Learning new tricks: Teacher self-improvement in Kodály Solfege study and its relation to student growth

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Learning New Tricks:
Teacher Self-Improvement in Kodály Solfege Study
and Its Relation to Student Growth

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A thesis submitted to the Graduate Faculty of

JAMES MADISON UNIVERSITY

In

Partial Fulfillment of the Requirements

for the degree of

Master of Music

School of Music

May 2019

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DEDICATION

This document is dedicated to my students. Thank you for helping me develop into a more highly effective choral music educator. Without your musicianship, willingness, and effort, this study would not have been possible.
ACKNOWLEDGEMENTS

Thank you to Dr. Jo-Anne van der Vat-Chromy, thesis advisor, for her encouragement, creativity, and perseverance. I have learned so much during the process of researching and writing my masters document and will forever be in her debt for leading me to new pathways of teaching. My sincere thanks to Dr. William Dabback for his expert research and data analysis advice, and to Dr. Lisa Maynard for her generous and thorough editing. Special thanks to Karen Edwards and Matthew Cline-Taskey for their assistance in editing and formatting, and to Brandon Miller for his grounded humor and constant encouragement. Finally, my love and thanks to Phillip and Joanna Ryman for their unending love and support during this process.
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ABSTRACT

Music literacy and its acquisition are vital components of all high school choral programs. Chief among the skills necessary and developed at the high school level are audiation, sight-reading, and the acquisition of age appropriate choral literature. Over time, research has informed best practices in choral pedagogy to include specific implementation of audiation and sight-reading programs based on the developmental hierarchy of student music learners. The Kodály system, developed by Hungarian music educator and composer Zoltán Kodály in the ’40s and ’50s, and researched and documented in studies from the ’60s through ’80s, is based on the foundation that only activity can lead someone to a real understanding and appreciation of music. Simply listening to music is not enough to develop these skills.¹

The two-fold purpose of this study was to: (1) implement a Kodály-inspired methodology and measure student progress in sight-reading within a highly successful high school choral program as a best practice in sight-reading and music literacy pedagogy; and (2) reflect on the learning process of a highly experienced and successful mid-career high school choral music educator who has made the decision to upgrade his current pedagogical implementation through study and usage of the Kodály method, with a particular focus on sight-reading.

The participants were sorted into two descriptive categories and three descriptive subgroups. Students were placed into one of two categories: Previous Kodály Experience Sight-Reading Category; and No Previous Kodály Experience Sight-Reading Category. After the pretest was administered, students were placed into one of three subgroups: (1)

Proficient Musician Sight-Reading Subgroup; (2) Capable Musician Sight-Reading Subgroup; (3) Developing Musician Sight-Reading Subgroup; (4) Resultant data were sorted and compared within this framework.

During the fall semester of 2014, six pre-, mid-, and post-tests were administered in sight-reading activities that had been developed with the intent of measuring and comparing student growth in sight-reading skills using techniques borrowed from the Kodály method over the course of the given semester. Throughout the semester, a developmentally sequenced course of study in solfege and sight-reading was implemented as part of the choir curriculum for high school students enrolled in a choir program in the state of Virginia. Results indicated that: (1) all participants improved after the Kodály-inspired treatment; (2) the Proficient Musician Sight-Reading Subgroup improved the least, although the mean scores for their group were the highest; and (3) on five of the six testing examples, the Capable Musician Sight-Reading Subgroup increased the most, even though mean scores were lower than those in the Proficient Musician Sight-Reading Subgroup. Recommendations based on these findings were identified for further research.
CHAPTER 1: INTRODUCTION

Given a Western-European mindset, the development of music literacy (i.e. the ability to read, translate, and recreate previously unknown music from a score) is of paramount importance at all levels of music education in the United States, and most emphasized specifically at the secondary level. In a choral ensemble, a vital component of the music literacy curriculum includes sight-singing. Sight-singing is a skill where a person sings music at first sight without preparation.\(^2\) The term sight-reading can be used in the same context.

As identified for this study, Kodály-inspired music education is defined by the following tenets: (1) music education should begin in early childhood, between the ages of three and seven; (2) as the human voice is the most beautiful and accessible “instrument” for everybody, the voice should serve as vocal foundation for music learning; (3) the music used by music teachers must be of the highest quality, as determined by the beauty of the melody and lyrics, and the music’s endurance over time; (4) singing is most effectively taught by a value-centered selection of materials based on the “musical mother tongue” (folk music); (5) musical literacy—the ability to read, write, and think music—is the primary means for musical independence, and is the right of every human being; (6) the teaching of music reading and writing should be based on relative solmization (movable do); and (7) teachers should construct lessons around a child-centered, discovery-based (Pestalozzian) learning sequence. (Choksy, 1981; Ittzés,

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2004; Kodály, 1974; Sinor, 1997; Szönyi, 1973). Through a pedagogical approach to choral singing that incorporates these essential tenets of the Kodály method, an auditory system for music literacy and sight-singing can also be established in the traditional high school choral program for students without prior experience with the method in elementary or middle school that will ameliorate literacy development for older singers.

Music literacy and acquisition are vital components of all high school choral programs. Chief among the skills necessary and developed at the high school level are audiation, sight-reading, and the acquisition of age-appropriate choral literature. According to Gordon Music Learning Theory, audiation “takes place when we hear and comprehend music for which the sound is no longer or may never have been present.”

Sight-reading, as defined by Merriam-Webster, is “to read (something, such as a foreign language) or perform (music) without previous preparation or study.” The improvement of these two skills in a high school choral program can increase music acquisition skills and can promote the growth of music literacy.

Over time, research has informed best practices in choral pedagogy to include specific implementation of audiation and sight-reading programs based on the hierarchical development of student music learners. Kodály methodology is an audiation focused, sequentially-based, comprehensive program used to develop fundamental musical skills as well as introduce the reading and writing of music before moving onto

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3 Baumann, Paul Joseph (University of Maryland). “In Search of Signature Pedagogies For Teacher Education: The Critical Case of Kodály-Inspired Music Teacher Education.” University Of Maryland, 2010 Print.164.


more advanced skills, with folk and art songs serving as the repertoire studied. Kodály emphasized an experience-based method that includes the study of solfege and the use of Curwen-Glover hand signs, the study of music of the people, and the creation of quality music through singing. Developmental hierarchy is defined as an experience-based, sequential approach to music curricula. The Kodály system, developed by Hungarian music educator and composer Zoltán Kodály in the ’40s and ’50s, and researched and documented in studies from the ’60s through ’80s, has found a valued place in the contemporary choral pedagogy of many countries beyond Hungary, including the United States, England, and Australia. However, choral music education teacher training across the United States has differed significantly, both over time and in regional foci based on whether or not students were trained in the Kodály method in their undergraduate studies. As a mid-career teacher (and the researcher for this study), realizing that my academic training may not have included enough study of other best practices to assist in the teaching of audiation and music literacy to my students, initially the idea of implementing a Kodály-based curriculum was overwhelming, discouraging, and frustrating. Making the decision to seek additional coursework and adapt my teaching strategies and methodological practices midstream in my professional career as a choral music educator carried with it seeds of both crisis and opportunity with the ultimate goal of student improvement.

At the time of this study, I was a twenty-two year career music educator, working in two school divisions in the southern part of rural Virginia. The indicators of my choral program’s achievements have included: appearances at Carnegie Hall; superior ratings in

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music festivals; performances at state conference; and student participation in All District Choir, All State Choir, and Honors Choir events. However, over time, through attending conferences and working with numerous student teachers from various state universities, I became aware of potential developmental gaps in my own knowledge of teaching pedagogy. Given my natural tendency as a lifelong learner, and after careful reflection, I realized that I could seek training to make a change in my approach to music acquisition skills. Through my informal observation of several student teachers, as well as reading multiple research studies that delineated the advantages of using the solfege method, I came to the conclusion that learning how to teach and apply the principles of the Kodály Method and using it’s associated solfege system might be the means by which to most advantageously benefit to my high school students' ability to sightread and sightsing with greater accuracy than the methods I was using at that time would.

Therefore, in the summer of 2014, in conjunction with beginning graduate studies toward a Master’s of Music in Music Education degree, I also completed my Level 1 Kodály Certification at a large public university in the state of Virginia. The combination of my graduate coursework, conducting lessons, and my enrollment in the Level 1 Kodály course created a confluence of ideas that resulted in the research design for this study. During my studies, it was my own challenge to myself to restructure my teaching methodology in order to incorporate and integrate the Kodály-inspired methodology in an

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already highly functional secondary choral program with the intended outcome of further improving the quality of the educational training for students enrolled in my choirs.

Need For The Study

The need for this study grew out of both personal and professional experiences. I found myself to be a mid-career teacher in search of next steps in journey of lifelong learning. Additionally, in the course of my work as a co-operating teacher with several student teachers whom I observed using the method, it became evident to me that the integration of a Kodály-inspired methodology might have the potential to positively impact a number of aspects specific to my own students’ needs. Specifically, I hypothesized that using the Kodály method would more than likely positively impact both my own choral rehearsals and my professional practice through the following: (1) the process of music literacy and sight-reading; (2) the personal assimilation of a new paradigm of audiation through completing Level One Kodály teacher certification; and (3) the underpinning of Kodály methodology as the departure point for high school choral ensembles have formed the basis of this study.

Kodály’s philosophy emphasized that music education should begin in early childhood and should continue throughout life to create a musically literate society. Research suggested that Kodály’s method, when combined with the use of Curwen-Glover hand signs can be especially effective in improving the singing skills of choral students at the secondary school level. The results of the research studies mentioned in my review of literature (Demorest, 2004; Demorest and May, 1995; Hanson, 1990; Kielczewski, 2011; Killian and Henry, 2005; Kuehne, 2003; Reece, 2003; Sheldon, 1998;
Thomsen, 2011) support the hypothesis that a sequential and consistent approach to teaching sight-singing that employs Kodály methodology may be more effective in increasing music acquisition skills than other approaches. This study will use a testing instrument unlike any of the aforementioned studies. The results of this study will help to resolve the research question.

Therefore, the two-fold purpose of this study was to: (1) implement a Kodály-inspired methodology and measure student progress in sight-reading within an established high school choral program as a means of developing the choral participants’ best practices in sight-reading and music literacy pedagogy; and (2) to document my experience as an educator/researcher of upgrading my existing pedagogical knowledge about the Kodály method, along with its means of implementation with a particular focus on sight-reading with the intent of assisting my choral students in improving their own sight-reading skills.

