2024

Choral Students' Perception of Kinesthetic Pedagogy in the High School Choral Classroom

Molly Bolewski
University of the Pacific

Choral Students' Perception of Kinesthetic Pedagogy in the High School Choral Classroom

By

Molly Bolewski

A Thesis Submitted

In Partial Fulfillment of the

Requirements for the Degree of

MASTER OF MUSIC EDUCATION

Conservatory of Music
Music Education

University of the Pacific
Stockton, California

2024

Choral Students' Perception of Kinesthetic Pedagogy in the High School Classroom

By

Molly Bolewski

APPROVED BY:

Thesis Advisor: Ruth Brittin, Ph.D.

Committee Member: Vu Nguyen, DMA

Committee Member: Darita Seth, MM

Department Chair: Ruth Brittin, Ph.D.

Choral Students' Perception of Kinesthetic Pedagogy in the High School Classroom

By

Molly Bolewski

Choral Students' Perception of Kinesthetic Pedagogy in the High School Classroom

Abstract

By Molly Bolewski

University of the Pacific
2024

This study examines the incorporation of kinesthetic pedagogy in secondary choral rehearsals and its impact on student engagement and learning. Three experienced high school choral teachers and their students from Northern California participated in the study. Each teacher conducted four consecutive rehearsal sessions, recording themselves instructing on two pieces of music using *teacher-modeled* and *student-imitated* kinesthetic gestures. Students completed daily surveys assessing their enjoyment and engagement levels, and teachers provided a final reflection on their usual kinesthetic practices. Video footage of twelve rehearsals and teachers' final reflections were analyzed to identify patterns in kinesthetic usage, revealing that these teachers' kinesthetic instruction was primarily centered on 1) Rhythmic Pulse/Accuracy, 2) Vowel Shape, and 3) Technical Knowledge. Teachers used almost twice as many kinesthetic prompts when rehearsing with student-imitated kinesthetics compared to kinesthetics modeled only by the teacher. Data from student surveys were analyzed to categorize reasons for enjoyment and identify alignment between students' perceptions of learning and kinesthetic practices. The incorporation of kinesthetic pedagogy in secondary choral rehearsals enhanced student engagement, enjoyment, and learning outcomes.

Table of Contents

Appendices

List of Tables

Table

List of Figures

Figure

CHAPTER 1: INTRODUCTION

Music educators are driven to provide their students with practical and engaging pedagogical strategies, motivating them to explore innovative approaches such as kinesthetic pedagogy to enhance student learning experiences and foster greater engagement in the classroom. While there is a long history of theorists and educators examining and using kinesthetic practices with elementary students, choral educators have been using kinesthetic approaches specifically with adolescents and adults for more than thirty years. Connecting a gesture to an abstract concept, such as singing, affects the understanding of a musical goal for singers of any age. In addition, using a variety of teaching approaches and stimuli within the rehearsal keeps students strategically engaged in the process. This study will contribute to the growing literature on pedagogical practices that engage students and contribute to an enjoyable learning environment.

Statement of Purpose

The purpose of this study is to form a foundational understanding of the value of kinesthetic pedagogy in the secondary choral classroom as it relates to student perception and engagement in the learning process. This information has implications for the long-term success of teachers' efforts toward recruitment and retention in choir programs. Through the literature review, we will see that teachers and researchers agree that kinesthetic gestures improve student performance and inspire engagement in the music-learning process. A "kinesthetic" (gestural prompt) can improve musical qualities such as intonation, musical expression, and vowel unification/blend. Entrainment, the coordination of two movement systems, supports the mind-body connection in singers between hand gesture and vocal apparatus (Daley & Rusiewicz, 2021), highlighting the potential efficacy of student-imitated kinesthetics in fostering engagement and improving musical performance. To better understand engaging, recruiting and retaining students, researchers have investigated theories about motivation and their connection to

the music classroom. Multiple studies have expanded upon student perception and teaching practices that lead to long-term investment in music programs, including building up students' musical self-concept and music literacy. The use of kinesthetic reinforcement is emphasized especially in choral music education. This research will contribute to the evidence to confirm the effects of a *teacher-modeled* kinesthetic versus a *student-imitated* kinesthetic.

Research Questions

This study aims to identify patterns in kinesthetic practices and student engagement in secondary choral settings when singers are prompted with *teacher-modeled* kinesthetic gestures or *student-imitated* kinesthetic gestures. The goal is to answer the following questions:

- What types of gestures are being used by select secondary choral teachers to facilitate learning and musicality?
- Do students feel more invested in the music-making process when engaged in movement?
- Will students articulate more learned musical concepts in the short-answer section of the survey when engaged in *student-imitated* kinesthetics?

In this study, a "kinesthetic" will refer to a physical gesture implemented in rehearsal to reinforce a musical concept. Student "engagement" is attention to the task and willingness to articulate what has been learned.

CHAPTER 2: REVIEW OF THE LITERATURE

The role of movement in music education, particularly within choral settings, has been a subject of considerable exploration and analysis. This literature review explores the nuanced relationship between movement, student engagement, and musical learning, examining its impact on the perspectives of the students and teachers in choral rehearsal. Originating from theories of cognitive development, the integration of kinesthetic practices in music pedagogy has gained significant attention from researchers and educators alike. By synthesizing insights from past research, this review aims to explore implications of different kinesthetic approaches for enhancing students' musical experiences and understanding. It seeks to investigate possible correspondence between the use of kinesthetic gestures and student engagement and learning outcomes, including kinesthetics modeled by the teacher and kinesthetics emulated by the students. Through a comprehensive examination of existing literature, this study endeavors to contribute to a deeper understanding of the role of movement in fostering musical development and enriching the choral learning environment.

Theories Influencing Kinesthetic Pedagogy Research

For decades, movement has been studied and researched. Kinesthetic practices have been primarily included in elementary music education to reflect Swiss psychologist Jean Piaget's (1896 - 1980) Cognitive Stages of Development, which suggest that young children develop through four stages: sensorimotor, preoperational, concrete operational, formal operational (Campbell & Scott-Kassner, 2013). These stages occur in young children (ages 0-12), and thus educators have focused on movement-based activities for elementary students.

Movement is also a pedagogical tool for adolescent and adult musicians. Émile Jacques-Dalcroze (1865 - 1950) recognized the necessity of being able to express musicality through movement before one could analyze harmony or read music. The Dalcroze Method connects natural gestures and whole-

body movement to listening to and perceiving musical patterns with measurable music learning outcomes (Crosby, 2008; Apfelstadt, 1985). For example, students might walk in a circle while the instructor plays an improvised tune, with students using big and small steps to emulate the quarter and eighth note rhythms as they are heard. According to the Dalcroze Society of America, eurhythmics training for musicians is designed to create a heightened sense of rhythm and harmony, encourage more musically expressive performances, enhance listening skills, and promote a deeper understanding of music through body movement (Marthaler, 2024).

Rudolf Laban (1879 - 1958) published *Die Welt does Tänzers (The Dancer's World)* in 1920, outlining his ideas of uniformity in human movement patterns. Labanotation, Laban's system for analyzing movement, identifies Effort, Space, Shape, and Body as primary areas: "Movement, to Laban, was a series of motions that a body passed through - there were no set positions, but a progression of movement through movement" (Billingham, 2001, p. 29). Establishing his eight motions and Labanotation defined the fundamentals of movement, giving elementary music educators the tools to teach synchronized musical movement from an early age (Lewis, 1998) and conductors a positive frame of reference for their conducting style and education (Gambetta, 2005). Laban Movement Analysis has influenced dancers, conductors, and music teachers to connect intention to musical expression because "the flow of movement realizes ideas and feelings and becomes visible in gestures or audible in music" (Holt, 1992).

Howard Gardner's (b. 1943) Theory of Multiple Intelligences suggests various ways to present information to students to process and ultimately understand. There were initially seven intelligences presented in *Frames of Mind: The Theory of Multiple Intelligences,* including musical, bodily-kinesthetic, interpersonal (social) intelligence, intrapersonal, visual-spatial, linguistic-verbal, and logical-mathematical (Gardner, 1983). A few years later he added naturalistic and existential intelligences to the list (Gardner, 2013). These nine intelligences have since inspired conversation and educational

reform in the United States. This theory is popular among educators especially because awareness of students' natural aptitudes is a tool for unlocking their potential and inspiring them to try. Though the Theory of Multiple Intelligences is a psychological theory, it remains more popular among educators than to psychologists (Gardner, 2013).

Movement in Choral Music Education

Researchers have stated that kinesthetic pedagogy engages students in a musical task and deepens students' understanding of the intended concept (Krogmann, 2023; Freer, 2007; Chagnon, 2001; Hibbard, 1994; Wis, 1993). They explain that there are a variety of ways that movement may influence singers. For example, embodiment is the physicalization of an abstract concept, allowing learners to decode the information through movement. Choir teachers regularly use tactile learning strategies to articulate musical ideas and engage their ensembles. Daley & Rusiewicz (2021) explain entrainment as, "Rooted in Dynamic Systems Theory, movement systems such as the hands and the vocal apparatus are said to be entrained when they influence one another mutually to "produce a single coordinated behavior, synchronous in time and space" (p. 522). In other words, an intentional coordinated motion will affect a sung vocal line. Daley makes the point that manual mimicry is part of a "shared vocal vocabulary" with students that can facilitate a "primary means of communication on the podium." This expands the possibilities for unified group singing.

Kinesthetics in the music rehearsal have been shown to improve student performance, nonverbally communicate musical ideas, and physically express abstract concepts. When singers understand the connection between the intended musical task and the prescribed movement-based gesture, it will be musically compelling (Wis, 1993; Hibbard, 1994; Manganello, 2011; Briggs, 2011; Chagnon, 2011). Ramona Wis (1993) and Therees Hibbard (1994) conducted exhaustive case studies to create a framework for using movement as a physical metaphor and an instructional tool in the choral classroom. Both observed the rehearsals of exemplary conductors who incorporated movement

effectively into their teaching. Hibbard identified and categorized physical activities and described them in the Laban Movement Analysis to draw parallels between them. Through this process, she found that movement instruction is an effective teaching tool and that "[teachers] increase the learning process by employing multimodal instruction through the movement's kinesthetic, visual, and aural effects on the singer." (Hibbard, 1994, p. V).

Ramona Wis (1993) explored George Lakoff and Mark Johnson's idea that the mind connects new information to concepts we already know when we learn. In other words, "all concepts, no matter how abstract, are rooted in physical experience" (Wis, 1999, p. 26). Teachers can connect a gesture that embodies a musical idea in a choral rehearsal and then incorporate it into instruction. Liao & Davidson (2015), Hibbard (1994), and Wis (1993) found that there was a difference in intonation when gestural training was implemented in rehearsal. Liao and Davidson (2015) looked specifically at a children's choir over 12 weeks, with three groups receiving various treatments of movement activity, gesture training, or neither. There was a positive effect on the groups who were given movement-based instruction. Kinesthetic techniques improve balance and blend in choral ensembles, specifically for vowel production (Hendrickson, 2011; McCoy, 1989). Timothy Hendrickson (2011) collected and condensed common vowel production problems such as colloquial pronunciations, diphthongs, and consonants and provided solutions, including hand gestures. Claire McCoy (1989) observed two high school choirs and found that the group who received movement instruction scored higher in balance/blend and tempo.

Richard Chagnon synthesized the studies of Wis (1993) and Hibbard (1994) and then looked at three additional choir directors' rehearsals to create a database of movement activities and their purposes. His study reinforces previous findings that movement helps singers stay engaged, release tensions, and communicate music expressively. It emphasizes the value of conductors' comfort with engaging in kinesthetic activities and notes the positive impact of movement-based learning on vocal technique and rehearsal efficacy. Movement activities are a quality teaching tool for singers of all ages,

not just developing young children. Wis and Hibbard interviewed the students at the conclusion of the research. Data from these results indicate that they perceive movement as beneficial for musical understanding, concentration, and unity in rehearsal, though some students express concerns about overuse or potential distractions. Chagnon's catalog of movements used by each teacher were entirely made up of *student-imitated* activities, categorized by musical task, which has implications for the value of kinesthetic pedagogy. In other words, Chagnon's study did not address possible effects (or lack of effects) for kinesthetics modeled only by the teacher, where students would not physically participate.

The following studies indicate that a *student-imitated* gesture specifically makes a difference in vocal performance for secondary and adult singers. Rose Marie Manganello observed a middle school choir implementing movement into rehearsal and had students imitate the motions (2011). She found that the movements exemplifying expressive qualities in the music (dynamics, phrasing, breathing, articulation) aided students in recollecting the expressivity. These adolescent singers physicalized concepts in rehearsal and were engaged in such a way that they remembered the concepts with measurably more clarity. This supports Lakoff and Johnson's idea that, as learners, contextualizing new information with a physical experience solidifies it. With movement-based instruction, choirs achieved more musical expressivity (Ebie, 2004; Hibbard, 1994) and conveyed the information they learned more accurately and more precisely.

