, I'd rather my child not participate and/or they are unavailable during those times.

Student's Name : ____________________ Homeroom Teacher : _________________

Signature ____
Parent Date
~~~~~~

Appendix I: Minor Assent Form for Participation in Research

Minor Assent Form for Participation in Research

The effects of sequence on children's choral performance expressivity

I am doing a research study to find out how children like you learn how to sing. We are asking you to be in the study because you are a chorus member. If you agree to be in the study, you will learn a song and be recorded as an ensemble and an individual just like in a normal rehearsal. You will also need to repeat the sequence at home and then come back in a week be recorded again. Being in the study may improve your ability to sing.

You do not have to say "yes" if you don't want to. No one, including your parents, will be mad at you if you say "no" now or if you change your mind later. We have also asked your parent's permission to do this. Even if your parent says "yes," you can still say "no." Remember, you can ask us to stop at any time. Your grades in school will not be affected whether you say "yes" or "no."

We will not use your name on any papers that we write about this project. We will only use a number so other people cannot tell who you are.

You can ask any questions that you have about this study. If you have a question later that you didn't think of now, you can see or email Mr. Hurley at any time.

Name of Child: _____ **Parental Permission on File:** ☐ Yes ☐ No**

***(If "No," do not proceed with assent or research procedures.)*

***(For Written Assent)* Signing here means that you have read this paper or had it read to you and that you are willing to be in this study. If you don't want to be in the study, don't sign.**

Signature of Child: _____ **Date:** _____

***(For Verbal Assent)* Indicate Child's Voluntary Response to Participation:** ☐ Yes ☐ No

Signature of Researcher: _____ **Date:** _____