Definition of Terms

The following terms are central to the understanding of this research project and are defined as follows

Audiation: takes place when we hear and comprehend music for which the sound is no longer or may never have been present

Curwen-Glover Hand Signs: The tonic sol-fa method of teaching vocal music that incorporates a pitch hand sign system that was designed by John Curwen and based on the work of Sarah Glover.

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Developmental Hierarchy: An experience-based, sequential approach to music curricula

Kodály Methodology: A sequentially-based, comprehensive program used to train musical skills and teach the reading and writing of music using folk and art songs. Kodály emphasized an experience-based method that includes the study of solfege and the use of Curwen-Glover hand signs, the study of music of the people, and the creation of quality music through singing.

Kodály, Zoltán: (1882-1968) Composer and Hungarian folk music expert and architect of a music education system widely used in Hungary and now adapted for use worldwide.

Lifelong Learning: A span of time from cradle to grave that that includes the continuation of learning through adulthood in more independent and often less formal ways.

Sight-reading: to read (something, such as a foreign language) or perform (music) without previous preparation or study

Sight-singing: The singing of a written piece of music at first sight.

Delimitation

Given the scope of this project, and that it was implemented within the curriculum of a high school choral program where I was the sole grader, I served as the only rater for this study.

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Kodály-Inspired Music Education

As part of the process of teaching their students to sight-sing with more accuracy, many choral music educators throughout the United States regularly implement pedagogical elements that are commonly associated with what is known as the “Kodály Method” into the context of their classes and rehearsals. During his lifetime of work as a composer, ethnomusicologist, and educator Zoltán Kodály (1882-1967), through his writings, created a summative pedagogy of best practices in music education. These practices stemmed from an auditory approach that is both infused with, and stems from, both the art and folk music traditions of Hungary. Kodály was a composer, folk music expert, and architect of the music education system widely used in Hungary, and now adapted for use worldwide.

Kodály methodology is a comprehensive program intended to train musical skills and teach the reading and writing of music through the use of folk songs, and an auditory, sound to symbol approach. The pedagogy is sequential in nature. Kodály emphasized an experience-based method that includes the study of solfege and the use of Curwen-Glover hand signs, the tonic sol-fa method of teaching vocal music that incorporates a pitch hand sign system, the study of folk music as the authentic music of the people, and the creation of music through singing.16

Much research exists exploring and delineating the benefits of a Kodály-inspired methodology in the choral classroom. Baumann (2010) designed a collective case study

with the purpose of examining in depth the curriculum of two Kodály-inspired music education programs. The first of these was The Kodály Institute at Capital University in Columbus, Ohio, while the second was The Kodály Center for Music Education at Holy Names University in Oakland, California. Through his research, Baumann identified key pedagogies that could then be used in Kodály-inspired music education programs, as well as assessing their applicability to choral music education classrooms in the United States. Specifically, Baumann identified four key pedagogies associated with the Kodály method that could easily be transferred to the context of choral school music programs using Kodály-inspired teaching strategies. These were: (1) demonstration teaching; (2) master class teaching; (3) discovery learning; and (4) the collection of music literature into a sequentially ordered resource song collection. The findings of his study were consistent with the assertion that signature pedagogies are connected in complex and varied ways to the socio-cultural contexts and professional fields in which they exist, and can have a positive influence on music acquisition skills.

Although the pedagogical systems teachers implement may vary widely in scope and sequence, most choral music educators implement some use of sight-reading, and many follow a basic framework similar to the method introduced by Zoltán Kodály. For the purposes of this study, Kodály-inspired music education is defined by the following tenets: (1) music education should begin in early childhood, between the ages of three and seven, (2) as the human voice is (a) beautiful and accessible “instrument” for everybody, the voice should serve as vocal foundation for music learning, (3) the music used by music teachers must be of the highest quality, as determined by the beauty of the melody and lyrics, and the music’s endurance over time, (4) singing is most effectively
taught by a value-centered selection of materials based on the “musical mother tongue” (folk music), (5) musical literacy - the ability to read, write, and think music is the primary means for musical independence, and is the right of every human being, (6) the teaching of music reading and writing should be based on relative solmization (movable do), (7) teachers should construct lessons around a child-centered, discovery-based (Pestalozzian) learning sequence. (Choksy, 1981; Ittzés, 2004; Kodály, 1974; Sinor, 1997; Szönyi, 1973).17 Through a pedagogical approach to choral singing that incorporates these essential tenets of the Kodály method, an auditory system for music literacy and sight-singing can be established.

Application of the Kodály method in the high school choral classroom often begins with a warm up. Moehrke (1990) focused on the integration of Kodály-sequenced vocal material in designing effective warm ups. The researcher concluded a warm up time of eight to ten minutes is advantageous for both vocal production and proper singing technique. A warm up time should consist of instruction in correct breathing, rhythm and melody development, and beginning part-singing, all of which can be ameliorated by Kodály sequencing in these exercises. Moehrke developed a series of ten lesson plans for warm ups focused on the Kodály concept in the areas of physical activity, breathing activity, and rhythmic drills and exercises to help maintain good intonation and resonance. The lesson plans were sequential and designed to lead a group of middle school singers into independent two-part singing.

“Hungarian children educated in the Kodály approach have been known to cultivate tonal memory through developing pitch perception." Hanson (1990) focused on a systematic approach to sight-singing for high school students of varying abilities from inexperienced to pre-college music major. Results suggested that the approach used in the study led to improvements over a semester as evidenced by pretest, midterm and posttest. The results of the study also seemed to suggest that students who struggled with a given exercise performed better if they used Curwen-Glover hand signs while sight singing.

Darazs (1973) studied the work of Kodály and examined Kodály’s belief that the foundation of music education should be in singing and through this, a musical culture would develop. Darazs discussed Kodály’s belief that ear training exercises should be used in the classroom to develop listening skills, and that a moveable do should be used with the Curwen-Glover hand signs along with simplified sol-fa notation. Kodály also advocated singing without the assistance of an instrument.

Cousins and Persellin (1986) proposed that the use of Curwen-Glover hand signs can be both kinesthetic and visual, and that the consistent use of hand signs and solfege helps singers to recognize patterns and link audiation to written music. For the purposes of their study, forty-seven first graders in a suburban elementary school in San Antonio were assessed in order to examine the effectiveness of implementing Curwen-Glover hand signs while sight-reading. Half of the student participants received sight-reading instruction using solfege only, while the other half was taught using solfege and hand signs. The researchers reported that the vocal accuracy of both groups had improved post

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18 Hanson, Deborah (Silver Lake College). “A Kodály -Oriented Sequential Approach to Melodic and Rhythmic Sight-Reading for the Heterogeneous High School Choir.” Silver Lake College, 1990. Print.
assessment, with the hand sign group measuring with a 15% increase in vocal accuracy and the solfege-only group measuring with an increase of 13%. While a very small difference in percentage and subsequently not a significant difference, the researchers noted the importance of using Kodály-based methods to assist in teaching students to sing more accurately, and also noted that their results seemed to suggest that both approaches (hand signs and solfege, and solfege alone) seemed effective in improving students’ accuracy of singing at the elementary school level.

Theusch (2000) investigated the use circle games and songs in the “mother tongue” correlated with the Kodály concept of music education and Howard Gardner’s Theory of Multiple Intelligences. As part of this process the researcher collected and categorized singing games from around the world appropriate for K-3 grade students. Howard Gardner’s Theory of Multiple Intelligences (1983) was used in the process of decision-making with regard to the selection of age appropriate and learning style appropriate singing games. Results suggested that one of the founding concepts of Kodály’s early childhood education included exploration of music through songs, music, and singing games. Kodály’s writings espoused that light-hearted exploration of music would lead to finding a sense of joy in music, which would in turn lead to the creation of a musical culture filled with lifelong music appreciators.

In summary, the Kodály-inspired method of teaching music is sequential in nature and is focused on the utilization of music of the people. Therefore, singing can be considered as being the basis of music education for all people. Kodály’s philosophy emphasized that music education should begin in early childhood and should continue throughout life to create a musically literate society. Research suggested that Kodály’s
method, when combined with the use of Curwen-Glover hand signs can be especially effective in improving the singing skills of choral students at the secondary school level.

Sight-Singing and Music Literacy

As previously mentioned, the development of music literacy, the ability to read, translate, and recreate previously unknown music from a score, is paramount to successful music acquisition at all levels of music education in the United States, and even more so at the secondary school level. The terms sight-singing and sight-reading can be used in the same context in choral music education settings. Based on the findings of the following studies and articles, we can assume with a certain amount of accuracy that: (1) most choral directors use some sort of sight-reading as a part of their music education program; (2) the most successful way to teach sight-reading is through a systematic and consistent method; and (3) much research exists that explores and highlights the benefits of a Kodály-inspired teaching method in choral music education classrooms.

Demorest and May (1995) compared several historical studies that examined how high school choral directors taught and evaluated sight-reading during choral rehearsals. Results suggested that using a fixed do or moveable do made no statistical difference in improving the sight-reading performances of the population studied. In a related follow-up study, Demorest (2004) found that the spread of the scores of high school students tested on sight-reading was quite broad. A survey of all members of the top two choirs from four Texas high schools (n=414) examining the effect of outside learning on the capabilities of the students tested, suggested that choral education, instrumental
education, and private keyboard instruction were all significant factors in higher test scores. Of those, students with previous keyboard instruction tested the highest.

Demorest (2004) also explored the teaching practices of middle and high school choral instructors. The study included 272 choral music teachers from 45 states within the United States, and two from Canada. A survey was created and posted on the ACDA and MENC websites, and participation was by self-selection. Due to the self-selection process involved in soliciting participants for this study, the results may not be representative of all choral directors. Demorest examined three major areas of the teaching of sight-singing: (1) sight-singing and contest preparation; (2) preferences for pitch and rhythm reading systems; and (3) approaches to individual assessment. Findings reflected that a large percentage of instructors surveyed used the movable do pitch reading system. Demorest concluded that more sight-singing opportunities should be offered at assessment performances as a means to motivate instructors to teach sight-singing more frequently. The researcher also found a positive trend toward using more individual assessments as part of sight-singing instruction methodology.