Melissa Brunkan's 2013 study focused on the effect of kinesthetic gestures on the intonation and tone quality of college-level singers. The low and high conducting gestures resulted in "low, deeper breath" and "high, tense sound" and caused statistically significant differences in intonation and tone quality. In this instance, the singer producing the gesture did matter for the outcome of the vocal performance. Brunkan (2013) found that a low, circular conducting gesture, both visual and singer-imitated, inspired better intonation and tone quality in college-level singers than a high conducting pattern, which inspired a breathy tone quality (2013).

In his 2011 study, Timothy Hendrickson compiled specific kinesthetics used for modifying vowel shape in adult church choirs. He surveyed choir members and a panel of experts to rate the efficacy of these gestures performed by the ensemble. First, the singers completed a short questionnaire rating the effectiveness of each technique from their point of view. Then, a panel of experts participated in a blind survey where they listened to recordings of vowels sung by an eight-voice ensemble (2 sopranos, 2 altos, 2 tenors, 2 basses), singing each vowel on a unison pitch (D4). There were 24 pairs of vowel sounds used, each pair containing a vowel manipulated by a kinesthetic technique and one that was not. Results from both sets of data indicated that there was marked improvement in vowel production (2011).

In studies where a teacher-model and student-imitated gestures have been compared side by side, (Daley & Rusiewicz, 2021; Daley et al., 2022), specifically in private lesson settings, student-imitated kinesthetics have not been rated significantly more effective. For example, Daley et al. examined manual mimicry in college voice majors learning German and found no significant difference in the performance of each phoneme for those who received no gesture, viewed the gesture, or produced the gesture (2022). While some studies have not found significant differences between teacher-modeled and student-imitated kinesthetic gestures, multiple other studies have found clear advantages of incorporating kinesthetic activities into choral rehearsal, emphasizing the benefits of kinesthetic pedagogy in the choral classroom (Wis, 1993; Hibbard, 1994; Hendrickson, 2011; Liao & Davidson, 2015; Manganello, 2011; Briggs, 2011; Changnon, 2001).

Engagement

Student engagement can be measured within a learning setting (such as a rehearsal) or observed over more extended periods through participation statistics. Educators and researchers have investigated environmental factors, scheduling frameworks, student motivation, parental support, teacher/student interaction, and curricular design to understand what inspires them to choose or

continue with music programs over time (Ryan & Deci, 2000; Jost, 2011, Siebenaler, 2006; Freer, 2007; Dilworth, 2012; Dullea, 2017; Demorest, 2017; Pendergast, 2021). First, motivation theories will be discussed, followed by an examination of studies identifying the factors contributing to students' enjoyment of choir rehearsals.

Student Involvement in Music Programs

Elpus (2014) referenced a data set from the National Center for Educational Statistics revealing that 34% of a sample of students who graduated in 2013 had taken at least one music class in high school (Pendergast & Robinson, 2020). It appears a third of high school students are choosing music, whether based on interest or access. Pendergast & Robinson (2020) make reference to the work of Elpus (2014), highlighting that individuals from economically disadvantaged backgrounds, those with lower academic performance, and students from minority racial or ethnic groups are disproportionately less represented in secondary school music programs, particularly in band and orchestra classes. In addition to environmental barriers, when students continue in music from the compulsory music programs provided in elementary school, they begin to have a choice of the classes they take in middle and high school. For example, in one large school district in California, students K-4 will receive 20-30 minutes of music instruction per week and 5th and 6th grade students will receive 100 minutes per week. This schedule provides them with regular music exposure throughout elementary school (L. Talamantes, personal communication, February 3, 2024). In middle school, they often have the opportunity to enroll in offered programs such as Band, Choir, Orchestra, or other non-musical electives such as Physical Education, Drama, and Art. At this point, program directors begin competing for students' interest and commitment and must intentionally consider their task of recruitment/retention to grow and maintain their music programs.

Pendergast (2020) expands upon *Hawkinson's Model of School Music Constraints,* which indicates that structural, interpersonal, and intrapersonal factors affect students' decision to participate

in secondary music programs. Structural factors include school size and type, school-level support, academic performance, and English Language Proficiency. For example, Pendergast (2020) finds that larger public high schools are more likely than private or charter schools to offer music courses, and "class-taking patterns" primarily affect music enrollment. He expands on interpersonal factors such as social identity, parents and peers, and music teachers being influential points of interest for students' decision-making. Students can become disinterested in a program that's experienced a high turnover of music instructors and might be less likely to sign up for a program that does not have a reputable history (Pendergast, 2020). Intrapersonal factors that teachers can consider are student self-efficacy, attitudes, and costs. Eccles and Wigfield's *Expectancy Value Theory* states that a student might consider four types of costs when deciding whether to get involved with a program: effort-related, effort-unrelated, psychological, and loss of valued alternatives (Eccles & Wigfield, 2020; Pendergast, 2021). As students begin having some agency over which classes they will take, teachers might consider the costs associated with this decision.

Student Perspectives

For students to choose to stay involved in music ensembles, *Basic Psychological Needs Theory*, a subsection of Ryan and Deci's *Self-Determination Theory*, suggests that students need to experience competence, autonomy, and relatedness to thrive (Ryan & Deci, 2000; Pendergast, 2021; Colpo, 2024). In an article defining *Self-Determination Theory*, Ryan and Deci state, "Motivation concerns energy, direction, persistence, and equifinality— all aspects of activation and intention […] In the real world, motivation is highly valued because of its consequences: motivation produces" (2000, p. 69). For a program director, understanding the perspectives and motivations of its members is paramount to sustaining the group's membership.

Each of these three needs, competence, autonomy, and relatedness, can be facilitated by the teacher differently. For example, competence can be fostered by the challenge of technical accuracy and

singing different languages, especially for adolescents (Freer, 2007; Dullea, 2017). Many teachers provide leadership opportunities for their choir students, fostering agency, self-worth, personal growth, and general competence as functioning members of society. Investing regular time and energy into music literacy for choral students promotes autonomy. Students must experience enough success to feel they can competently do what the teacher is asking (Ryan & Deci, 2000) and will thrive when they feel respected and supported by their teacher (Jost, 2011). Teachers can facilitate relatedness for their students by intentionally selecting range-appropriate and culturally relevant repertoire. In addition to strategically considering students' needs, teachers who treat their students respectfully encourage trust and comfort, ultimately resulting in student commitment (Jost, 2011).

Adolescent students are heavily influenced by social perceptions (Demorest, 2017) and make decisions about their involvement in musical activities. Young singers are often motivated by watching their older peers succeed in music, whether through landing theatrical roles, getting a solo, or simply singing well; peer modeling gives them an idea of future opportunities for them in that choral program (Dullea, 2017). This information is valuable for a choir program coordinator because it informs the need for peer mentorship and relationships. Students are also motivated by being involved in something greater than themselves. Opportunities to use their vocal skills in real-world situations give them comprehensible input for why this art form is relatable to them (Dullea, 2017). While teaching the curriculum, teachers can provide context for their work so that students have an idea of how the task fits into their reality.

A large body of research focuses on adolescent male singers and their perspectives on singing, inspired by the unpredictable nature of the changing voice. Voice change insecurity, gender-based stereotypes, and scheduling issues, including competition with sports and other after-school activities, influence student choice not to continue into choir programs (Freer, 2007; Dilworth, 2012; Freer, 2018; Freer, 2006; Freer & Ververis, 2011). Choral music educators are particularly aware of gender issues;

conversation about the retention of males in secondary choirs suggests that movement in rehearsal benefits their perception of the musical task, helps them to physicalize the abstract concept of singing, breaks up activities, and encourages focus (Dilworth, 2012; Freer, 2007). Elements such as encouragement and active parental engagement, positive musical experiences during early and middle school years, a confident self-perception regarding musical abilities, and peer support all influence students' decisions to join music programs during pivotal stages of their education (Siebenaler, 2006). Selecting a range-appropriate repertoire for young male singers can increase their confidence in their singing voice (Demorest, 2000; Freer, 2007; Dilworth, 2012). Teachers also want to present the most engaging and effective teaching practices in conjunction with understanding student motivation and external factors. Taken together, these authors have studied and suggested ways to understand student perspectives regarding engagement and choral program development.

Regarding movement specifically, the inclusion of movement in the high school choral rehearsal inspires higher levels of engagement and enjoyment for students (Wis, 1993; McCoy, 1989; Briggs, 2011; Chagnon, 2001; Krogmann, 2023) and bolsters singer confidence and the group's sense of accomplishment (Hibbard, 1994). Connecting a gesture to an abstract concept, such as singing, affects students' understanding of the musical goal (Daley & Rusiewicz, 2021; Krogmann, 2023; Hibbard, 1994). Tapping into students' sense of autonomy and competence this way helps them want to continue in music. Krogmann (2023) also found that students viewed kinesthetic pedagogy as beneficial to their vocal development. If students know the value of a kinesthetic in rehearsal, not only is their sense of value and agency bolstered as a competent member of the music-making process, but their concept of relatedness to the world of quality vocal production and their teacher is emphasized.

Teachers incorporate “stimulus variation” into a rehearsal to keep students engaged. Stimulus Variation involves changing teacher behavior (positioning in the room, use of podium, style of content delivery, student groupings) to change the learning environment. Jones & McQuerrey (1980) suggest

this technique to "maintain attention and eliminate fatigue" in the choral rehearsal. For example, in the music classroom, teachers often institute intentional timeframes within their lessons where students are not “stuck” on an activity for more minutes than they are years old (Dilworth, 2012; Freer, 2007). Kinesthetic stimulation may provide a variety of stimuli into a rehearsal, to develop and keep choristers’ attention and vitality.

A choral classroom is a place of personal, musical, and technical growth when a teacher prioritizes student learning behaviors, attention span, and layers of motivation. While many studies have confirmed the efficacy of incorporating kinesthetic practices into the rehearsal for musical gains, and the value of engaging student attention is unquestioned, few if any have examined kinesthetic pedagogy focusing on music learning and engagement. This study pinpoints the kinesthetics used in select secondary choir rehearsals and provides illumination on the connection of two kinesthetic approaches to student perceptions of their musical learning and rehearsal engagement. Specifically, this study examines the effects of students physically participating (student-imitated) in kinesthetic processes rather than simply observing kinesthetic cues from the teacher (teacher-modeled). From this exploration, we may see whether and how students’ active kinesthetic participation affects their learning and engagement.

CHAPTER 3: METHODOLOGY

The target population for this study was secondary choral students and their teachers. For the purpose of gathering data for this study, teachers of choral programs within a 50-mile radius of a university in Northern California were contacted if they had collaborated with the university's music teacher education programs in the last two years. For consideration, teachers were required to have at least three years of teaching experience. All were currently teaching within Bay Section, the regional division of California Music Educators Association (CMEA). Six teachers originally agreed to participate in the study, and three high schools ultimately participated. These three teachers all had more than ten years of teaching experience. One ensemble each from three schools was selected for inclusion, with group sizes ranging from 20 - 35 singers.

Institutional Review Board approval was obtained for this investigation through University of the Pacific. See *IRB Protocol* in the Appendix for full details of the IRB application. Students maintained complete anonymity in their surveys and in videos (no students were in the video frames). All students and teachers signed consent forms, assent forms, and parents filled out parent permission forms for their students to participate in the study. Students were assured that they did not have to answer every question or fill out a reflection if they did not so choose. Any student who did not obtain parent permission was given a survey on a pink sheet of paper and their data would not be used.

Participating teachers were asked to conduct four consecutive rehearsal sessions within a week, no more than 20 minutes long (10 minutes per piece), and to record themselves giving instruction on the same two pieces. They were to alternate each day on each piece, either giving instructions with a *teacher-modeled* kinesthetic only or asking for a *student-imitated* kinesthetic.[1] Incorporation of

[1] In line with previous literature, "kinesthetic" will be used synonymously with "kinesthetic gesture."

kinesthetics was to be as natural to their usual teaching style as possible to maintain a typical rehearsal setting for the students.

An example of a *teacher-modeled* kinesthetic would be the teacher asking for a rounder [u], or "oo," vowel by circling their pointer finger around rounded lips and then asking students to sing. A *student-imitated* kinesthetic would be the teacher circling their pointer finger around rounded lips and then instructing students to do the same. As is common practice, teachers would show a gesture and then say something along the lines of "do this with me," thus inviting a student-imitated gesture. This way, students were physically engaged in the rehearsal process.