The purpose of Reece’s (2003) study of sight-reading skills was to assist his suburban Illinois high school choir members in gaining skill and confidence in sight-reading literature without the use of a piano. Using a sequential six-week plan of instruction, Reece reported a 50% increase in the accuracy of sight-reading skills. While a goal for improving the overall class score by two points at a state competition when compared with the previous year’s score had been set, that goal was not met. The choir improved by one point at their next state competition.
Killian and Henry (2005) explored two important contributors to accurate sight-singing with a group of 198 high school singers who could be grouped according to both high accuracy and low accuracy sight-singing. These contributors were: (1) practice strategies; and (2) performance strategies. Results suggested that adequate preparation time was vital to the development of high-accuracy sight-singing skills. Effective practice/rehearsal strategies suggested for use during this preparation time included singing out loud during practice time, using hand signs, and maintaining a steady beat. The researchers also found a strong correlation between the combination of sight-singing instruction and periodic testing. The results of the study also suggested that the use of Curwen-Glover hand signs could yield a significant improvement in the sight-singing success of high school choral singers.

Kuehne (2003) conducted a survey of 152 choral music educator members of the Florida Vocal Association, the purpose of which was to investigate sight-singing instruction in middle school choral programs. Participants completed a questionnaire either on paper or online. Results suggested that more than half of the teachers surveyed used a published resource to teach sight-reading. More than a third of participants reported having created their own system to teach sight-reading, and of those choral music educators, about one third reported that they employed Curwen-Glover hand signs as well as separate rhythm exercises in their classrooms/rehearsals. Less than a fifth (18%) of the participants used solfege syllables. The results from this study reflected that 40% of the choral music teachers surveyed agreed that the use of the piano is necessary to the success of sight-reading education.
Hanson (1990) investigated the hypothesis that a sequentially-based system of teaching rhythm and melody would aid in the musical development of high school students. The researcher interviewed five high school teachers from the Midwest. Study participants were questioned regarding the use of Curwen-Glover hand signs. Study responses suggested that students perceived that they performed better on sight-reading activities when implementing hand signs, and attributed this to the combination of the increased awareness of the relationship between melody and rhythm.

Kielczewski (2011) investigated the effect of solfege training on sight-reading accuracy. Specifically, the researcher wanted to investigate what effect the use of Curwen-Glover hand signs, and Music Learning Theory (Gordon) methodology might have on middle school choral students pitch accuracy. Seventy-three students from a small town in Ohio served as participants for this study. All the participants were in two seventh grade choral classes. An eight-measure sight-reading exercise was developed by the researcher to be used as both a pretest and posttest. Student participants were divided into two groups: (1) a control group who received no sight-reading instruction; and (2) an experimental group, who received two weeks of instruction on the devised system. Results reflected significant improvements in the experimental group’s ability to accurately sight-read compared to the control group following the treatment. While the amount of instructional time was short, only two weeks, the results of this study suggest that a systematic approach to sight-reading can be beneficial to bringing about improvements in middle school choral singers’ ability to sight-read accurately.

A vital component of sight-reading is the capacity to audiate and correct errors. Sheldon’s (1998) investigation of error-detection accuracy endorsed the importance of
solfege understanding for both conductors and singers. This study shed light on the importance of aural diagnostic skills in the conductor necessary to accurately determine when a performance agrees with or differs from the notation. Further, one of Sheldon’s key research questions pertains to the development of error detection skills in both choral rehearsals and standard collegiate ear training/music theory classes. Specifically, the researcher sought to determine, on the collegiate level, if instructional time should be devoted to teach the transfer of aural skills into error-detection proficiency, or if aural skills can be more effectively transferred into the error-detection skill within ear training and theory classes. The study included 30 undergraduate music education majors. The student participants were divided equally into two groups: One group received an intensive study of solfege in contextual sight-reading, while the other group received a standard music education curriculum. Results suggested that, after one semester of study, both groups had improved in their ability to sight-read, although not significantly, in relation to error-detection; however, the group that received the intensive solfege curriculum was found to be slightly more accurate in this regard.

Thomsen (2011) chronicled her teaching experiences using Dalcroze solfege in the choral classroom. “Dalcroze solfege” varies significantly from the applications of solfege as codified by Kodály. These variants can include the concept of a fixed versus moveable do (at the Dalcroze instructor’s discretion), the Dalcroze teacher’s use of piano harmonization in teaching intervals, and scales sung on fixed do to increase theoretical understanding in harmonic contexts. While the researcher noted that there is not a codified system of Dalcroze solfege that is widely implemented, based on the results of
the study, she found that the scales taught in the context of harmony in this study tended to increase student participants’ theoretical understanding.¹⁹

The results of the aforementioned research studies (Demorest, 2004; Demorest and May, 1995; Hanson, 1990; Kielczewski, 2011; Killian and Henry, 2005; Kuehne, 2003; Reece, 2003; Sheldon, 1998; Thomsen, 2011) support the hypothesis that a sequential and consistent approach to teaching sight-singing that employs Kodály methodology may be more effective in increasing music acquisition skills than other approaches. Many of the studies suggested that the use of Curwen-Glover hand signs can be beneficial to increasing pitch accuracy in sight-singing for choral singers. Practice time before sight-singing performance, as well as periodic testing also have the potential to increase music acquisition skills for this population.

Lifelong Learning

As previously mentioned, one of the goals of this study related to the reality of being an already experienced and successful high school choral music educator and choosing to make a conscious decision – mid career – to choose to further my own knowledge of and training in systems of musical pedagogy specific to the voice that I may not have otherwise been familiar with. Many career music educators choose not to upset their status quo having taught for many years with successful results. However, the challenges associated with going outside of one’s comfort zone and choosing to grow as a life-long learner are very often also associated with positive outcomes. Research investigations of lifelong learning have identified a number of commonalities among

learners and teachers. Lifelong learners are self-generative and are creative in problem solving. Through their involvement in lifelong learning, teachers learn new methodologies mid-career to infuse their program with excitement. In today’s hectic teaching environment, teacher burnout is commonplace. New ideas learned and applied in the classroom can help teachers stay fresh and can also increase teacher engagement with students.

Janssen (2010) explored lifelong learning and found that there is generally two main ways adults navigate through this type of learning. The first way, although less formal, is more common and is based on social interaction. Many adults discuss new adventures with friends or family and apply those conversations to new learning-centric activities. The second, more traditional, way uses a content-specific path that is more formal and structured in nature. Often, this formal structure grows out of a need for further study in a career related topic.

Pearsall (2009) reviewed a keynote address delivered by Dr. Kathryn Roulston, Professor Lifelong Education from the University of Georgia that focused on the topic of Adult Lifelong Learning. Based on Robert Schumann’s maxim, “There is no end to learning,” Roulston identified six key points regarding the lifelong learner. She proposed that the life-long learner: (1) is self-directed; (2) has a rich accumulation of life experience that impacts learning; (3) has learning needs that relate to social roles; (4) focuses on problem solving and immediate application of knowledge; (5) is internally

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motivated to learn; and (6) needs to understand the reason for learning what they do.\textsuperscript{22}

Roulston also cited several research-based differences that can potentially impact adult learning, including the pacing of a lesson, the meaningfulness of an activity, and the older student’s motivation to learn. Roulston’s address stated that as adults age, they may tend to respond more slowly to instruction, and more poorly to learning not deemed meaningful, while exhibiting more intrinsic motivation to learn things of interest to them.\textsuperscript{23}

Lamont (2011) conducted a qualitative research study examining musical identity as it relates to lifelong learning. As part of this process, ten years worth of interviews from several other studies were examined. The researcher discovered that many middle-aged adults become actively involved in music as a way to help create some sort of legacy greater than their own self. Lamont found that adults who take a leadership role in adult-oriented music-making groups experienced satisfaction in creating organization for future generations. For some, music-making can be a boost to self-esteem and can have a positive effect on a person’s social life.

Smith and Haack (2000) discussed key aspects of lifelong learning. They described lifelong learning as “a span of time that includes experiences stretching from the cradle to the grave.”\textsuperscript{24} The researchers noted that change is constant and the successful professional responds creatively to change. They further noted that through the teachers’ habits of lifelong learning, the school experienced positive benefits from music education.

\textsuperscript{22} Pearsall. (2009). 27.

\textsuperscript{23} Pearsall. (2009). 27.

\textsuperscript{24} Smith and Haack. (2000). 28.
In conducting life history interviews of 28 mid-career itinerant music teachers in England, the results of a study by Baker (2005) suggested that after the age of 36, many music teachers experienced a landmark passage or critical phase. During this time, teachers recognized their sense of expertise including a sense of maturity with student interactions and a better understanding of students gleaned from teachers who were also parents. However, the participants also reported a degree of sameness after years of teaching, with many referencing a feeling of monotony. Some expressed feelings of being trapped with no other occupational aspirations. Data from the study suggested that after the age of 42, some teachers may feel a sense of accomplishment when they are involved as teacher-leaders. Usefulness seems key to avoid teacher burnout.

Busch (2005) studied predictors of lifelong learning in an investigation of lifelong learning impetus among college students. The purpose of this study was to identify characteristics influencing lifelong learning in music among a group of 23 Illinois Community College students aged from 16 to 89 years old. Results suggested that the students continued in music because they enjoyed being around others who also enjoyed music. Results also suggested that when student’s general education moved from informal, experiential learning in childhood, to more formal study in lessons and ensemble participation, and then back to informal learning in adulthood, individuals tended to be more likely to seek out experiences that lead to deeper understanding of music. Related to this, adults also tended to seek out enjoyable experiences.

Arasi (2006) described and analyzed the reflections of nine adults who were all former students who had participated in the high school choral program at Maple Valley High School in the northeastern United States. Five of the participants were female and
four were male. Arasi’s findings indicated that the lifelong influence of this high school choral program was related to several social aspects, including a sense of pride and achievement, as well as the learned ability to critique and evaluate. Participants valued the high expectations of the choral director and the exposure to many genres of music. Quantitative data from this study suggested that some self-perceived outcomes of the choral program, such as critical thinking and self-confidence, were influential in the development of lifelong learning skills.