The order of pieces and application of instruction styles were balanced across days so that each piece was taught with both *teacher-modeled* and *student-imitated* instruction. Pieces were alternated evenly to balance the rehearsal order. See Table 1 to reference the Alternating Rehearsal Schedule.

Table 1

Alternating Rehearsal Schedule

	First Piece	**Second Piece**
Day 1	Piece A Student-Imitated	Piece B Teacher-Modeled
Day 2	Piece B Student-Imitated	Piece A Teacher-Modeled
Day 3	Piece B Teacher-Modeled	Piece A Student-Imitated
Day 4	Piece A Teacher-Modeled	Piece B Student-Imitated

At the conclusion of each day of rehearsal, students completed a survey focusing on their enjoyment and engagement level in the rehearsal of each piece (See *Daily Student Reflection* in Appendix). Teachers submitted a final survey at the end of the week, explaining their usual kinesthetic

practices, including comfort level with kinesthetic pedagogy, specific gestures used in their usual instruction, and reasons for their use (See *Final Teacher Reflection* in Appendix).

Teachers' video recordings were analyzed for patterns in kinesthetic usage, including frequency and gesture type, and final reflections were reviewed to better understand perceptions of students' comfort level with kinesthetic pedagogy and the teachers' specific teaching practices related to movement. Student survey data were analyzed to measure students' enjoyment and engagement level for each rehearsal. Students were also asked to articulate what they specifically enjoyed about each rehearsal and what musical concept(s) they learned. These data sets were used to 1) categorize the reasons why students enjoyed rehearsal and 2) identify whether student perception aligned with kinesthetics used in rehearsal. Finally, the word count of the student responses was calculated to see how much feedback students provided about both *teacher-modeled* and *student-imitated* rehearsals.

Data Analysis

Three schools submitted rehearsal videos (four videos per teacher) and a *Final Teacher Reflection (*see appendix), which were used to identify teacher kinesthetic practices in rehearsal. Two of the three teachers submitted student survey responses. Since one teacher's survey responses were not usable (too few), only the data from the submitted video footage and that teacher's *Final Teacher Reflection* responses were used in this report. These videos were also used for establishing consensus of the use of categories to reach appropriate reliability between observers.

The reliability observer and the investigator independently reviewed four out of the twelve videos (33% of the video footage) to identify the teachers' kinesthetic practices by category. This process showed r = .88 reliability, using agreements divided by agreements plus disagreements.

A survey was used to measure student perspectives of each rehearsal. For each piece, students were presented with the same set of four questions. The initial two questions centered on student enjoyment. The first question, "On a scale of 1 to 5, how much did you enjoy today's rehearsal of Piece

#1?" prompted students to respond using a Likert-type scale, where 1 signified "strongly disagree" and 5 indicated "strongly agree." Following this, students were asked a short-answer question: "What did you enjoy about it?" The next two questions assessed engagement in the process. These questions were "On a scale of 1 to 5, how engaged did you feel in the music rehearsal process of Piece #1?" and "Describe a musical concept you focused on in Piece #1."

The observer collaborated with the investigator on the student survey responses to establish "Reasons for Enjoyment" categories and "Musical Concepts" categories. When reviewing student responses, the reliability observer and the investigator independently reviewed three sets of student responses (38% of the student responses) to categorize students' short answer responses. This process showed r = .83 reliability for the "Reasons for Enjoyment" categories and r = .88 for "Musical Concepts" categories, using agreements divided by agreements plus disagreements.

An additional measure was intended via a *Daily Teacher Survey (*see appendix), giving the teachers an opportunity to report their perspective each day of what percentage of students imitated their gestures when asked. It gave space for comments from the teacher about that day's *teacher-modeled* rehearsal and the *student-imitated* rehearsal. None of the three teachers filled out the *Daily Teacher Survey*, so those data were not included.

CHAPTER 4: RESULTS

Teacher Videos

Three teachers' videos were observed to categorize kinesthetics used in rehearsal and analyze the frequency of teacher usage of each type of kinesthetic. Teachers took video of themselves leading rehearsal in two scenarios, either giving instructions with a *teacher-modeled* kinesthetic only or asking for *student-imitated* kinesthetics. Table 2 shows the teachers' overall time usage, in lengths of minutes, for each rehearsal segment.

Table 2

Alternating Rehearsal Schedule and Length of Rehearsal per Teacher

	First Piece	**Second Piece**
Day 1	Piece A Student-Imitated	Piece B Teacher-Modeled
	Teacher A - 7:42	Teacher A - 4:26
	Teacher B - 9:36	Teacher B - 9:45
	Teacher C - 4:12	Teacher C - 5:11
Day 2	Piece B Student-Imitated	Piece A Teacher-Modeled
	Teacher A - 9:58	Teacher A - 10:23
	Teacher B - 8:37	Teacher B - 5:01
	Teacher C - 5:14	Teacher C - 1:54
Day 3	Piece B Teacher-Modeled	Piece A Student-Imitated
	Teacher A - 6:50	Teacher A - 15:16
	Teacher B - 8:07	Teacher B - 5:18

(Table 2 Continued)

	Teacher C - 5:11	Teacher C - 5:46
Day 4	Piece A Teacher-Modeled	Piece B Student-Imitated
	Teacher A - 11:45	Teacher A - 4:58
	Teacher B - 5:54	Teacher B - 5:47
	Teacher C - 6:22	Teacher C - 4:58

Gestures were categorized by the intended musical task, revealing the following categories: Vowel Shape, Vocal Placement, Tone Quality, Rhythmic Pulse/Accuracy, Pitch Mapping, Phrasing/Expression, Procedural Reinforcement, Proximity, Technical Knowledge, and General Engagement. See Table 3 for specific examples of each gesture type.

Table 3

Teacher Video Analysis - Kinesthetic Gesture Examples

<u>Vowel Shape:</u>	● Pulling out an [u] vowel from the lips ● Finger circling face for [u] vowel ● Mouthing words/vowels ● [ɑ] [e] [i] [o] [u] - practiced gestures for each vowel ● Writes vowel and IPA on board ● R/L hand creating vertical space (in front of torso) ● Fingers at hinge of jaw bone for [ɑ] ● Pointing to chin (to indicate dropping of the jaw)
<u>Vocal Placement:</u>	● Taps head (when switching to head voice) ● Points forward for more resonant, RINGING sound ● Hand extends forward in an arc in front of face
<u>Tone Quality:</u>	● Palms up, lifting arms up ● “Spirit fingers” for adding color

(Table 3 Continued)

Rhythmic Pulse/Accuracy:	● Snapping, clapping, chopping, patting the beat ● Walk in place ● Hand over mouth for rests ● Clapping mixed meter rhythms
Pitch Mapping:	● Pitch mapping in the air ● creating an arc with arm to physicalize an ascending line ● Lift the sound up (slide to first pitch)
Phrasing/Expression:	● Swaying for legato phrases ● Karate chop for staccato phrases ● Spider fingers growing for crescendo ● Air violin for longer phrases
Procedural Reinforcement:	● Square numbers/page numbers shown on fingers ● Hand gesturing to stand up/sit down ● Showing “hairpins” (crescendo/decrescendo) in the air ● Writes on board ● Fingers to lips (sh) for dynamic change ● Points to a section to begin ● “Mixing” gesture - stand next to someone who does not sing your voice part
Proximity:	● Moves to stand near a certain section (to listen or sing with them) ● Moves to back of the room (stimulus variation) ● Have students stand in pods in their sections (to listen to one another)
Technical Knowledge: (includes processes such as breathing and explanation of the vocal mechanism)	● Hugging a tree, looking up and breathing in ● Gestures to abdomen to remind students about breath support ● A duck’s paddling feet below surface of the water (comparison to breath support) ● Squeeze something in your hand while singing ● shoulders up, back, then down for “ready position” ● Feet are on floor, shoulder-width apart with bent knees

(Table 3 Continued)

General Engagement: (*AKA "attention-getters"*)	● Pointing to collaborative pianist to highlight the playing ● Stopping and starting phrases at unpredictable times to encourage students to watch the teacher ● Make up gestures unrelated to musical concept for fun or attention-getting

Note: Eye contact is a kinesthetic technique that was used by all three teachers in their rehearsals, but camera angles made it difficult to measure how frequently intentional eye contact was utilized. Therefore, it is not its own category in the chart below, but eye contact is an engaging kinesthetic practice that was used by the teachers in this study.

Table 4 identifies the frequency of each gesture type by all three teachers during their *teacher-modeled* rehearsals. Two independent observers established $r = .88$ reliability on the following video analysis (see explanation of establishing reliability in *Data Analysis* section). In the *teacher-modeled* rehearsals, all three teachers utilized gestures to prompt various vowel shapes. This was a trend throughout all rehearsals, but Vowel Shape was the only category in the *teacher-modeled* rehearsals for which all teachers incorporated multiple gestures. Procedural Reinforcement, for example, was used frequently by Teacher A but only once or twice by the other two teachers.

Table 4

Frequency of Gesture Type in Teacher-Modeled Rehearsals

	Vowel Shape	Vocal Placement	Tone Quality	Rhythmic Pulse/ Accuracy	Pitch Mapping	Phrasing/ Expression	Procedural Reinforcement	Technical Knowledge	General Engagement	Teacher Totals
Teacher A	**5**	**0**	**0**	**3**	**2**	**0**	**15**	**3**	**0**	**26**
Teacher B	**4**	**0**	**0**	**0**	**2**	**0**	**1**	**1**	**1**	**9**
Teacher C	**6**	**0**	**0**	**10**	**3**	**1**	**2**	**0**	**0**	**22**
Gesture Totals	**15**	**0**	**0**	**13**	**7**	**1**	**18**	**4**	**1**	**57**

Table 5

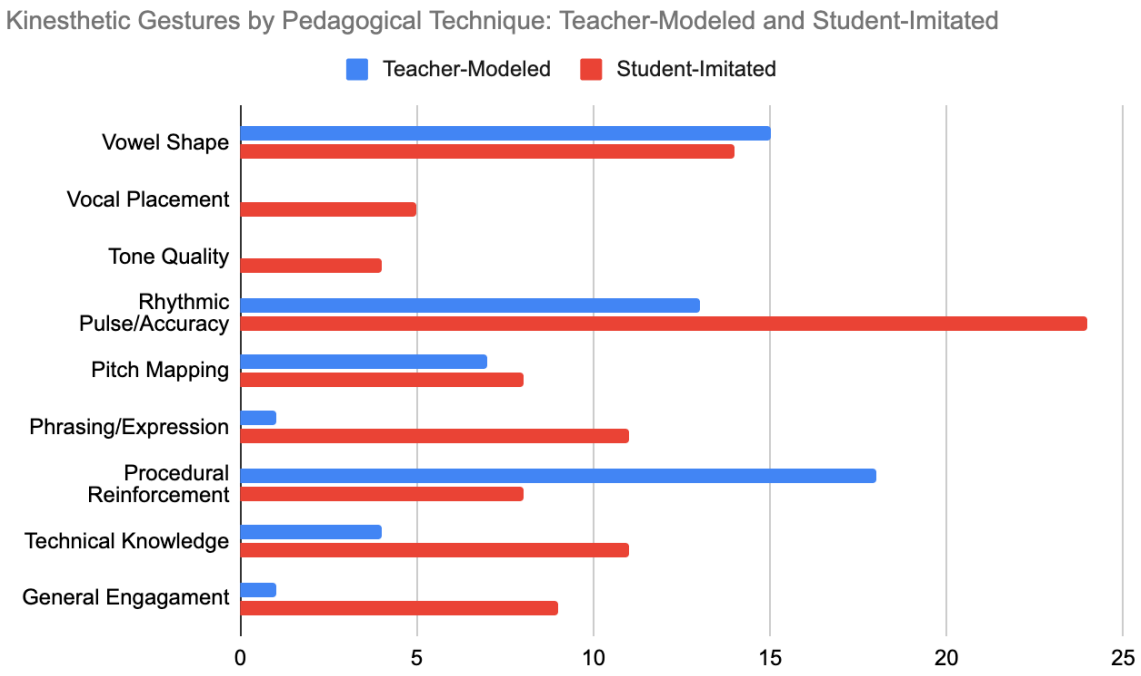
Frequency of Gesture Type in Student-Imitated Rehearsals

	Vowel Shape	Vocal Placement	Tone Quality	Rhythmic Pulse/ Accuracy	Pitch Mapping	Phrasing/ Expression	Procedural Reinforcement	Technical Knowledge	General Engagement	Teacher Totals
Teacher A	**6**	**0**	**0**	**9**	**0**	**0**	**2**	**8**	**0**	**25**
Teacher B	**1**	**2**	**1**	**4**	**5**	**1**	**2**	**1**	**5**	**22**
Teacher C	**7**	**3**	**3**	**11**	**3**	**10**	**4**	**2**	**4**	**47**
Gesture Totals	**14**	**5**	**4**	**24**	**8**	**11**	**8**	**11**	**9**	**94**

Table 5 identifies the frequency of each gesture type by all three teachers during their *student-imitated* rehearsals. The categories with highest frequency of use were Vowel Shape and Rhythmic Pulse/Accuracy. When prompting students to participate physically in rehearsal, one of the most intuitive kinesthetics for teachers to ask for is to somehow “keep the beat” on one’s body. This was a common kinesthetic used among all three teachers to establish/re-establish tempo or to isolate tricky rhythms. Teachers also incorporated many interactive explanations of breathing, using physical metaphors such as hugging a tree and breathing in through the nose to feel the expansion of the rib cage and lower abdomen.

Figure 1

Kinesthetic Gestures by Pedagogical Technique: Teacher-Modeled and Student-Imitated



Notably, when leading *student-imitated* rehearsals, these teachers almost doubled the number of kinesthetics in their instruction compared to the *teacher-modeled* rehearsals. The graph in Figure 1 shows the overall number of gestures in each category throughout all rehearsals, t*eacher-modeled* and *student-imitated*. These three secondary choral teachers most frequently incorporate a kinesthetic to address Rhythmic Pulse/Accuracy and Vowel Shape. Kinesthetics associated with Pitch Mapping and Technical Knowledge were also frequently used and gave insight for a student to conceptualize a musical concept. Procedural Reinforcement gestures were also frequently used when teachers gestured toward a certain voice part or asked groups of students to stand, sit down, or mix up and stand next to a different voice part.

Final Teacher Reflection Responses

On a Likert-type scale of 1-5, with 1 being "strongly disagree" and 5 being "strongly agree," all three teachers indicated "strongly agree" that they value kinesthetics as an engagement tool and value movement in student performances. Two of the three teachers indicated "strongly agree" that they include kinesthetic gestures primarily to reinforce musical concepts, with one teacher indicating moderate use of kinesthetics (3 out of 5 on the scale). Two of the three teachers said their students were very comfortable with imitating movements when asked, with one teacher having many students who were not unanimously comfortable with movement in choral rehearsal. Teachers operated on different teaching schedules; one met with their ensemble 55 minutes daily while the other two met for 90 minutes daily. Thus, those with longer periods daily have extended periods to keep students engaged. When asked "For what aspects of choral singing do you find kinesthetics to be most beneficial," their responses included:

Teacher A: "Vowel shape and breath support/core engagement."

Teacher B: "Internalizing the beat. Entrainment. Unification. Coordination. Being comfortable in one's own space. Spacial and movement confidence. Expressing music as one moves. Music starts with movement - not the other way around. Physical awareness. Phrasing, musicality, tone, vowel, beat, rhythm, expression, emotional connection. Movement is at the essence of what music is."

Teacher C: "The physical aspect of singing."

The *Final Teacher Reflection* prompted the teachers to respond to a list of scenarios in which teachers might choose to incorporate kinesthetics into typical instruction and performances. Table 6 shows their self-reports of kinesthetic practices in their own programs.

Table 6

Final Teacher Reflection Responses

	Teacher A	Teacher B	Teacher C
Learning notes and rhythms in rehearsal		x	
Working on tone and/or vowel shape	x	x	x
Reinforcing classroom instructions		x	
Physicalizing an articulation	x	x	x
ASL or "Choralography" in performances			x
Establishing (or re-establishing) tempo	x	x	x
Encouraging musical expressivity/phrasing	x	x	x
Improving Intonation	x	x	
Nonverbally reminding students of a concept while students are singing	x	x	x
Physicalizing an anatomical concept (ie. Breathing)	x	x	x
Other:	N/A	N/A	N/A

There was a general consistency between the teachers' instructions across several rehearsals and what teachers reported about their usual kinesthetic practices. Teachers filled out this reflection at the end of the week of data collection, so the kinesthetic lessons were still fresh on their minds. When not engaged in a kinesthetic study, they might have reported different or fewer kinesthetics.

Student Survey Responses

Two of the teachers submitted student survey responses for their ensembles. There were 78 surveys from Teacher A and 45 surveys from Teacher B. The *Daily Student Reflection* asked students to rate their enjoyment and engagement levels on a Likert-type scale of 1-5 for the rehearsal of each piece. They also were asked to write short answers about what they enjoyed about rehearsal and what musical concepts they learned.

Table 7

Teacher A: Daily Enjoyment Means and Standard Deviations (n = 78)

Teacher A: **Teacher Modeled** Rehearsals - Daily Enjoyment Means & Standard Deviations				
Day 1	Day 2	Day 3	Day 4	Mean
3.35 (SD = 1.27)	*3.86 (SD = .89)*	*3.92 (SD = .93)*	*4.35 (SD = .65)*	*3.91 (SD = .98)*
Teacher A: **Student Imitated** Rehearsals - Daily Enjoyment Means & Standard Deviations				
Day 1	Day 2	Day 3	Day 4	Mean
3.53 (SD = .77)	*4.09 (SD = .87)*	*3.96 (SD = .75)*	*3.91 (SD = .95)*	*3.89 (SD = .85)*

Table 8

Teacher B: Daily Enjoyment Means & Standard Deviations (n = 45)

Teacher B: **Teacher Modeled** Rehearsals - Daily Enjoyment Means & Standard Deviations				
Day 1	Day 2	Day 3	Day 4	Mean
4.0 (SD = 1.04)	*4.0 (SD = .74)*	*3.56 (SD = .73)*	*4.33 (SD = .65)*	*4.0 (SD = 0.83)*
Teacher B: **Student Imitated** Rehearsals - Daily Enjoyment Means & Standard Deviations				
Day 1	Day 2	Day 3	Day 4	Mean
3.67 (SD=1.23)	*4.36 (SD = .67)*	*4.11 (SD = .60)*	*3.92 (SD = .67)*	*4.0 (SD = 0.86)*

Table 7 and Table 8 show that the students in both ensembles rated their level of enjoyment of *teacher-modeled* rehearsals and *student-imitated* rehearsals almost the same. There is little indication from these results of student perceptions being more positive toward a physically active rehearsal, as seen in Likert-type quantitative ratings. Engagement ratings were explored further through short answer questions, which added more detailed information.

Table 9

Teacher A: Daily Engagement Means & Standard Deviations

Teacher A: **Teacher Modeled** Rehearsals - Daily Engagement Means & Standard Deviations				
Day 1	Day 2	Day 3	Day 4	Mean
3.44 (SD = 1.15)	*4.18 (SD = 0.80)*	*4.29 (SD = .69)*	*4.23 (SD = .75)*	*4.07 (SD = .89)*
Teacher A: **Student Imitated** Rehearsals - Daily Engagement Means & Standard Deviations				
Day 1	Day 2	Day 3	Day 4	Mean
3.79 (SD = 1.03)	*4.32 (SD = .78)*	*4.33 (SD = .70)*	*4.13 (SD = .92)*	*4.16 (SD = .87)*

Table 10

Teacher B: Daily Engagement Means & Standard Deviations

Teacher B: **Teacher Modeled** Rehearsals - Daily Engagement Means & Standard Deviations				
Day 1	Day 2	Day 3	Day 4	Mean
3.58 (SD = 1.38)	*3.91 (SD = .83)*	*4.11 (SD = .60)*	*4.17 (SD = .72)*	*3.93 (SD =.95)*
Teacher B: **Student Imitated** Rehearsals - Daily Engagement Means & Standard Deviations				
Day 1	Day 2	Day 3	Day 4	Mean
3.92 (SD = .79)	*4.27 (SD = .65)*	*4.11 (SD = .60)*	*3.92 (SD = 0.79)*	*4.05 (SD = .71)*

Table 9 and Table 10 indicate that students' ratings of engagement in *student-imitated* rehearsals for both teachers were slightly higher in a couple of categories, compared to *teacher-*

modeled rehearsals, but the pattern is very slight and not consistent across categories. Like the enjoyment ratings, the engagement ratings on Likert-type scales showed no clear pattern on higher engagement reported for either condition. Generally, the slightly higher ratings for student-imitated kinesthetics were seen in the first two rehearsals.

Table 11

Overall Enjoyment and Engagement Means

	Teacher-Modeled	Student-Imitated
Overall Enjoyment Mean	*3.94 (SD = .93)*	*3.92 (SD = 0.85)*
Overall Engagement Mean	*4.02 (SD = 0.91)*	*4.12 (SD = 0.82)*

Overall ratings demonstrated in Table 11 indicate virtually no difference in student enjoyment between *teacher-modeled* rehearsals and *student-imitated* rehearsals, when answering with Likert-type scale ratings. However, when given the opportunity on the survey to articulate what they enjoyed and what they learned in each rehearsal, students revealed more about their levels of enjoyment and engagement in each lesson.

In answering the question "What did you enjoy about this rehearsal," students had the opportunity to expand on their impressions for each rehearsal. Several themes surfaced across student responses and the following categories were established. Through collaboration with a reliability observer, these five categories were created, with reliability (r = .83):

1. Enjoyment of the Piece/Composer
2. Enjoyment of Singing
3. Feelings of Mastery
4. Engaged in Learning

5. “Nothing” “Everything” “I Don’t Know” or unfilled

Table 12 shows the frequency of student responses of Teacher A, categorized based on their self-reported reasons for enjoying rehearsal. The students working with Teacher A reported “Feelings of Mastery” and “Engagement in Learning” in their survey responses. Student responses categorized in “Feelings of Mastery” included answers such as “I think that at the end of practicing, the song sounded a lot better” or “[I enjoyed when] we got it all right at the end but need more focus on lightly singing and pronunciation.” Negative responses were also listed in “Feelings of Mastery” because it served as an engagement tool. For example, “I did not really enjoy it because some people were messing up and it was annoying.” Motivation comes in many forms.

Student responses were categorized as “Engaged in Learning” when they included specific musical tasks for the reason why the student liked rehearsal. For example, one student wrote “I enjoyed how [our teacher] let each section sing/say the rests to know how long to sing or rest.” In many cases, students also reported a kinesthetic activity being the most enjoyable part of rehearsal — “I enjoyed mixing with different people [voice parts] to see if I could find my note without relying on anyone else.”

Engagement was the category with the most striking difference between *teacher-modeled* and *student-imitated* kinesthetic rehearsal modes for Teacher A. There were a third more comments for *student-imitated* kinesthetic rehearsals compared to *teacher-modeled* kinesthetic rehearsals. Furthermore, 15 of the 34 short-answer engagement responses from *student-imitated* rehearsals specifically mentioned a kinesthetic activity as why they enjoyed rehearsal of that piece.

Table 12

Teacher A: Student Survey Responses - Reasons for Enjoying Rehearsal ("What Did You Enjoy About this Rehearsal?")

Teacher A		
REASONS FOR ENJOYING REHEARSAL	Teacher-Modeled	Student-Imitated
Enjoyment of the Piece/Composer	12	15
Enjoyment of Singing	4	2
Feelings of Mastery	20	20
Engaged in Learning	21	34
"Nothing" "Everything" "I Don't Know" or Unfilled	7	4

Table 13

Teacher B: Student Survey Responses - Reasons for Enjoying Rehearsal ("What Did You Enjoy About this Rehearsal?")

Teacher B		
REASONS FOR ENJOYING REHEARSAL	Teacher-Modeled	Student-Imitated
Enjoyment of the Piece/Composer	10	13
Enjoyment of Singing	11	12
Feelings of Mastery	6	2
Engaged in Learning	9	6
"Nothing" "Everything" "I Don't Know" or Unfilled	6	5

Table 13 indicates that students of Teacher B's ensemble highly valued "Enjoyment of the Piece/Composer" and "Enjoyment of Singing." They enjoyed making music with their peers, with comments such as "[I really enjoyed] all of us singing together." Students also found value in the relatedness of singing certain repertoire, like their school's Alma Mater, which made them feel "like a part of the school." Student responses indicated no clear differences between *teacher-modeled* and *student-imitated* instruction, and Teacher B reported in the Final Teacher Reflection that student attitude toward participation in *student-imitated* instruction varied greatly. Thus it appears there was not a uniform effect across the ensemble for the two styles of rehearsal.