The findings of the previously mentioned studies (Arasi, 2006; Baker, 2005; Busch, 2005; Janssen, 2010; Lamont, 2011; Pearsall, 2009; and Smith and Haack, 2000) seem to support the premise that lifelong learning spans the scope of human life and is often intrinsically motivated. This leaning often begins in an informal, experiential manner and moves to a more formal, traditional type of study. Often, adult learning grows out of a need for further study in a career related topic. Adults tend to seek learning that is meaningful no matter their age.
CHAPTER 3: METHOD

The two-fold purpose of this study was to: (1) implement a Kodály-inspired methodology and measure student progress in sight-reading within an established high school choral program as a means of developing the choral participants’ best practices in sight-reading and music literacy pedagogy; and (2) to document my experience as an educator/researcher of upgrading my existing pedagogical knowledge about the Kodály method, along with its means of implementation with a particular focus on sight-reading with the intent of assisting my choral students in improving their own sight-reading skills. The combination of coursework, conducting lessons, and the Level One Kodály course created a confluence of ideas that lead to the research design for this study with the goal of restructuring my teaching methodology to incorporate and integrate a Kodály-inspired methodology in an already highly functional and successful secondary choral program.

Three foundational studies informed the research design of this project: Hanson (1990), Cousins and Persellin (1986), and Reece (2003). Hanson (1990) investigated a sequential approach to the teaching of sight-singing revealed that a systematic approach to sight-singing led to improvements over a semester as evidenced by pre-, mid- and post-tests for high school choral singers. Results suggested that choral students who struggled with an assigned exercise improved the accuracy of their performance if they used hand signs. Cousins and Persellin (1986) identified the use of Curwen-Glover hand signs as being important in the development of both kinesthetic and visual learning, and that the consistent use of hand signs and solfege could be helpful to singers by improving their ability to see patterns in music as well as linking audiation to written music. Reece
(2003) explored strategies through which to improve the sight-reading skills of high school choral singers, without the use of a piano. Using a sequential plan of instruction, Reece reported a 50% increase in the accuracy of the choral student participant’s sight-reading skills. The three aforementioned studies outline the key foundational points of the current investigation which involved the administering of a pretest, midterm and posttest, in combination with the treatment of a sequential pattern of solfege instruction that incorporated the use of Curwen-Glover hand signs, the intent of which was to increase the proficiency with which high school choral singers who were participating in the research might more easily see patterns in music when sight-singing and be more readily able to link audiation to the written page.

Study Design

Participants

The participants in the study were members of the site school’s Concert Choir. The students in this auditioned ensemble had been selected to participate by the Concert Choir’s choral director (who also served as the researcher) based on the outcome of their audition results. The choral auditions for that year included sight-reading and a prepared piece. All students in this ensemble participated as a part of the researcher’s ongoing student evaluation as required by the school division. Participation in the research was voluntary. However, the pretest, mid-term, and posttest were required as part of the assessment for the course. While students could opt out of having data included in the study, they still were required to participate in the exercises as dictated by their course syllabus. Inclusion or non-inclusion in the study did not affect a student’s course grade or
standing in the choir. Sixty-two students started the study; however, only 47 students completed the pretest, mid-term, and posttest. While no students elected to opt out of the study, 15 students did not complete all three tests and were excluded in the study data. All of these students completed makeup work as required by the course syllabus.

Assignment To the Two Sight-Reading Experience Categories

At the beginning of the fall semester 2014, 62 participating high choral students (28 boys and 34 girls in grades 10 -12) were provided IRB release forms associated with this study, assigned a testing number, and sorted into one of the following two broad experience categories: (1) Previous Kodály Experience Sight-Reading Category; or (2) No Previous Kodály Experience Sight-Reading Category. The participants were assigned to one of the two categories based on evaluation of previous participation in choral ensembles and choral department auditions for the 2014-2015 school year. Each category included a sampling size of N=10. The Previous Kodály Experience Sight-Reading Category included 7 females and 3 males. This category included 2 seniors, 8 juniors, and 0 sophomores. Sophomores were not included because all were new to the testing ensemble. The No Previous Kodály Experience Sight-Reading Category included 6 females and 4 males. Included in this subgroup were 2 seniors, 4 juniors, and 4 sophomores.

Assignment To the Three Sight-Reading Achievement Subgroups

From within the combined data for the two broader categories (Previous Kodály Experience Sight-Reading Category and No Previous Kodály Experience Sight-Reading Category), three different subgroups that were smaller in size were identified based on
the results of the student participants sight-singing assessments. Upon completion of the initial pretest, student scores were averaged and ranked from lowest to highest. From these scores, participants were initially assigned to one of three achievement subgroups: Proficient Musician Sight-Reading Subgroup, Capable Sight-Reading Musician Subgroup, and Developing Musician Sight-Reading Subgroup. The sampling size for each subgroup was N=10. Based on group placements the Proficient Musician Sight-Reading Subgroup was defined as the participants with the ten highest scores. This subgroup included 6 females and 4 males, of which there were 2 seniors, 7 juniors, and 1 sophomore. The Capable Musician Sight-Reading Subgroup included participants who had ten scores closest to the center of the sorted list. There were 5 females and 5 males in this subgroup, including 1 senior, 4 juniors, and 5 sophomores. The last of the three subgroups, the Developing Musician Sight-Reading Subgroup, is defined as the participants with the ten lowest scores. This subgroup included 4 females and 6 males. There were 2 seniors, 5 juniors, and 3 sophomores in this subgroup.

Timeline

During the spring of 2014, choral auditions at the site school where the research for this study was to be undertaken were held for students hoping to join the ensemble identified as the Concert Choir. In June of 2014, Institutional Review Board Approval was granted for the study, and the researcher completed Level One Kodály Training in July of 2014. During the months of July and August in 2014, the curriculum intended for use as part of the study, including pre- and post-tests, and all musical selections, was solidified. Pretesting of study participants was completed during the last week of August through
the first week of September 2014, and the participants were assigned to appropriate
subgroups connected to the outcomes of their pretest results. The implementation of the
study occurred from the second week of September 2014, until the end of December.
Midterm testing occurred during the final two weeks of October 2014. The remainder of
the study was implemented during the final two weeks of October 2014, until the end of
January in the following year, and the posttests were concluded during the first two
weeks of January 2015.

Testing Instrument

In creating the testing instrument used in this research, several academic entry
points were pre-considered. Although traditional Kodály training begins with intervallic
work in smaller to increasingly larger tonal sets, the decision was made to base the testing
exercises for this study on state sight-reading standards, which were scaler in nature, and
covered the range of an octave and included delineating triadic intervals. This decision
was made because the high school participants were both familiar with solfege and has
experience with sight-reading.

Although traditional Kodály training also integrates rhythmic elements and the
use of Curwen-Glover hand signs in conjunction with melodic sequencing, the decision
was made to assess only tonal acquisition and improvement. Musical elements including
rhythm, harmony, phrasing, and musicianship were not assessed in this study. The impact
of the use of hand signs in sight-singing accuracy was not investigated in this study.

Specifically, the compositional elements in the state standards of Virginia
included: a range of 1 octave; skips between do, mi, and sol; and note values of whole,
half, dotted quarter, quarter, and eighth notes. In order to respect the Kodály concept of developmental sequencing, the six sight-reading exercises were created by the researcher and were purposefully sequenced from Exercise 1 to Exercise 6 to reflect a beginning to an intermediate level of difficulty, as well as using varying tonal centers (see Appendix 3).

Exercise 1 was the least difficult of the six exercises. This exercise started and ended on do, and included do and re only. Exercise 2, predominantly in step-wise motion, started and ended on do, and included do, re, and mi. Exercise 3 started and ended on do, and was more difficult than the first two exercises because it included a re-fa leap. Exercise 4 started and ended on do, and included a difficult low la. Exercise 5 was in a minor key and therefore, started and ended on la. Exercise 6 was the most difficult and included more skips than the other 5 exercises including a re-sol skip. However, it also started and ended on do.

Treatment Materials

Throughout the course of the fall semester of 2014, a developmentally sequenced course of study rooted in solfege theory and sight-reading was implemented as part of the choir curriculum. The intent of this study was to compare the participating high school choral student’s pretest and posttest scores after having received sight-singing instruction using a Kodály-inspired method. Using the Kodály 333 Exercises, a sight-singing exercise book created by Zoltán Kodály, the study participants were led by their


researcher-conductor in exploring melody using solfege and hand signs. In addition to the sight-reading examples, the course of study used as the treatment in this research was also transferred to specifically related key areas in the choral music repertoire selections assigned for study during the academic semesters in which this research took place. This transfer of course content into the direct use in music learning created a complete Kodály-inspired curriculum for the study.

**Equipment**

The data collected in this study were stored in a locked filing cabinet and accessible only to the researcher in his high school office throughout the year. Once collected, the data were entered into an Excel spreadsheet and analyzed for mode, median, mean, standard deviation, and percentage increase from pretest to posttest. In March, 2015, after the data were analyzed, all recordings and related materials were destroyed.

Two pianos and two cassette recorders were used for both sets of the tests implemented in this study. In the previous school year, the researcher had recorded students for testing using an iPad and had found many students made mistakes when starting the recording and the entire testing unit was abandoned. Therefore, a simpler approach was implemented and cassette recorders were used instead.

**Procedure**

The individual participants played all starting pitches for the exercises on a keyboard instrument. Starting pitches were labeled on a piano with a number
corresponding to the number of the exercise. Pitches were given solely from a piano and not from any other source (pitch pipe, tuning fork, or any type of electronic device).

Testing began with the pretest in the last week of August 2014, and the first week of September 2014. The mid-term was given during the last two weeks of October 2014. Finally, the posttest was completed during the first two weeks of January 2015. For each assessment, participating participants recorded six sight-reading exercises on a cassette tape three times throughout the course of the first semester. Participants recorded these examples in a practice room by themselves following written instructions (see Appendix 3). All tests were recorded during class time. When combined, the tests resulted in 846 pretest, mid-term, and posttest recordings for 47 singers. Each singer was evaluated on pitch accuracy (P), and assessed on a score of 10 points per exercise. As previously stated, given the scope of this project, and that it was implemented within the curriculum of a high school choral program where I was the sole grader, I served as the sole rater for this study (see Appendix 2).