The final question on the *Daily Student Reflection* was "Describe one musical concept you focused on in rehearsal." This question was designed to gauge whether there was an observable pattern in what they could articulate they had learned that appeared to relate to the rehearsal mode used. An independent observer and the investigator collaborated to define these three categories that captured students' responses:

1. Kinesthetic Inspired Concept (concept approached kinesthetically during instruction)
2. Non-Kinesthetic Inspired Concept (concept not approached kinesthetically during instruction)
3. "Nothing" "I Don't Know" or Unclear Response

To identify whether students reported musical concepts that had been taught with a kinesthetic, the document with each specific kinesthetic from the video footage was cross-referenced with their survey responses. If they cited a musical concept that had been addressed in that rehearsal with a kinesthetic, it was categorized as a "Kinesthetic Inspired Concept." If they cited a musical concept that had not been addressed in that rehearsal with a kinesthetic, it was categorized as a "Non-Kinesthetic Inspired Concept." Responses with "nothing" or "I don't know" were also noted. 88% reliability was achieved in the categorization of the engagement data.

Figure 2

Teacher A: Student Survey Responses - Musical Concepts Learned

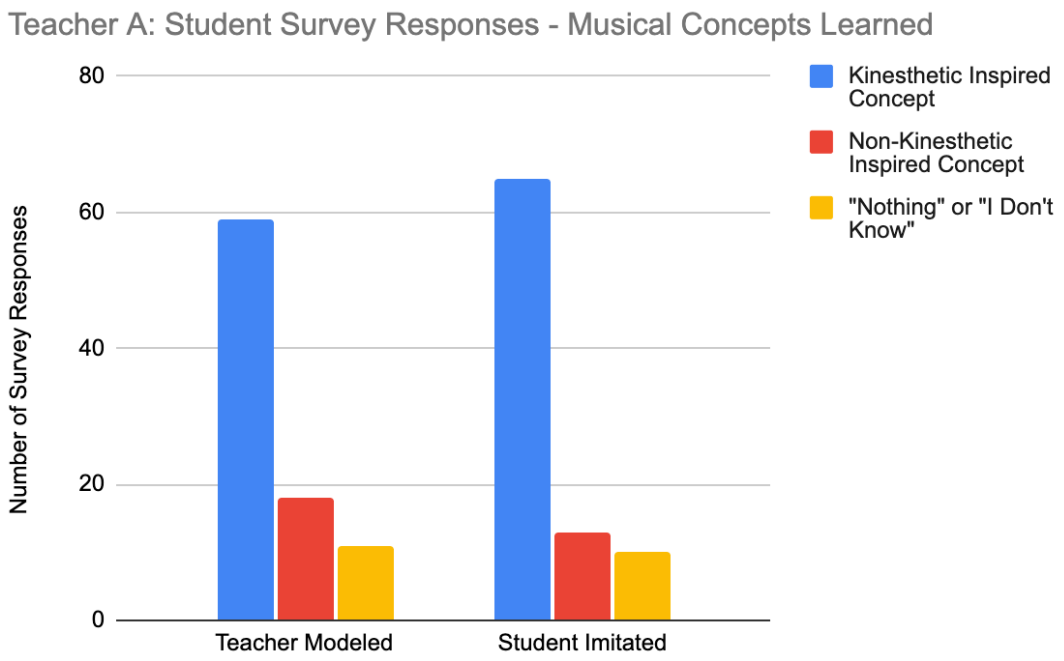


Figure 2 shows how Teacher A's student responses were clearly influenced by kinesthetic activities in the rehearsal. In Teacher A's teacher-modeled rehearsals, there were 59 responses where a student indicated that they learned something that had been taught with a kinesthetic, 18 responses where a student indicated they learned something that had not been taught with a kinesthetic, and 11 responses where a student wrote "I don't know" or "nothing." In Teacher A's student-imitated rehearsals, there were 65 responses where a student indicated that they learned something that had been taught with a kinesthetic, 13 responses where a student indicated they learned something that had not been taught with a kinesthetic, and 10 responses where a student wrote "I don't know" or "nothing." In both rehearsal scenarios, students were engaged with the content and were able to articulate what they'd learned through kinesthetic pedagogy. Student responses were as specific as

"keeping time in your head and keeping tempo by snapping/tapping your foot" while others said "counting in ¾." Both are examples of students' alignment with the task.

Figure 3

Teacher B: Student Survey Responses - Musical Concepts Learned

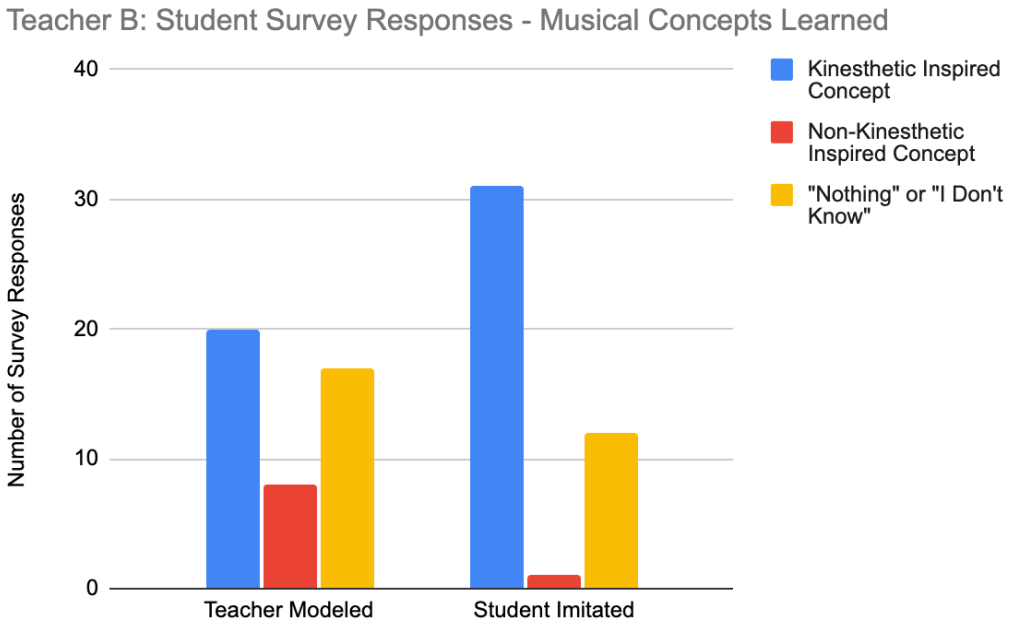


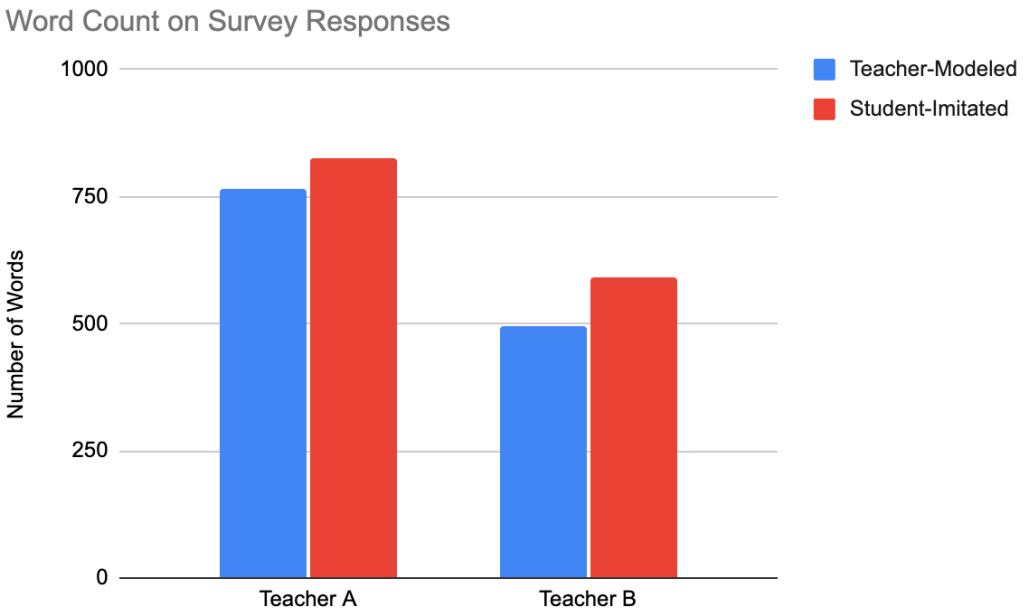
Figure 3 shows Teacher B's student responses who represented the same high levels of engagement to a "Kinesthetic Inspired Concept." In Teacher B's teacher-modeled rehearsals, there were 20 responses where a student indicated that they learned something that had been taught with a kinesthetic, 8 responses where a student indicated they learned something that had not been taught with a kinesthetic, and 17 responses where a student wrote "I don't know" or "nothing." In Teacher B's student-imitated rehearsals, there were 31 responses where a student indicated that they learned something that had been taught with a kinesthetic, 1 response where a student indicated they learned something that had not been taught with a kinesthetic, and 12 responses where a student wrote "I don't know" or "nothing." These data show higher levels of self-reported learning in *student-imitated*

rehearsal. Students said they focused on “not speeding up” and “matching tones with hand gestures.” The short-answer data sets revealed more about student enjoyment and engagement than what the Likert-type scale ratings suggest.

To quantify these results further, since students communicated about what they enjoyed and learned through this process, a word count of all survey responses was done and revealed the results in Figure 4 below. Teacher A’s students wrote 767 words (teacher-modeled) vs 825 words (student-imitated) and Teacher B’s students wrote 495 words (teacher-modeled) and 590 words (student-imitated). Students of both teachers articulated more ideas about their learning experience in a *student-imitated* rehearsal than a *teacher-modeled* rehearsal.

Figure 4

Word Count on Survey Responses



Though Likert-type scale ratings did not reveal any noticeable differences in students' enjoyment or engagement levels, the majority of students' short-answer responses showed more concepts reported when engaged in doing kinesthetic activities themselves, as opposed to only observing their teachers' modeling. In all scenarios, for both teachers, students wrote more and were more detailed and comprehensive about their responses to the music concepts taught in rehearsal.

CHAPTER 5: DISCUSSION

This study investigated the use of kinesthetic pedagogy in secondary choral classrooms to understand its influence on student engagement and learning outcomes. Three main sets of data were analyzed: teacher videotaped rehearsals, teacher final surveys, and student survey responses to each rehearsal. By comparing student responses to *teacher-modeled* and *student-imitated* kinesthetic instruction, this study aimed to identify their respective impacts on students' engagement in the music-making process and articulation of learned musical concepts.

Video footage revealed that teachers incorporated almost twice the amount of kinesthetics into a *student-imitated* rehearsal than in *teacher-modeled* rehearsals. Depending on the teacher, they seemed to incorporate more heavily the types of kinesthetics that they were most comfortable with and knowledgeable about. For example, Teacher A regularly incorporated information about the anatomical structure of the vocal mechanism, and so it is no surprise that multiple kinesthetics were utilized in the Technical Knowledge category. It is possible that teachers felt the need to produce more gestures in the *student-imitated* rehearsals, thus creating a less natural teaching pattern for them. This may also account for the additional gestures used in the General Engagement category of the *student-imitated* rehearsals. These were gestures that did not seem to have a musical concept attached but might have been intended more as “attention-getters.”

Responses to each mode of instruction indicated that students were more able (or perhaps more willing) to verbalize what they had learned in the rehearsals that incorporated *student-imitated* kinesthetics. While little difference was seen in *student-imitated* and *teacher-modeled* teaching modes, when analyzing students’ Likert-type responses to prompts, their short-answer responses showed interesting patterns of engagement and learning.

All three teachers who submitted video footage seemed very comfortable with incorporating kinesthetics into rehearsal. Though each teacher had varying styles, their demeanor and instruction felt natural. For example, one teacher moved around the room more frequently to engage various voice parts, while another teacher stood in one place the entire time and directed from the podium. Each teacher incorporated kinesthetics fairly frequently, and very frequently during the student-imitated rehearsals. This was an interesting change in behavior that could have been attributed to teachers feeling like there needed to be more movement for students to participate in for this type of rehearsal. It is possible that the sheer frequency of extra stimuli might have contributed to students' focus being heightened. It is also possible that having the students imitate each kinesthetic served as a reminder for teachers to incorporate them more.