Scores were sorted in three subgroups: (1) Proficient Musician Sight-Reading Subgroup; (2) Capable Musician Sight-Reading Subgroup; and (3) Developing Musician Sight-Reading Subgroup. Each student was assigned a number and the researcher kept the master list, which cross-referenced student name and number. Participants were not identified by name either in the recording or in the data. Results of data comparisons for pre, mid, and posttests between new and returning students in the achievement categories are reported and discussed in following chapters.
CHAPTER 4: RESULTS

The two-fold purpose of this study was to: (1) implement a Kodály-inspired methodology and measure student progress in sight-reading within a highly successful high school choral program as a best practice in sight-reading and music literacy pedagogy; and (2) reflect on the learning process of a highly experienced and successful mid-career high school choral music educator who made the conscious decision to upgrade his current pedagogical implementation through study and usage of the Kodály method, with a particular focus on sight-reading.

**Pre, Mid, and Posttest Results: Mode Scores**

Once collected and totaled, the data were analyzed for instances of the most occurring scores in the pre, mid, and posttest scores. A chart of the mode scores for each of the six sight-reading exercises is given in Table 1.

<table>
<thead>
<tr>
<th>Exercise Number</th>
<th>Pre</th>
<th>Mid</th>
<th>Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sight-reading Exercise 1</td>
<td>10.00</td>
<td>10.00</td>
<td>10.00</td>
</tr>
<tr>
<td>Sight-reading Exercise 2</td>
<td>7.00</td>
<td>8.00</td>
<td>9.00</td>
</tr>
<tr>
<td>Sight-reading Exercise 3</td>
<td>3.00</td>
<td>5.00</td>
<td>7.00</td>
</tr>
<tr>
<td>Sight-reading Exercise 4</td>
<td>4.00</td>
<td>7.00</td>
<td>8.00</td>
</tr>
<tr>
<td>Sight-reading Exercise 5</td>
<td>3.00</td>
<td>7.00</td>
<td>5.00</td>
</tr>
<tr>
<td>Sight-reading Exercise 6</td>
<td>3.00</td>
<td>6.00</td>
<td>8.00</td>
</tr>
</tbody>
</table>

**Discussion of Mode Scores**
The mode score for each exercise improved at each testing interval except for Exercises 1 and 5. Exercise 1 had a mode score of 10 at each testing, and was the least difficult of all six exercises. The mode score for Exercise 5 decreased in the posttest; perhaps due to the fact that it was in a minor key, and many students did not identify the correct key signature before starting. A review of these results evidences that more students improved at each testing interval. By the posttest, most students were testing above 50%.

**Pre, Mid, and Posttest Results: Median Scores**

The data were also analyzed to determine the median scores for the pre, mid, and posttest scores. A chart of the median scores for each of the six sight-reading exercises is given in Table 2.

**Table 2. Median Scores: Sight-Reading Exercises per Test**

<table>
<thead>
<tr>
<th>Exercise Number</th>
<th>Pre</th>
<th>Mid</th>
<th>Post</th>
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</thead>
<tbody>
<tr>
<td>Sight-reading Exercise 1</td>
<td>10.00</td>
<td>10.00</td>
<td>10.00</td>
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<tr>
<td>Sight-reading Exercise 2</td>
<td>7.00</td>
<td>7.00</td>
<td>8.00</td>
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<tr>
<td>Sight-reading Exercise 3</td>
<td>4.00</td>
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<tr>
<td>Sight-reading Exercise 4</td>
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<td>6.00</td>
<td>7.00</td>
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<tr>
<td>Sight-reading Exercise 5</td>
<td>4.00</td>
<td>5.00</td>
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<tr>
<td>Sight-reading Exercise 6</td>
<td>5.00</td>
<td>5.00</td>
<td>6.00</td>
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</table>

**Discussion of Median Score Results**

The median scores for each exercise improved at each testing interval except for Exercise 1. There were 47 students in the study; the 24th score provided the median. Exercise 1 had a median score of 10 at each testing, and was the least difficult of all six
exercises. A review of these results reveals that more students improved at each testing interval.

*Pre, Mid, and Posttest Results: Mean Scores*

The data were also analyzed for the mean of the scores in the pre, mid, and posttest scores. A chart of the mean scores for each of the six sight-reading exercises is given in Table 3.

Table 3. Mean Scores: All Participants Per Test

<table>
<thead>
<tr>
<th>Mean Scores: All Participants Per Test</th>
<th>Percent Change</th>
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<tbody>
<tr>
<td></td>
<td>Pre</td>
</tr>
<tr>
<td>SR1</td>
<td>7.81</td>
</tr>
<tr>
<td>SR2</td>
<td>6.13</td>
</tr>
<tr>
<td>SR3</td>
<td>4.55</td>
</tr>
<tr>
<td>SR4</td>
<td>5.15</td>
</tr>
<tr>
<td>SR5</td>
<td>4.47</td>
</tr>
<tr>
<td>SR6</td>
<td>4.53</td>
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</tbody>
</table>

Figure 1. Mean Scores: All Participants Per Test
Discussion of Mean Score Results

The mean scores for each exercise indicated improvement at each testing interval. The smallest percentage increase occurred on Exercise 1, which was the easiest of all the six exercises. The largest percentage increase occurred on Exercise 3, which included a do to fa interval that proved problematic to many students on the pretest. More students were able to correctly sing this interval on the posttest. A review of these results reveals that students showed consistent improvement.

Pre, Mid, and Posttest Results: Standard Deviation Scores

Standard deviation scores were also analyzed from the data to determine the extent to which they deviated from the group as a whole. A chart of the standard deviation for each of the six sight-reading exercises is given in Table 4.

Table 4. Standard Deviation: Sight-Reading Examples Per Test

<table>
<thead>
<tr>
<th>Standard Deviation: Sight-Reading Examples Per Test</th>
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<tbody>
<tr>
<td>Exercise Number</td>
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<tr>
<td>Sight-reading Exercise 1</td>
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<td>Sight-reading Exercise 2</td>
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<tr>
<td>Sight-reading Exercise 3</td>
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<tr>
<td>Sight-reading Exercise 4</td>
</tr>
<tr>
<td>Sight-reading Exercise 5</td>
</tr>
<tr>
<td>Sight-reading Exercise 6</td>
</tr>
</tbody>
</table>

Discussion of Standard Deviation Score Results

In general, the standard deviation decreased for each exercise at each testing interval. The spread of most scores was smaller with Exercises 1, 2, 4, 5, and 6. Although the amount of the decrease was relatively small, the range of the scores decreased. In
Exercise 3, there was a do to fa interval that proved problematic to many students on the pretest. More students were able to correctly sing this interval on the posttest.

Results by Exercise for All Participants

Overall, for all the participants, the results indicated improvement in sight-reading accuracy for the full group on all of the six sight-reading exercises after having received the treatment of Kodály-based pedagogical instruction. Midterm improvements were also observed.

Exercise 1 was the least difficult of the six exercises and included only do and re. As a result, participants scored highest on this test. Improvement on SR1 from pretest to posttest was 12.53%. The mean score on the posttest of SR1 was the highest score recorded on all tests (see Table 3 and Figure 1). The mode score for Exercise 1 was 10 (see Table 1). The standard deviation decreased from 2.91 to 1.92 for this exercise representing the largest decrease of the study of 34.02% (see Table 4).

Exercise 2 included do, re, and mi and was predominantly in step-wise motion. This exercise included two mi-do descending intervals making it more difficult than the first exercise. Improvement on SR2 from pretest to posttest was 26.74%. This improvement is more than double that of SR1 (see Table 3 and Figure 1). While these scores were lower than those from the first exercise, the mode scores for the pre and posttest were 7 and 9 respectively, and indicate the scores were still moderately high (see Table 1). The standard deviation for Exercise 2 decreased from 2.38 to 1.97 or a 17.22% decrease (see Table 4).
Exercise 3 included a *do-fa* leap. This proved problematic on the pretest for many participants. After treatment with the Kodály-inspired method, more participants were able to correctly sing the *do-fa* interval. Improvement on SR3 from pretest to posttest was 36.45%. This improvement was the greatest percent change of all six exercises even though the mean scores were not the highest (see Table 3 and Figure 1). Mode scores improved from 3 to 7 (see Table 1). The standard deviation decreased from 1.82 to 1.88. This decrease in standard deviation was the lowest in the study at 3.29% (see Table 4).

Exercise 4 included a low *la* and many participants were unable to sing that solfege correctly on the pretest. The pretest and posttest scores for exercise 4 were lower than those of exercise 3. Improvement on SR4 from pretest to posttest was 29.75%. Although improvement was made after treatment with the Kodály-inspired method, less improvement was seen than in the previous exercise (see Table 3 and Figure 1). The mode score for Exercise 4 doubled from 4 to 8 (see Table 1), while the standard deviation decreased from 2.38 to 2.27 for a decrease of 6.6% (see Table 4).

Exercise 5 was in a minor key. The majority of participants did not recognize the minor tonality on the pretest; however, some participants were able to sing the example without using solfege. Improvement on SR5 from pretest to posttest was 27.62%. Of the six tests, the scores were the lowest on this exercise. The group made a large improvement between pretest and posttest on SR5 but the mean scores for the pre, mid, and posttest were the lowest of all six tests (see Table 3 and Figure 1). Mode scores increased from 3 to 5 (see Table 1). This was the smallest increase in mode scores of the six examples. The standard deviation for Exercise 5 decreased from 2.12 to 1.98 for a decrease of 9.43% (see Table 4).
Exercise 6 included more skips than the other five exercises including a re-sol skip most participants found difficult. Mean scores for pre, mid, and posttest for SR6 were the second lowest overall. Improvement on SR6 from pretest to posttest was 33.80% (see Table 3 and Figure 1). Mode scores increased from 3 to 8 on this exercise representing the largest increase of all six-mode scores (see Table 1). The standard deviation decreased from 2.19 to 2.03 for a total decrease of 7.3% (see Table 4).

Previous Kodály Experience Sight-Reading Category

The first category, the Previous Kodály Experience Sight-Reading Category, was identified as being made up of those participants who had had some previous experience using the Kodály Method. All ten participants in this subgroup were members of the Concert Choir during the school year prior to this study being undertaken, and as part of this experience had received some prior training using a Kodály-inspired method. The mean scores in the Previous Kodály Experience Sight-Reading Category indicated that the participants tested generally higher than the whole group and had modest improvements over the course of the treatment (see Table 5 and Figure 2).

Participants in the Previous Kodály Experience Sight-Reading Category exhibited a slight improvement on SR1 with an increase of 16.41% from pretest to posttest. This increase was the lowest on all six tests for this subgroup. On SR 2, an improvement of 28.10% was observed. Mean posttest scores for this example were still relatively high at 8.45%. The third example contained the do-fa leap. After treatment, participants faired 27.59% better. This percent increase is close to the 26.98% observed in the Proficient Musician Sight-Reading Subgroup (see Table 5 and Figure 2).
Test results indicated an increase of 21.70% on SR4 for the Previous Kodály Experience Sight-Reading Category. This improvement far surpassed the 11.11% increase in the Proficient Musician Sight-Reading Subgroup. The minor exercise performed by the participants in the Previous Kodály Experience Sight-Reading Category fared significantly higher than the group as a whole. While the percent change of 16.43% was lower than the whole group of 27.62%, the mean scores for this subgroup were higher. Lastly, the pretest score on SR6 was the lowest recorded score for this subgroup, although the percent change of 29.37% was the highest increase observed (see Table 5 and Figure 2).

Table 5. Mean and Percentage Change: Previous Kodály Experience Sight-Reading Category

<table>
<thead>
<tr>
<th></th>
<th>Mean: Previous Kodály Experience Sight-Reading Category</th>
<th>Percentage Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre</td>
<td>Mid</td>
</tr>
<tr>
<td>SR1</td>
<td>8.20</td>
<td>9.20</td>
</tr>
<tr>
<td>SR2</td>
<td>6.60</td>
<td>7.60</td>
</tr>
<tr>
<td>SR3</td>
<td>5.70</td>
<td>6.30</td>
</tr>
<tr>
<td>SR4</td>
<td>6.20</td>
<td>7.10</td>
</tr>
<tr>
<td>SR5</td>
<td>5.70</td>
<td>6.50</td>
</tr>
<tr>
<td>SR6</td>
<td>5.20</td>
<td>5.90</td>
</tr>
</tbody>
</table>
No Kodály Experience Sight-Reading Category

The next category examined was for those with no previous Kodály sight-reading experience. None of the ten participants were enrolled in Concert Choir during the school year prior to the study. Although some of these participants did receive previous sight-reading instruction, the instruction was not based on the Kodály-inspired method. This category had mean averages that were overall higher than the Developing Musician Sight-Reading Subgroup on the pretest. While improvement can be on all six examples, SR6 had the largest increase from pretest to posttest (see Table 6 and Figure 3).

A slight improvement was noted on SR1 for this subgroup with an increase of 14.86% from pretest to posttest. This increase was the lowest for all six tests performed on this subgroup. On SR 2, an improvement of 28.30% was observed. This increase was almost identical to that of to the Previous Experience Sight-Reading Category. The third example contained the do-fa leap. After treatment, participants faired 34.29% better. This
percent increase is higher than the 26.98% observed in the Proficient Musician Sight-Reading Subgroup (see Table 6 and Figure 3).

On SR4, the No Previous Kodály Experience Sight-Reading Category increased at a rate of 38.89%. This improvement was noticeably higher than the 11.11% increase in the Proficient Musician Sight-Reading Subgroup and was the greatest percent increase of all six exercises for this subgroup. SR5 involved the use of a minor exercise and the participants in this subgroup scored lower than the group as a whole. While the percent change of 34.29% was greater than the whole group of 27.62%, the mean scores for this subgroup were lower. Lastly, the pretest score on SR6 was the lowest recorded score for this subgroup, although the percent change of 52% was highest increase observed (see Table 6 and Figure 3).

Table 6. Mean and Percentage Change: No Previous Kodály Experience Sight-Reading Category

<table>
<thead>
<tr>
<th>Mean: No Previous Kodály Experience Sight-Reading Category</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre</td>
<td>Mid</td>
</tr>
<tr>
<td>SR1</td>
<td>7.40</td>
</tr>
<tr>
<td>SR2</td>
<td>5.30</td>
</tr>
<tr>
<td>SR3</td>
<td>3.50</td>
</tr>
<tr>
<td>SR4</td>
<td>3.60</td>
</tr>
<tr>
<td>SR5</td>
<td>3.50</td>
</tr>
<tr>
<td>SR6</td>
<td>3.30</td>
</tr>
</tbody>
</table>
Figure 3. Mean Scores: No Previous Kodály Experience Sight-Reading Category

Results Of Each Sight-Reading Subgroup

**Proficient Musician Sight-Reading Subgroup**

In this study, the Proficient Musician Sight-Reading Subgroup was defined by inclusion of participants who had the ten highest mean scores on the pretest. Test results indicated no statistically significant improvement on SR1 for this subgroup. On SR 2, an improvement of 13.25% was observed. While this increase was less than that observed by all participants, the mean scores were higher in this subgroup (PM). The largest percentage of increase for this subgroup was on SR3. This example contained the *do-fa* leap. After treatment, participants faired 26.98% better. While the percent of increase was lower than the full group, it can be noted that the raw scores from pretest and posttest for this subgroup on SR3 were higher (see Table 7 and Figure 4).
Results from the Proficient Musician Sight-Reading Subgroup data revealed that an increase of only 11.11% occurred on SR4, but again, the mean scores were higher than those of all other study participants. SR5 was an exercise in a minor key and the participants in this subgroup faired significantly higher than the group as a whole. Once again, the percentage of change was smaller than for the group of participants as a whole (12.50%). However, the mean scores for this subgroup were noticeably higher. Lastly, the pretest score on SR6 was the lowest recorded score for the Proficient Musician Sight-Reading Subgroup, although the percent change of 15.71% was not at the bottom of the list (see Table 7 and Figure 4).

Table 7. Mean and Percentage Change: Proficient Musician Sight-Reading Subgroup

<table>
<thead>
<tr>
<th>Mean: Proficient Musician Sight-Reading Subgroup</th>
<th>Percentage Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre</td>
<td>Mid</td>
</tr>
<tr>
<td>SR1</td>
<td>9.80</td>
</tr>
<tr>
<td>SR2</td>
<td>8.30</td>
</tr>
<tr>
<td>SR3</td>
<td>6.30</td>
</tr>
<tr>
<td>SR4</td>
<td>8.10</td>
</tr>
<tr>
<td>SR5</td>
<td>7.20</td>
</tr>
<tr>
<td>SR6</td>
<td>7.00</td>
</tr>
</tbody>
</table>
Figure 4. Mean Scores: Proficient Musician Sight-Reading Subgroup

**Capable Musician Sight-Reading Subgroup**

In this study, the Capable Musician Sight-Reading Subgroup included participants who had the ten mean scores closest to the center of the sorted list for the pretest. Improvement for this subgroup was greater overall than in any other subgroup. Examples 2-6 indicated percent increases of more than 100%.

Exercise 1 was the least difficult of the six exercises and included only do and re. SR1 exhibited the least improvement but started with the highest mean score of all pretests. A small increase of 10.23% was noted between pretest and posttest on this exercise (see Table 8 and Figure 5).

Exercise 2 included do, re, and mi and was predominantly in step-wise motion. This exercise did include two mi-do intervals making it more difficult than the first exercise. The pretest scores on this exercise were significantly lower than SR1. Improvement on SR2 from pretest to posttest was more than 167%. The Kodály-inspired
method was highly effective in improving the Capable Musician Sight-Reading Subgroup (see Table 8 and Figure 5).

Exercise 3 included a do-fa leap. Many participants struggled with this interval on the pretest. After treatment with the Kodály-inspired method, more participants were able to correctly sing the do-fa interval. On SR3, mean scores more than doubled with a 121.43% increase. The mean scores and percent increase were lower on this exercise than in the previous exercise (see Table 8 and Figure 5).

Exercise 4 included a low la and many participants were unable to sing that solfege correctly on the pretest. The pretest and posttest scores for exercise 4 were slightly lower than those of exercise 3. Even still, improvement on SR4 from pretest to posttest was 150%. After treatment with the Kodály-inspired method, greater improvement was noted than in the previous exercise (see Table 8 and Figure 5).

Exercise 5 was in a minor key. Even though the majority of participants did not recognize the minor tonality on the pretest, the mean scores were close to those of SR4. Improvement on SR5 from pretest to posttest was 107.41%. Of the six tests, the posttest scores were the lowest on this exercise. This subgroup made a large improvement between pretest and posttest on SR5, but the mean scores for the mid and posttest were still the lowest of all six tests (see Table 8 and Figure 5).

Exercise 6 included more skips than the other five exercises including an ascending re-sol skip most participants found difficult. The greatest percent change for this subgroup was on SR6 with 213.64% increase. This example contained more leaps than the other five examples, however, this pre to posttest increase is the largest percent increase in the study (see Table 8 and Figure 5).
Table 8. Mean and Percentage Change: Capable Musician Sight-Reading Subgroup

<table>
<thead>
<tr>
<th>Mean: Capable Musician Sight-Reading Subgroup</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre</td>
<td>Mid</td>
</tr>
<tr>
<td>SR1</td>
<td>8.80</td>
</tr>
<tr>
<td>SR2</td>
<td>3.10</td>
</tr>
<tr>
<td>SR3</td>
<td>2.80</td>
</tr>
<tr>
<td>SR4</td>
<td>2.40</td>
</tr>
<tr>
<td>SR5</td>
<td>2.70</td>
</tr>
<tr>
<td>SR6</td>
<td>2.20</td>
</tr>
</tbody>
</table>

Figure 5. Mean Scores: Capable Musician Sight-Reading Subgroup

Developing Musician Sight-Reading Subgroup
In this study, the Developing Musician Sight-Reading Subgroup was defined as including the participants who had the ten lowest scores. Overall, marked improvement for this subgroup was noted on all six sight-reading exercises. The greatest improvement for this subgroup was on SR4 and SR6 with 118.75% increase and 115.91% increase respectively. While the mean scores for the Developing Musician Sight-Reading Subgroup were lower than the Proficient Musician Sight-Reading Subgroup, it is worth noting that both sets of pretest scores were similar for the Capable Musician Sight-Reading Subgroup and the Developing Musician Sight-Reading Subgroup (see Table 9 and Figure 6).

Exercise 1 was the least difficult of the six exercises and included only do and re. As with the Capable Musician Sight-Reading Subgroup, SR1 marked the least improvement but started with the highest mean score of all pretests. An increase of 65.79% was noted between pretest and posttest on this exercise (see Table 9 and Figure 6).