The results of this study echo multiple findings of previous movement research. For example, the frequency of teacher use of movement to address rhythm, pitch, and vocal production match Hibbard's findings, which concluded that conductors most frequently used movement to reinforce these same concepts (1994). Teacher B used more General Engagement gestures that were less specific to musical tasks and more obviously to engage the singers. Hibbard posited that clarity of pedagogical intention of the kinesthetic facilitates student learning, which is likely why the student responses of Teacher B reflected more general enjoyment of the music than of concept mastery. Teacher A gave more explanation of the incorporated gestures, and students of Teacher A responded with more enthusiasm for learning and desire for mastery. In connection to Ryan and Deci's Basic Psychological Needs Theory (2000), it appeared students' feelings of autonomy were heightened with each explanation of kinesthetic reinforcement as their understanding of the objective supported their sense of agency in the process.

The engagement results of this study were defined by students' more in-depth responses to why and how much they engaged in rehearsal. The *Daily Student Reflections* included both Likert-type scales

and short-answer questions to record their perceptions of each piece. Their Likert-type scale ratings of rehearsals were inconclusive and showed no difference in enjoyment or engagement when measured through that method. Results indicated that they generally enjoyed both sets of rehearsals, which could be due to several factors, including the limiting nature of completing a 1-5 scale and rating an activity they already enjoy.

It is worth mentioning that this study was designed so that students' enjoyment of certain pieces could not confound the effects of the kinesthetic pedagogy variables. For example, if all student-imitated rehearsals were conducted on the same "fun piece," that might have swayed the enjoyment of those rehearsals. For this reason, kinesthetic approaches and pieces were alternated intentionally in rehearsals as part of the study design.

When completing short-answer questions, "What did you enjoy about rehearsal?" and "Describe a musical concept you focused on in rehearsal?" students revealed more about their perceptions of rehearsal by providing much more detail with their reasoning. The telling theme in their responses was how much they could articulate when a kinesthetic really aligned with the concept the teacher was trying to teach or improve. When the pedagogical intention of the kinesthetic was less clear, students were more apathetic with their answers. This demonstrates the importance of teachers' score study and lesson preparation, to ensure that students are receiving the most intentional instructional practices, including well-placed kinesthetics.

In answering the question "What did you enjoy about rehearsal," students indicated that their feeling they were progressing affected their perception of rehearsal. This aligns with Ryan and Deci's (2000) assertion that students need autonomy, competence, and relatedness to thrive. The many students whose responses fell in the "Feelings of Mastery" category cited wanting to feel competent. This reinforces the point that appropriate repertoire and sequential learning activities aid our students in enjoying choir. Students also enjoy a challenge, as stated by Freer (2007) and Dullea (2017), and their

competitive nature can be an asset to their music education. Student responses indicated when they experienced success and struggles, including the struggles of their peers.

Many student responses cited particular kinesthetics as a reason for enjoying rehearsal. For example, one student said, “I feel like "pulling the string" helped ‘cause it helps you bring the noise forward but in a good way.” Aside from analogies being helpful to accomplish a task, students also just enjoyed a stimulating and creative rehearsal space. Students also appreciated helpful teaching behaviors such as “[the teacher] giving tips after each section.” They responded well to good teaching and creative pedagogical choices.

Limitations

Kinesthetic gestures can function as a pedagogical tool for many aspects of the choral rehearsal including improving elements of ensemble performance. Students are also mentally engaged by creative and intentional movement strategies used by teachers in rehearsal. Both these functions were explored in this study, but one pedagogical purpose was not represented in the data. Teachers often incorporate Solfège and Curwen hand signs to encourage audiation and independent musicianship. None of the teachers in this study used hand signs in their instruction, though more than one did incorporate a general pitch-mapping gestural approach. Additionally, the *Final Teacher Reflection*, where teachers were asked to identify purposes for which they use kinesthetics, did not have Solfège/Curwen Hand Signs listed as one of the options to check (See *Final Teacher Reflection* in Appendix). Perhaps teachers and the investigator were more focused on engagement in the rehearsal and gave this aspect of kinesthetic pedagogy less consideration. Future investigators might modify the survey to include this category.

Another study measuring student engagement collected data over one semester, allowing for students to give ample feedback not only in survey format, but through journal entries (Briggs, 2011). The current study was completed over the course of a week, in four consecutive rehearsals, to collect

data in a counterbalanced design within a reasonable rehearsal timeframe for secondary choirs. It was hoped that multiple rehearsals would mitigate a novelty effect; however, the collection of data over an even longer period of time might have yielded more insight into student perspectives about the process.

All participating teachers returned the completed student surveys for each of the rehearsal dates, but none of the three included the Daily Teacher Survey which was meant to find out how they perceived students' engagement levels for each day. The usable data collected and analyzed daily were only from the perspective of the students.

In measuring student responses about what they learned, students sometimes reported musical concepts that were addressed with kinesthetics in a previous rehearsal. Only the comments that correlated with that day's rehearsal were counted toward each respective category. It is valuable to know that students were retaining and articulating concepts they had learned on previous days because this adds to their musical knowledge that was reinforced with kinesthetic pedagogy.

The findings of this study would have greater impact with a larger sample size. With only the perspectives of students and teachers from two schools, the data show the effects of two very different teachers instead of finding an average among many teachers' instruction. Students' grasp of musical language also varies from school to school. Some responses were clear and articulate and other responses were more difficult to decode. Student ability to articulate what was being taught hinges on their writing skills and whether that musical concept had at one point, either during this week of rehearsals or before, been explicitly stated by the teacher. Otherwise, their responses are the students' interpretation of what they think the teacher was trying to communicate in rehearsal, which can be difficult to translate for the investigator. Are they guessing, using words they have heard in rehearsal, or do they truly understand what they learned? These responses were listed in the "Nothing" or "I Don't Know" category.

The research community is just beginning to attempt to measure and understand the effects of the pandemic on student engagement in classrooms. The consequences of this global anomaly will be studied for years to come. This study is one of the first of its kind because data were collected from post-pandemic classrooms. All the literature reviewed for this study was based on engagement data collected *before* the pandemic. Some of the conclusions drawn from this study, supported by pre-pandemic research, may look different in ten years when there is more post-pandemic research on student engagement in the choral classroom.

Future Research

For the post-pandemic secondary choral classroom, new research will rejuvenate our understanding of engagement and student learning, inspiring student engagement and fostering deeper connections between teachers and students. Future research might include looking at whether students' concept of mastery (or how accomplished they feel after a rehearsal) affects their enjoyment and engagement in the rehearsal. Considering Ryan and Deci's Basic Psychological Needs Theory (2000), future researchers might measure secondary student enjoyment, compared to their autonomy, competence, and relatedness to rehearsal and their choral community. After students have experienced multiple years of uncertainty and inconsistency, additional research will also be necessary to understand what post-pandemic students need to achieve these three psychological needs in the choral classroom at various developmental levels.

Future researchers might investigate the efficiency of teacher-modeled kinesthetics versus student-imitated kinesthetics in elementary and secondary choir settings. This study focused on levels of engagement in rehearsal and whether students could articulate learned musical concepts. A similar study design might be used to measure the efficacy of certain gestures (teacher-modeled and student-imitated) on the intended musical concept for these age groups. The studies which have asked the question "do students perform better with teacher-modeled kinesthetics or student-imitated

kinesthetics" used college students in private lesson settings (Daley et al., 2022). This pedagogy may be beneficial for multiple ages.

Finally, it will be interesting to include the perspectives of middle school populations in the future. One might investigate these same questions about engagement and kinesthetic practices with middle school choral students. In addition, a much greater sample size from more areas of the United States would provide valuable perspective for choral educators to understand with greater depth what pedagogical methodologies engage students, ages eleven to eighteen, in today's climate. Much of what has been studied about student engagement prior to the pandemic must be re-examined if teachers are to best serve students in the modern choral classroom. As we navigate the post-pandemic landscape and adapt to the evolving needs of secondary singers, continued research will inform how the profession is to move forward.

‘

References

Apfelstadt, H. (1985). Choral music in motion: The use of movement in the choral rehearsal. *Choral Journal*, 37-39.

Billingham, L. A. (2001). *The development of a gestural vocabulary for choral conductors based on the movement theory of rudolf laban* (DMA).

Briggs, K. (2011). Movement in the choral rehearsal: The singer's perspective . *Choral Journal, 52*(5), 28-36.

Brunkan, M. C. (2013). The effects of watching three types of conductor gestures and performing varied gestures along with the conductor on measures of singers' intonation and tone quality: A pilot study. *International Journal of Research in Choral Singing, 4*(2), 37-51.

Campbell, P. S., & Scott-Kassner, C. (2013). *Music in Childhood: From Preschool through the Elementary Grades* (Fourth ed.). Cengage Learning.

Chagnon, R. D. (2001). *A comparison of five choral directors' use of movement to facilitate learning in rehearsals* (DMA).

Colpo, E. M. (2024). *Basic psychological needs support in the high school choral classroom: Student and teacher perspectives* (DMA).

Crosby, A. (2008). Dalcroze eurythmics techniques for the choral rehearsal . *Choral Journal,* 31-41.

Daley, C., & Rusiewicz, H. L. (2021). Manual mimicry in the teaching and learning of phonemes for singing. *Journal of Singing, 77*(4), 521-532.

Daley, C., Rusiewicz, H., Schreiber, J., & Grabowski, J. (2022). The impact of manual mimicry gestures on the learning of sung german phonemes. *International Journal of Research in Choral Singing, 10*, 108-130.

Demorest, S. (2017). Singing ability, musical self-concept, and future music participation. *Journal of Research in Music Education, 64*(4), 405-420. doi:10.1177/0022429416680096

Dilworth, R. (2012). Working with male adolescent voices in the choral rehearsal. *Choral Journal, 52*(9), 22-33.

Dullea, R. (2017). Engagement, participation, and situated learning in a children's opera chorus program.*Journal of Research in Music Education, 65*(1), 72-94.

Ebie, B. (2004). The effects of verbal, vocally modeled, kinesthetic, and audio-visual treatment conditions on male and female middle-school vocal music students' abilities to expressively sing melodies. *Psychology of Music, 32*(4), 405-417.

Eccles, J., & Wigfield, A. (2020). From expectancy-value theory to situated expectancy- value theory: A developmental, social cognitive, and sociocultural perspective on motivation. *Contemporary Educational Psychology*, 61

Elpus K. (2014). Evaluating the effect of No Child Left Behind on U.S. music course enrollments. *Journal of Research in Music Education*, 62(3), 215–233.

Freer, P. (2006). Adapt, Build & Challenge: Three Keys to Effective Choral Rehearsals for Young Adolescents . *Choral Journal, 47*(5), 48-55.

Freer, P. (2007). Between research and practice: How choral music loses boys in the "Middle". *Music Educators Journal, 94*(2), 28-34.

Freer, P. and Ververis, A. (2011). Η μεταφώνηση των αγοριών και ηχορωδιακή μουσική εκπαίδευση στις ΗΠΑ [Methaphonisi and Choral Music Education in the United States: Research and Philosophical Perspectives]. *Music Faculty Publications*. 32.

Freer, P. K. (2018). Research-to-Resource: Initial Steps in Vocal Technique for Boys Experiencing Difficulty With Phonation During the Adolescent Voice Change. *Update: Applications of Research in Music Education*, *37*(1), 9-12.

Gambetta, C. (2005). *Conducting outside the box: Creating a fresh approach to conducting gesture through the principles of laban movement analysis*

Gardner, H. (1983). Frames of mind: The theory of multiple intelligences. New York, NY: Basic Books.

Gardner, H. (2013). Frequently asked questions - multiple intelligences and related educational topics . https://howardgardner01.files.wordpress.com/2012/06/faq_march2013.pdf

Hendrickson, T. (2011). *An evaluation of kinesthetic techniques to facilitate vowel production in choral singing* (DMA).

Hibbard, T. T. (1994). *The use of movement as an instructional technique in the choral rehearsal* (DMA). doi:blob:https://www.proquest.com/bb8c7cab-2c4e-4360-b6f1-71b2fc47476a

Holt, M. (1992). *The application to conducting and choral rehearsal pedagogy of laban effort/shape and its comparative effect upon style in choral performance*

Jost, J. (2011). Sculpting the music: Gesture, movement, and expression in the choir rehearsal. *Choral Journal, 511*(7), 18-23.

Krogmann, L. (2023). *Student perceptions of the impact of kinesthetics in the choral rehearsal* (DMA).

Lewis, B. (1998). Movement and music education: An historian's perspective . *Philosophy of Music Education Review, 6*(2), 113-123. Retrieved from https://www.jstor.org/stable/40327123

Liao, M., & Davidson, J. W. (2015). The effects of gesture and movement training on the intonation of children's singing in vocal warm-up sessions. *International Journal of Music Education, 34*(1) doi:https://0-doi.org.pacificatclassic.pacific.edu/10.1177/0255761415614798

Manganello, R. M. (2011). *Movement in the middle school choral rehearsal* (DMA).