Exercise 2 included do, re, and mi and was predominantly in step-wise motion. This exercise did include two mi-do intervals making it more difficult than the first exercise. The pretest scores on this exercise were slightly lower than SR1, but improvement on SR2 from pretest to posttest was more than 85.48%. While these scores are lower than those for the Proficient Musician Sight-Reading Subgroup, the percent increase for the Developing Musician Sight-Reading Subgroup was significantly higher than the 13.25% of the Proficient Musician Sight-Reading Subgroup (see Table 9 and Figure 6).
Exercise 3 included a do-fa leap. Many participants struggled with this on the pretest. After treatment with the Kodály-inspired method, more participants were able to correctly sing the do-fa interval. On SR3, mean scores improved with an 87.5% increase. The mean scores were lower on this exercise than in the previous exercise, but the percent increase was slightly higher (see Table 9 and Figure 6).

Exercise 4 included a low la and many participants were unable to sing that solfege correctly on the pretest. The pretest scores for exercise 4 were slightly lower than those of exercise 3, however, the posttest scores were the same. Even still, improvement on SR4 from pretest to posttest was 118.75%. After treatment with the Kodály-inspired method, percent change improvement was the greatest for this exercise (see Table 9 and Figure 6).

As previously stated, exercise 5 was in a minor key. Even though the majority of participants did not recognize the minor tonality on the pretest, the mean scores were not the lowest for this subgroup. Improvement on SR4 from pretest to posttest was 94.44% (see Table 9 and Figure 6).

Exercise 6 included more skips than the other five exercises including an ascending re-sol skip most participants found difficult. Mean scores were the lowest on SR6 for this subgroup. A percent change of 115.91% was observed for this exercise. After treatment with the Kodály-inspired method, a large percent increase was observed even though the mean posttest score was the lowest of all six exercises (see Table 9 and Figure 6).
Table 9. Mean and Percentage Change: Developing Musician Sight-Reading Subgroup

<table>
<thead>
<tr>
<th>Mean: Developing Musician Sight-Reading Subgroup</th>
<th>Percentage Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre</td>
<td>Mid</td>
</tr>
<tr>
<td>SR1</td>
<td>3.80</td>
</tr>
<tr>
<td>SR2</td>
<td>3.10</td>
</tr>
<tr>
<td>SR3</td>
<td>2.80</td>
</tr>
<tr>
<td>SR4</td>
<td>2.40</td>
</tr>
<tr>
<td>SR5</td>
<td>2.70</td>
</tr>
<tr>
<td>SR6</td>
<td>2.20</td>
</tr>
</tbody>
</table>

Figure 6. Mean Scores: Developing Musician Sight-Reading Subgroup
CHAPTER 5: DISCUSSION

The two-fold purpose of this study was to: (1) implement a Kodály-inspired methodology and measure student progress in sight-reading within an established high school choral program as a means of developing the choral participants’ best practices in sight-reading and music literacy pedagogy; and (2) to document my experience as an educator/researcher of upgrading my existing pedagogical knowledge about the Kodály method, along with its means of implementation with a particular focus on sight-reading with the intent of assisting my choral students in improving their own sight-reading skills. The data results reported in Chapter 4 suggest that there were several levels of interconnected improvements.

Ranges and Comparisons of Sight-Reading Scores

A review of the results indicated steady improvements for the full group and each subgroup from pretest to posttest using the Kodály-inspired method of training. While several subgroups exhibited noticeable improvement, all subgroups improved after treatment with the Kodály-inspired method. For the Full Group, the smallest percent increase occurred on SR1 and was 12.53% with a mean score on the pretest of 7.81 and the posttest of 8.79. The largest percent increase for this group came on SR3 and was 36.45% with a pretest score of 4.55 and a posttest score of 6.21 (see Table 10).

For the Previous Kodály Experience Sight-Reading Category the smallest percentage increase occurred on SRI and was 16.42%, with a mean score on the pretest
of 8.2 and the posttest of 9.55. The largest percentage increase for this group came on SR6 and was 29.37%, with a pretest score of 5.2 and a posttest score of 6.73.

For the No Previous Kodály Experience Sight-Reading Category, the smallest percentage increase occurred on SR1 and was 14.86%, with a mean score on the pretest of 7.4 and the posttest of 8.5. The largest percentage increase for this group came on SR6 and was 51.52%, with a pretest score of 3.3 and a posttest score of 5.0.

For the Proficient Musician Sight-Reading Subgroup, the smallest percent increase occurred on SR1 and was 0% with a mean score on the pretest and posttest of 9.8. Many participants in this group scored a perfect 10 on the pre, mid, and posttests. The largest percentage of increase for this group occurred on SR3 and was 26.98% with a pretest score of 6.3 and a posttest score of 8.0. This subgroup responded well to the treatment; however, I am unable to determine if that success was due to the treatment or to the participants’ own abilities and prior experiences (see Table 10).

For the Capable Musician Sight-Reading Subgroup, the smallest percentage of increase occurred on SR1 and was 10.23% with a mean score on the pretest of 8.8 and the posttest of 9.7. The largest percentage increase for this group came on SR6 and was 213.64% with a pretest score of 2.2 and a posttest score of 6.9. The increase on SR6 for this subgroup was quite large and suggests that marked improvement in the sight-reading ability of participants occurred as a results of the Kodály-inspired training. I was surprised by the large percentage increases in this subgroup and conjecture that these participants, given their intermediate level of skill entering the study, had more room to make large improvements, in comparison to the Developing Musician Sight-Reading
Subgroup who were busy laying a foundation or the Proficient Musician Sight-Reading Subgroup, who already had a higher skill level and thus less room to improve.

For the Developing Musician Sight-Reading Subgroup, the smallest percent increase occurred on SR1 and was 65.79%% with a mean score on the pretest of 3.8 and the posttest of 6.3. The largest percent increase for this group came on SR4 and was 118.75% with a pretest score of 2.4 and a posttest score of 5.25. While some of the participants in this subgroup tested low on the pretests, that can be attributed to a lack of knowledge and experience with solfege. Several of these participants responded well to the treatment and percent increases outpaced other participants from other subgroups.

The highest mean scores overall for all subgroups on pretest and posttest both occurred in SR1 in the Proficient Musician Sight-Reading Subgroup with a score on both tests of 9.8. Since many of these participants were highly skilled in basic sight-reading, these high scores are in line with the lower difficulty of this exercise. The lowest mean score on the pretests occurred with the Developing Musician Sight-Reading Subgroup on SR6 with a score of 2.2. The difficulty level of SR6 and the lack of understanding of sight-reading skills align with this low score.

The lowest mean score on the posttests occurred on SR3 and SR5 in the No Previous Kodály Experience Sight-Reading Category with a tied score of 4.7. This result is surprising, although, in this subgroup, there were participants who ended the test period still not understanding how to sight-read and thus, their scores did not improve as much as those in the other subgroups. I conjecture that this subgroup had so much to learn and were busy learning foundational skills that their improvements were not as noticeable.
Table 10. Comparison of Lowest and Highest % Increase By Subgroup

<table>
<thead>
<tr>
<th>Study Categories</th>
<th>Lowest % Increase</th>
<th>Highest % Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Group</td>
<td>(SR1) 12.53%</td>
<td>(SR3) 36.45%</td>
</tr>
<tr>
<td>Previous Kodály Experience Sight-Reading Category</td>
<td>(SR1) 16.41%</td>
<td>(SR6) 29.37%</td>
</tr>
<tr>
<td>No Previous Kodály Experience Sight-Reading Category</td>
<td>(SR1) 14.86%</td>
<td>(SR6) 51.52%</td>
</tr>
<tr>
<td>Proficient Musician Sight-Reading Subgroup</td>
<td>(SR1) 0.00%</td>
<td>(SR3) 26.98%</td>
</tr>
<tr>
<td>Capable Musician Sight-Reading Subgroup</td>
<td>(SR1) 10.23%</td>
<td>(SR6) 213.64%</td>
</tr>
<tr>
<td>Developing Musician Sight-Reading Subgroup</td>
<td>(SR1) 65.79%</td>
<td>(SR4) 118.75</td>
</tr>
</tbody>
</table>

While examining percentage increases for all subgroups (see Table 11), I came across a surprising result. Without exception, percentage increases in terms of sight-reading accuracy test results for the Proficient Musician Sight-Reading Subgroup was the lowest of all six subgroups. These results could be attributed to the fact that pretest scores on most of the six exercises were already higher than those of the full group since all of these participants had prior solfege training. Even though the percent increases were low, these participants still improved after receiving training in the Kodály inspired treatment.

The most surprising result came from the Capable Musician Sight-Reading Subgroup. Participants’ sight-reading test scores in this subgroup increased an average of 137% from pretest to posttest. While I hypothesized that student growth in the ability to accurately sight-read would occur for all subgroups during the course of this study, I did not anticipate that any single subgroup would dominate the percentage increases as much as the Capable Musician Sight-Reading Subgroup did. These students were highly successful in assimilating and applying the Kodály-inspired method.
The Developing Musician Sight-Reading Subgroup demonstrated that often, a student’s prior knowledge on a pretest is not a good indicator of that student’s potential for improvement. At the midterm, I began to notice that a few of the participants from this subgroup were outpacing the rest of their group. This supposition proved valid after posttest, and indicates that often, students who perform poorly at first still have great potential for improvement after treatment.