Marthaler, A. (2024). *What is Dalcroze?* Dalcroze Society of America. Retrieved January 20, 2024, from https://dalcrozeusa.org/about-dalcroze/what-is-dalcroze/

McCoy, C. W. (1989). The effects of movement as a rehearsal technique on performance and attitude of high school choral ensemble members . *Contributions to Music Education,* Retrieved from https://www.jstor.org/stable/24134238

McQuerrey, L., & Jones, W. (1980). Four techniques for the choral rehearsal . *Choral Journal, 21*(4), 5-7. Retrieved from https://www.jstor.org/stable/23545548

Pendergast, S. (2020). Understanding participation in secondary music classes: A literature review. *Update, 39*(1), 38-49.

Pendergast, S. (2021). Encouraging participation in choral ensembles . *Choral Journal, 62*(4), 39-44.

Pendergast, S., & Robinson, N. (2020). Secondary students' preferences for various learning conditions and music courses: A comparison of school music, out-of- school music, and nonmusic participants. *Journal of Research in Music Education, 68*(3), 264-285.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*(1), 68-78.

Wis, R. M. (1993). *Gesture and body movement as physical metaphor to facilitate learning and to enhance musical experience in the choral rehearsal* (Order No. 9327319). Available from ProQuest Dissertations & Theses Global. (304076686). https://pacificatclassic.pacific.edu/wamvalidate?url=https://www.proquest.com/dissertations-theses/gesture-body-movement-as-physical-metaphor/docview/304076686/se-2

Appendix A

Overview and Teacher Notes

- Prior to beginning rehearsals, teachers will send the attached Parent Permission Form via their preferred method for communication. (Learning Platform, Google Form, paper copy and signature, etc).

- Once the teacher has received parent/guardian permission forms, the teacher will communicate with the Investigator the number of students without permission. Student surveys will then be delivered to the teacher and the rehearsal schedule may commence.

- Students must fill out the Student Assent Form prior to their first survey.

- Rehearsal Schedule Overview: *(see also Daily Instructions)*
    - Day 1: Director will lead rehearsal of Piece A with student-produced gestures. Director will lead rehearsal of Piece B with teacher-modeled gestures, and not ask students to produce the gesture.

    - Day 2: Director will lead rehearsal of Piece B with student-produced gestures. Director will lead rehearsal of Piece A with teacher-modeled gestures, and not ask students to produce the gesture.

    - Day 3: Director will lead rehearsal of Piece B with teacher-modeled gestures, and not ask students to produce the gesture. Director will lead rehearsal of Piece A with student-produced gestures.

    - Day 4: Director will lead rehearsal of Piece B with teacher-modeled gestures, and not ask students to produce the gesture. Director will lead rehearsal of Piece A with student-produced gestures.

- A few procedural notes:
    - Daily student surveys will be printed on various colored paper and provided for you. Students who have not filled out a permission form will be given a pink sheet, so the investigator knows to leave out their responses. Pass out surveys in a manner typical of your own routine.
    - At the beginning of the week, identify Piece A and Piece B for yourself. The rehearsal order will alternate by day. Check the *Daily Instructions*.
    - Do not identify students by name in any videos. Instead refer to sections when giving feedback.

    - After student reflections are collected each day, the teacher will please *not* review them. At the conclusion of the study, the investigator will share survey data with cooperating teachers at their request.
    - The cooperating teacher will complete a short daily survey (to be completed at the same time as students) and a final survey, explaining their usual kinesthetic practices and feedback on this rehearsal process.
    - Surveys will be picked up by the Investigator at the end of the week. Videos will be airdropped or shared with the Investigator via Google Drive.

- A few logistical notes:
    - Teachers will adhere to the steps included in the *Overview and Teacher Notes* and *Daily Instructions*.
    - There is minimal risk involved for teachers who will be submitting videos of their teaching and their personal reflections. Steps have been taken to ensure confidentiality for all participating directors and students.
    - Data will only be available during the study to the investigator, Molly Bolewski, and the faculty advisor, Dr. Ruth Brittin. At the conclusion of the study, the Investigator will delete all videos and destroy all surveys.
    - Teacher videos and surveys will be analyzed to identify themes in kinesthetic practices of secondary choral teachers. Students' reflections will be analyzed to identify themes surrounding student engagement.
    - Teachers may have access to their students' responses at the conclusion of the study upon their request.
    - Teachers may discontinue involvement with the study at any point without penalty.

Daily Instructions

DAY 1

Prior to the beginning of class, the teacher will set up the video recording device on a tripod, angled so that the teacher is clearly in the frame. *Students may not be in the video for any of the rehearsals.*

The teacher will complete a normal warm-up routine.

Begin recording.
Rehearse *Piece A* for 6 - 10 minutes with the following treatment: **The teacher will lead rehearsal with teacher-modeled gestures and ask students to produce the gesture. "Do it with me."**

Rehearse *Piece B* for 6 - 10 minutes with the following treatment: **The teacher will lead rehearsal with teacher-modeled gestures.**

Include kinesthetics that would be natural for your teaching style.
Stop recording.

Pass out a paper copy of the *Student Reflection.* Identify songs on the board for students.

1. First selection rehearsed - Title #1
2. Second selection rehearsed - Title #2

I've provided you *Student Reflection* forms on colored paper. If students have not turned in a permission form, please ensure they use a pink form so that I can exclude their responses from the final data. Hand them out in a customary way for distributing materials that works for you.

Read the following prompt out loud to students.

> "Here is the Student Reflection for today's rehearsal of *Title #1* and *Title #2*. Respond honestly with your feedback to each question. You do not have to answer every question. Do not write your name on this sheet. You have about five minutes to write down your thoughts."

Complete *Teacher Daily Reflection*. Collect and save all surveys in the provided envelope, labeled

SCHOOL NAME - DAY 1.

Daily Instructions

DAY 2

Prior to the beginning of class, the teacher will set up the video recording device on a tripod, angled so that the teacher is clearly in the frame. *Students may not be in the video for any of the rehearsals.*

The teacher will complete a normal warm-up routine.

Begin recording.
Rehearse *Piece B* for 6 - 10 minutes with the following treatment: **The teacher will lead rehearsal with teacher-modeled gestures <u>and</u> ask students to produce the gesture. "Do it with me."**

Rehearse *Piece A* for 6 - 10 minutes with the following treatment: **The teacher will lead rehearsal with teacher-modeled gestures.**

Include kinesthetics that would be natural for your teaching style.
Stop recording.

Pass out a paper copy of the *Student Reflection.* Identify songs on the board for students.

3. First song title rehearsed - Title #1
4. Second song title rehearsed - Title #2

Read the following prompt out loud to students.

> "Here is the Student Reflection for today's rehearsal of *Title #1* and *Title #2*. Respond honestly with your feedback to each question. You do not have to answer every question. Do not write your name on this sheet. You have about five minutes to write down your thoughts."

Complete *Teacher Daily Reflection*. Collect and save all surveys in the provided envelope, labeled

SCHOOL NAME - DAY 2.

Daily Instructions

DAY 3

Start today with teacher-modeled gestures on Piece #1.

Prior to the beginning of class, the teacher will set up the video recording device on a tripod, angled so that the teacher is clearly in the frame. *Students may not be in the video for any of the rehearsals.*

The teacher will complete a normal warm-up routine.

Begin recording.

Rehearse *Piece B* for 6 - 10 minutes with the following treatment: **The teacher will lead rehearsal with teacher-modeled gestures.**

Rehearse *Piece A* for 6 - 10 minutes with the following treatment: **The teacher will lead rehearsal with teacher-modeled gestures and ask students to produce the gesture. "Do it with me."**

Include kinesthetics that would be natural for your teaching style.

Stop recording.

Pass out a paper copy of the *Student Reflection.* Identify songs on the board for students.

5. First selection rehearsed - Title #1
6. Second selection rehearsed - Title #2

Read the following prompt out loud to students.

> "Here is the Student Reflection for today's rehearsal of *Title #1* and *Title #2*. Respond honestly with your feedback to each question. You do not have to answer every question. Do not write your name on this sheet. You have about five minutes to write down your thoughts."

Complete *Teacher Daily Reflection*. Collect and save all surveys in the provided envelope, labeled *SCHOOL NAME - DAY 3*.

Daily Instructions
DAY 4

Prior to the beginning of class, the teacher will set up the video recording device on a tripod, angled so that the teacher is clearly in the frame. *Students may not be in the video for any of the rehearsals.*

The teacher will complete a normal warm-up routine.

Begin recording.
Rehearse *Piece A* for 6 - 10 minutes with the following treatment: **The teacher will lead rehearsal with teacher-modeled gestures.**

Rehearse *Piece B* for 6 - 10 minutes with the following treatment: **The teacher will lead rehearsal with teacher-modeled gestures and ask students to produce the gesture. "Do it with me."**

Include kinesthetics that would be natural for your teaching style.
Stop recording.

Pass out a paper copy of the *Student Reflection.* Identify songs on the board for students.

7. First song title rehearsed - Title #1
8. Second song title rehearsed - Title #2

Read the following prompt out loud to students.

> "Here is the Student Reflection for today's rehearsal of *Title #1* and *Title #2*. Respond honestly with your feedback to each question. You do not have to answer every question. Do not write your name on this sheet. You have about five minutes to write down your thoughts."

Complete *Teacher Daily Reflection*. Collect and save all surveys in the provided envelope, labeled *SCHOOL NAME - DAY 4*.

Appendix B

Teacher Consent Form

After reviewing the attached Teacher Instructions, I understand the process and consent to the following:

- Teachers will adhere to the steps included in the *Overview and Teacher Notes* and *Daily Instructions*.
- There is minimal risk involved for teachers who will be submitting videos of their teaching and their personal reflections. Steps have been taken to ensure confidentiality for all participating directors and students.
- Data will only be available during the study to the investigator, Molly Bolewski, and the faculty advisor, Dr. Ruth Brittin. At the conclusion of the study, the Investigator will delete all videos and destroy all surveys.
- Teacher videos and surveys will be analyzed to identify themes in kinesthetic practices of secondary choral teachers. Students' reflections will be analyzed to identify themes surrounding student engagement.
- Teachers may have access to their students' responses at the conclusion of the study upon their request.
- Teachers may discontinue involvement with the study at any point without penalty.

_____

Printed Name

_____

Signature

_____

Date

Appendix C

Student Assent Form

We are interested in what middle and high school choir students enjoy about rehearsal.

For several rehearsals, you will have the opportunity to share your opinions on the rehearsal that day. We would love to have your feedback on what you enjoyed about the rehearsal, but sharing your feedback is entirely voluntary.
You will receive a few questions about the rehearsal that focus on what you found most engaging and enjoyable during the rehearsal. This will happen over four short rehearsals in one week.

Once the project starts, you can omit questions or discontinue at any time.

If you would like to share your opinions on upcoming rehearsals, please sign your name below. Your parent(s) have already indicated that it is alright with them if you fill out the reflection.

Student Name: _____

Appendix D

PARENT PERMISSION FORM

Student Name: _____

Principal Investigator: Molly Bolewski
Faculty Advisor: Dr. Ruth Brittin
Study Title: *Choral Students' Perceptions of Kinesthetic Pedagogy in the Middle and High School Choral Classroom*

Dear Parents and Guardians,
My name is Molly Bolewski and I am a masters candidate at University of the Pacific. I am conducting a research study of middle and high school students to assess their perceptions of various pedagogical practices in the choral classroom. Name of High School is familiar with and has given me permission to conduct this research at the school, and Teacher's Name is facilitating this communication to you to tell you about the study and give you an opportunity to decide that you do not want your child to participate, if that is your preference.

If you allow your child to participate, we will ask them to complete four short surveys-- one at the end of each rehearsal during the week of _____. Survey questions pertain to your child's reactions to choral instruction. Each survey will take no more than 5 minutes, and will be completed at the end of each rehearsal. If a child indicates at any time that they do not want to fill out the survey, they will not be required to do so. *Note: The teacher will be videotaped to record their pedagogical practices and students will not be in the frame nor specifically identified.*

There are no known risks to your child from participating in this study. Their grades and class standing will not be affected in any way if they do, or do not, participate. Your child will potentially benefit from this research because the results may inform teacher practices in School District Name.

This research is anonymous. No names or other identifying information will be collected. If a report of this study is published or presented at a professional conference, only group results will be communicated and not individual responses.

The research team is happy to answer any questions you have about the study. Please contact Molly Bolewski at m_bolewski@u.pacific.edu. If you wish to share a concern or complaint, please contact the University of the Pacific Institutional Review Board for Human Participants (IRB) at irb@pacific.edu.

If you do want your child to participate, select YES.
If you do not want your child to participate, select NO.

Please return this form by _____. Thank you!

Principal Investigator: Molly Bolewski
Faculty Advisor: Dr. Ruth Brittin
Study Title: *Choral Students' Perceptions of Kinesthetic Pedagogy in the Middle and High School Choral Classroom*

Appendix E

Google Form link for the below form.
https://forms.gle/NhehLHyvHHorywQQ9

Note: This reflection is voluntary. You may leave any questions blank you do not want to answer.

FINAL TEACHER REFLECTION

Thank you for your participation in this study. Your time and efforts will contribute to a growing body of literature about kinesthetic practices and student perspectives in the choral classroom.

Answer the questions below considering your usual teaching practices. If you teach multiple grade levels, please answer the following questions in regard to the level of ensemble used for this study.

1. Name

2. School

3. What is the customary length of your rehearsals?

4. Consider your typical teaching practices. Which scenarios would you most likely incorporate kinesthetic gestures? Check all that apply:

    - Learning notes and rhythms in rehearsal
    - Working on tone and/or vowel shape
    - Reinforcing classroom instructions
    - Physicalizing an articulation
    - ASL or "Choralography" in performances
    - Establishing (or re-establishing) tempo
    - Encouraging musical expressivity/phrasing
    - Improving intonation
    - Nonverbally reminding students of a concept while students are singing
    - Physicalizing an anatomical concept (ie. Breathing)
    - Other: _____

5. I value incorporating movement in student performances.

Strongly disagree				Strong agree
1	2	3	4	5

6. In rehearsal, I include kinesthetic gestures primarily to reinforce musical concepts.

Strongly disagree				Strong agree
1	2	3	4	5

7. In rehearsal, I incorporate kinesthetic gestures as an engagement tool for my students.

Strongly disagree				Strong agree
1	2	3	4	5

8. What aspects of choral singing do you find kinesthetics to be most beneficial? List as many as you like. Be as detailed as you like.

9. Describe any realizations that might have occurred to you in the midst of this study.

10. Did you find it difficult to switch on and off inviting students to do the gesture with you?

11. How comfortable are your students doing the kinesthetics along with you in rehearsal?

12. Please give any feedback as to the user-friendliness and the effectiveness of this study design.

Appendix F

DAILY TEACHER SURVEY

Note: This reflection is voluntary. You may leave any questions blank you do not want to answer.

1. Rehearsal Number: 1. 2. 3. 4.

2. Today, about how many students produced kinesthetic gestures when asked?
    a. 25%
    b. 50%
    c. 75%
    d. 100%

3. Any comments on teacher-modeled kinesthetic rehearsal:
    _____
    _____
    _____
    _____
    _____

4. Any comments on the student-produced kinesthetic rehearsal:
    _____
    _____
    _____
    _____
    _____

Appendix G

STUDENT REFLECTION

Note: This reflection is voluntary. You may leave any questions blank you do not want to answer.

Piece #1 = the first piece you rehearsed today
Piece #2 = the second piece you rehearsed today

1. On a scale of 1 to 5, how much did you enjoy today's rehearsal of Piece #1?
   did not enjoy strongly enjoy
   1 2 3 4 5

2. What did you enjoy about it?
   _____
   _____

3. On a scale of 1 to 5, how engaged did you feel in the music rehearsal process of Piece #1?
   Not engaged Very engaged
   1 2 3 4 5

4. Describe a musical concept you focused on in Piece #1?
   _____
   _____
   _____
   _____

5. On a scale of 1 to 5, how much did you enjoy today's rehearsal of Piece #2?
   did not enjoy strongly enjoy
   1 2 3 4 5

6. What did you enjoy about it?
   _____
   _____

7. On a scale of 1 to 5, how engaged did you feel in the music rehearsal process of Piece #2?
   Not engaged Very engaged
   1 2 3 4 5

8. Describe a musical concept you focused on in Piece #2?

_____
_____
_____
_____

Appendix H

IRB Approval

Date: 11-15-2023

IRB #: IRB2023-204
Title: Choral Students' Perceptions of Kinesthetic Pedagogy in the Middle and High School Choral Classroom
Creation Date: 10-25-2023
End Date:
Status: Approved
Principal Investigator: Molly Bolewski
Review Board: IRB
Sponsor:

Study History

Submission Type	Review Type	Decision
Initial	Expedited	Approved

Key Study Contacts

Member Ruth Brittin	Role Co-Principal Investigator	Contact [redacted]
Member Molly Bolewski	Role Principal Investigator	Contact [redacted]
Member Molly Bolewski	Role Primary Contact	Contact [redacted]

Appendix I

IRB Protocol

Research/Activity Title

Choral Students' Perceptions of Kinesthetic Pedagogy in the Middle and High School Choral Classroom

A.1 Please explain the purpose and objectives of the research.

The purpose of this study is to identify patterns in kinesthetic practices and student engagement when middle and high school singers are prompted with *student-produced kinesthetic gestures* or *teacher-modeled kinesthetic gestures*. The focus of this study is to answer the following questions:

- What are the primary gestures used by secondary choral directors to encourage musical expressivity?
- Do students perceive a difference in their own music-making process when they are engaged in movement?
- Do students feel more invested in the process of music making when they are engaged in movement?
- Do students feel more invested in the process of music making when they understand the musical reason for the gesture?

A.2 Contribution to or development of generalizable knowledge

- Participating students will have the opportunity to think critically about their music-learning experience.
- Participating directors will have video footage of themselves rehearsing their ensemble, which is a valuable teaching tool for professional growth. Participating directors may also consider the effects of student-produced gesture vs teacher-modeled kinesthetic usage on their rehearsal process.
- Districts will benefit from the teacher better understanding how to engage students in the choral rehearsal. In an age of accelerated cell phone usage and shortened attention spans, teachers must work to engage their students in the music-learning process, including intentional kinesthetic practices.

B.1 Target Subject Population

- Middle and high school choral students
- Middle and high school choral directors

B.2 Maximum number of subjects

- 250

B.3 Describe the recruitment process

Recruitment Methods

- ■ Choral educators were contacted if they were within 50 miles and had collaborated with our university teacher education programs in the last two years.
- ■ All directors are part of CMEA's Bay Section (our regional music educators association)

B.4 How were participants recruited

- Emails were sent to directors.
- Permission forms will be sent to students families for approval (see attached)

B.5 Inclusion/Exclusion Criteria

b) Inclusion and Exclusion Criteria

- ■ Director must teach at least one middle school or high school choral ensemble
- ■ Directors who have at least three years of experience
- ■ Prior use of regular movement in rehearsal is not necessary
- ■ All directors are within the Bay Section, our regional division of CMEA.
- ■ Adults unable to consent: *excluded*
- ■ Infants: *excluded*
- ■ Children: *12 years and older are included*
- ■ Teenagers: *included*
- ■ Pregnant women: *it is possible, though highly unlikely, that females of age involved in the study may be pregnant*
- ■ Prisoners: *excluded*
- ■ Individuals who do not understand English: *excluded*

B.6 Does this study include minors?

- Children and teenagers ages 11-18

B.7 Does this study include adults?

- YES

B.8 Will all research be conducted in English?

- YES

B.9 Where will research activities involving subjects occur?

- Ensembles will be identified by each cooperating teacher's preference. One ensemble per school site will be included. Participant numbers will vary between 20 and 100 students per ensemble. Each session will take place in the cooperating teacher's usual rehearsal space.

- Verbal permission to conduct this study has been obtained from music educators at the following schools. Upon approval from the University of the Pacific IRB, written permission from each school district will be added to the protocol as modifications.

B.10 If any vulnerable populations are being used, please justify

- This study will include individuals who are not yet adults (children and teenagers ages 11-18) The desired data surrounds the middle and high school rehearsal and therefore requires subjects that teach and learn in that space.

C.1 DESCRIBE RESEARCH ACTIVITIES

1) Expected Amount of Time subjects will be involved in each study :
   - ■ Duration of subjects' participation in the study:
     (1) 60-80 minutes of rehearsal (4 rehearsals @ 20 minutes each.) *This study is designed to allow for teachers to teach normally without adding extra repertoire.*
     (2) 20 minutes for the student survey (4 surveys @ 5 minutes each)
     (3) Teacher Only: 20 minutes for final survey
   - ■ Duration anticipated to enroll all study subjects: 2 weeks
   - ■ Estimated date to complete study: 4 months
2) Procedures Involved in the Human Research
   a) Director will execute their usual warm-up routine.
   b) Rehearsal sessions will be scheduled by the participating choral educator at each school; research sessions (n = 4 rehearsals) are no more than 20 minutes long (10 minutes per piece). Rehearsals must happen within one week.
   c) Rehearsal criteria will rotate each day:
      - ■ <u>Day 1</u>: Director will lead rehearsal of Piece A with student-produced gestures. Director will lead rehearsal of Piece B with teacher-modeled gestures, and not ask students to produce the gesture.

- Day 2: Director will lead rehearsal of Piece B with student-produced gestures. Director will lead rehearsal of Piece A with teacher-modeled gestures, and not ask students to produce the gesture.
- Day 3: Director will lead rehearsal of Piece B with teacher-modeled gestures, and not ask students to produce the gesture. Director will lead rehearsal of Piece A with student-produced gestures.
- Day 4: Director will lead rehearsal of Piece A with teacher-modeled gestures, and not ask students to produce the gesture. Director will lead rehearsal of Piece B with student-produced gestures.

d) Students will take an anonymous survey following each rehearsal session (4 student surveys total). The teacher will complete a short daily reflection as well. All surveys will be completed with paper and pencil and will be submitted to a labeled folder for that day's session. Teachers will seal the folder without reviewing student responses.

e) Student surveys will be printed on various colored paper. Students who have not filled out a permission form will be given a pink sheet, so the investigator knows to leave out their responses.

f) The cooperating teacher will complete a final survey, explaining their usual kinesthetic practices and their feedback on this rehearsal process. This survey will be completed via Google Form for the teacher and investigator's convenience.

g) Paper surveys will be picked up by the investigator at the end of the week. Videos will be airdropped or shared with the investigator via Google Drive. The *Final Teacher Reflection* will be required from teachers by the end of the weekend.

C.2 How will information be collected?

Questionnaires - attach student, teacher daily, and teacher final surveys

Observances - video of teacher

D.1 How will information be recorded?

Questionnaires - The *Daily Student Reflection* and *Daily Teacher Reflection* will be completed on paper and will be recorded in QUESTAR? The *Final Teacher Reflection* will be completed via Google Form and shared directly with the Investigator.

Observances - The video will be shared through Google Drive, from teacher to the Investigator.

D.2 Medical Records

NO

D.3 Who will have access to the gathered data/specimens, and how will confidentiality be maintained during the study, after the study, and in reporting the results?

- The investigator and faculty advisor will have access to the data. During the study, students will *not* be included in the video and will not be referenced by name during the rehearsal. Students will remain completely anonymous. Student surveys will be completed and reported anonymously. Teacher survey data will only be available to investigator and faculty advisor. Teachers will not be identified in the reporting of results.

D.4 What are plans for information after completion of the study? Methods of destroying data.

- Results will be shared with participating choir directors, who then may choose to share findings with their students and students' parents. Findings will be made available via email.
- The results will be reported and data presented in the final masters thesis. After the conclusion of the defense process, all videos and documents will be deleted from Google Drive and paper surveys will be shredded.

E Benefits, Risk, Costs

Physical NA

Psychological NA

Sociological Minimal -

- Participants may be concerned that if they report their thoughts about teacher practices that it may affect their social standing with the teacher.
- Surveys will be completed anonymously and students have the option not to answer questions if they're concerned about being identified by their handwriting.

Loss of Confidentiality

- "" see above.

E.3 Costs (Time Spent)

Duration of subjects' participation in the study:

1. 60-80 minutes of rehearsal (4 rehearsals @ 20 minutes each.) This study is designed to allow for teachers to teach normally without adding extra repertoire.
2. 20 minutes for the student survey (4 surveys @ 5 minutes each)
3. Teacher Only: 20 minutes for final survey

E.4 Potential Benefits

- Participating students will have the opportunity to think critically about their music-learning experience.
- Participating directors will have video footage of themselves rehearsing their ensemble, which is a valuable teaching tool for professional growth. Participating directors may also consider the effects of student-produced gesture vs teacher-modeled kinesthetic usage on their rehearsal process.
- Districts will benefit from the teacher better understanding how to engage students in the choral rehearsal. In an age of accelerated cell phone usage and shortened attention spans, teachers must work to engage their students in the music-learning process, including intentional kinesthetic practices.

E.5 Compensations

NONE