Table 11. Comparison of Percentage Change For All Subgroups

<table>
<thead>
<tr>
<th>Achievement Subgroup</th>
<th>SR1</th>
<th>SR2</th>
<th>SR3</th>
<th>SR4</th>
<th>SR5</th>
<th>SR6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Group</td>
<td>13%</td>
<td>27%</td>
<td>36%</td>
<td>30%</td>
<td>28%</td>
<td>34%</td>
</tr>
<tr>
<td>Previous Experience Sight-Reading Category</td>
<td>16.41%</td>
<td>28.10%</td>
<td>27.59%</td>
<td>21.70%</td>
<td>16.43%</td>
<td>29.37%</td>
</tr>
<tr>
<td>No Previous Experience Sight-Reading Category</td>
<td>14.86%</td>
<td>28.30%</td>
<td>34.29%</td>
<td>38.39%</td>
<td>34.29%</td>
<td>51.52%</td>
</tr>
<tr>
<td>Proficient Musician Sight-Reading Subgroup</td>
<td>0.00%</td>
<td>13.25%</td>
<td>26.98%</td>
<td>11.11%</td>
<td>12.50%</td>
<td>15.71%</td>
</tr>
<tr>
<td>Capable Musician Sight-Reading Subgroup</td>
<td>10.23%</td>
<td>167.74%</td>
<td>121.43%</td>
<td>150%</td>
<td>107.41%</td>
<td>213.64%</td>
</tr>
<tr>
<td>Developing Musician Sight-Reading Subgroup</td>
<td>65.79%</td>
<td>85.48%</td>
<td>87.50%</td>
<td>118.75%</td>
<td>94.44%</td>
<td>115.91%</td>
</tr>
</tbody>
</table>

Implications for Teaching

As a part of this study, I began teaching sight-reading skills with a Kodály-inspired methodology that my students practiced in their repertoire. Smith and Haack (2000) describe lifelong learning as “a span of time that includes experiences stretching from the cradle to the grave.” Planning for personal growth opportunities helped this mid-career teacher avoid burnout by creating new strategies for success and creativity. This study connects my lifelong learning to my own high school experiences and helps explain why I am still pursuing music education.

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27 Smith and Haack. 28.
One month into the study, test participants’ understanding of solfege and sight-reading led me to begin using the same Kodály-inspired method with all choirs. While the other classes were not tested as a part of this research in the way participants were tested in this study, observations indicate a similar rate of improvement for all students in all choirs.

Since the completion of this study, I have further integrated the use of a Kodály-inspired approach to the teaching of sight-reading with the use of solfege, Curwen-Glover hand signs, and audiation to increase students’ music acquisition skills. My students are better able to apply solfege and hand signs in their music and the groups’ time for music acquisition continues to shrink. Many, but not all, students have also shown improvement in error detection. Because of these results, I am driven to deepen my understanding and application of Kodály’s developmental hierarchy.

Recommendations for Further Research

In order to be totally congruent with the developmental hierarchy as outline in the Kodály method, a redesign of the sight-reading exercises could be done differently by taking into consideration the melodic sequence related to the developmental hierarchy through the use of the pentatonic scale first, followed later by scaler examples. Identifying melodic concepts, using only extractable melodic concepts in progressively more difficult exercises, and moving from pentatonic to scaler exercises could be a more sequentially appropriate method.

In a redesign of this study, I would implement a practice strategy studied by Killian and Henry (2005). Results of this study indicate preparation time was vital for
high-accuracy sight-singing. This included singing out loud during practice time, using hand signs, and maintaining a steady beat. After Kodály Level One training, I implemented these strategies into my teaching; however, for this study, I did not test the effect of preparation time on the accuracy of the sight-singing.

Recording sight-reading tests on cassettes is clumsy in light of current technologies. Perhaps a recording software platform such as Sight-Reading Factory could have been utilized. In a prior testing environment, I used an iPad and found that students had a difficult time in accurately starting and stopping their recording. However, an online component could be utilized and would give students the opportunity to complete the test when they are prepared to do so.

According to Cousins and Persellin (1986), the use of Curwen-Glover hand signs can be both kinesthetic and visual. The consistent use of hand signs and solfege helps the singer to see patterns in music and helps link audiation to written music. I have found that audiation is one of the key tenets necessary for student success. A study could be devised to test the impact of implementing audiation during preparation time on a student’s accuracy in sight-reading. Wait time seems to create the need for students to audiate and activate inner hearing. Quick echoing of a pitch can cause mimicking instead of audiation while a wait time of one or two seconds, I hypothesize, can greatly increase student accuracy.

As a result of my own master’s studies, I began using a tuning fork to give starting pitches for both sight-reading exercising and beginning pitches on individual repertoire to further strengthen my students’ use of audiation. When the singer is dependent on the piano as the sole source of pitch, it is unclear whether audiation or
mimicking is taking place. However, with the use of a tuning fork, students can process the aural information and audiate their starting note. As a next step, I would like to implement the use of tuning forks for all of my students. Students would use the tuning fork to audiate their starting pitch for an exercise or in repertoire, and I would have another avenue to assess student audiation.

Upon examination of data at the end of the study, the students’ pretest score could have indicated that the high achieving students were more advanced than the level of the study. Differentiation of testing exercises could have been utilized to give a more accurate view of student achievement. In the 2016-2017 school year, I began using a website called “Sight-Reading Factory” (www.sightreadingfactory.com). I have found the exercises to be efficacious in teaching skills and providing students with individualized practice outside the classroom. This website also offers an assessment component allowing me to generate assignments and giving me the ability to evaluate these assessments at any time and any place. Currently, I am interested in running a similar study using this new technology and then use resultant data to compare the two studies for improvement differences. Due to the number of tests generated and the time involved in scoring them, I was unable to find a second rater for the study. Multiple raters would have generated more objective findings and would have enhanced the reliability of the results.

Although I am still teaching in the same high school where the current study was undertaken, this study could be repeated at a similar high school in a similar area. The music pedagogy used in my classroom is not unique, but is not commonly used by most teachers in areas surrounding my school. A comparison of results in a similar school
could be useful in determining the validity of the results from this study. The study could also be adapted for use in the middle school setting and results could be analyzed based on age and grade.

Conclusion

This study was undertaken out of this researcher-educator’s desire to continue learning, by expanding and enriching my own knowledge base through studying the Kodály method. I had the opportunity to complete multiple observations of student teachers who had successfully integrated a Kodály-inspired method including Curwen-Glover hand signs into their own choral rehearsals. During these observations, I witnessed the dramatic impact the Kodály-inspired method could have on the music literacy and sight-reading skills of students. Through my personal assimilation of this new paradigm of audiation, and after completing Level One Kodály teacher certification, I was inspired to implement this method and study the outcome for my students. Having integrated aspects of a Kodály-inspired methodology into my curriculum, I also understand that my comprehension of this method is through the lens of a teacher certified in Level One Kodály training. Therefore, to further my knowledge and understanding of this methodology, continued training through completing Kodály Levels Two and Three is needed.

As I move beyond Level One understanding of the Kodály method, I look forward to applying melodic and rhythmic hierarchies including the pentatonic scale (do, re, mi, sol, la) before introducing scaler examples that include fa and ti in order to mesh more organically with the melodic and rhythmic sequence suggested by the work of Kodály. This will continue to enliven my teaching for years to come, as a deeper understanding of
the Kodály sequence helps me lead my students to improve error detection, and increase audiation and music acquisition skills.

Although the bulk of this study dealt with the effect solfege experience has on my students, Sheldon’s study (1998) shed light on the importance of the skill in the conductor. Understanding solfege is important to everyone in an ensemble, including the conductor. As such, my training in a Kodály-inspired method has had a direct correlation on the improvement of my students in their music acquisition skills. Although I taught sight-reading using solfege before this study, my methodology changed after finishing Level One Kodály training.

A significant result of this study is its impact on my pedagogy as a choral teacher. While I was highly effective before this study, I am better able to directly connect solfege in warm-ups, sight-reading, and performance repertoire. I continue to see my students succeed in increasing music acquisition skills, leading them to a deeper understanding of the written music. I continue to teach repertoire with a focus on transfer, asking my students to find connections between individual performance pieces, warm-ups, or from music from their everyday life. These transfer skills are essential for success not only in choir, but also in life.

This study fulfilled every aspect of the initial need identified in the summer of 2014. As a result of this study and my graduate training, I have continued to refine and implement a Kodály-inspired method in my choral ensembles, including solfege, sequentially-based pedagogy, Curwen-Glover hand signs, and audiation training. I look forward to reaping the longer-term benefits possible for my students from further integration of this methodology.
APPENDIX 1: IRB APPROVAL FORM

1. IRB Forms

**Purpose and Objectives**
What is the purpose of the study? Include any hypotheses or research questions. (Limit to one page)

Music literacy and acquisition are vital components of all high school choral programs; chief among the skills necessary and developed at the high school level are audiation, sight-reading, and the acquisition of age appropriate choral literature. Audiation is defined as the ability to hear and imagine music internally, while sight-reading is the reading and performing of written music when a musician has not seen or studied the music before.

Over time, research has informed best practices in choral pedagogy to include specific implementation of audiation and sight-reading programs based on the developmental hierarchy of student music learners. The Kodály system, developed by Hungarian music educator and composer Zoltán Kodály in the ‘40’s and ‘50’s and researched and documented in studies through the ‘60’s and ‘80’s, has found a valued place in contemporary choral pedagogy. However, choral music education training across the United States has differed significantly as to whether students were trained in the Kodály method in their undergraduate studies.

The two-fold purpose of this mixed methodology study is to: a.) Implement, within a highly successful high school choral program, best practices in sight-reading and music literacy pedagogy, through the implementation of a Kodály-based methodology; b.) Document the learning process of a highly successful mid-career high school choral music educator who has made the decision to upgrade his current pedagogical implementation through study and usage of the Kodály method.

**Procedures/Research Design/Methodology/Timeframe**
Describe your participants. From where and how will potential participants be identified (e.g. class list, bulk email request, etc.)?

The participants in the study are in my High School Concert Choir and I am their director. These students have all auditioned for this ensemble and were placed in the group by me.

How will participants be recruited once they are identified (e.g., mail, phone, classroom presentation)? Include copies of recruitment letters, flyers, or advertisements.
All students in this ensemble will participate as a part of my ongoing teacher evaluation for the school division. Inclusion of data in the research is voluntary. However, the pretest, mid-term and posttest are both required for this course. While students can opt out of having data included in the study, they still must participate in the exercises as dictated by their course syllabus. Inclusion or non-inclusion in the study will not affect a student’s course grade or standing in the choir.

Describe the design and methodology, including all statistics, IN DETAIL. What exactly will be done to the participants? (Emphasize possible risks and protection of participants)

The researcher will attend classes to be certified in the Kodály Method of teaching sight-reading during the summer of 2014, which includes rhythmic sequencing beginning with more simple rhythms and moving to more complex rhythms taught by listening, speaking, singing, and incorporating rhythmic movement; Melodic sequencing beginning with the pentatonic scale, the first five notes of the major scale; and using Curwen-Glover hand signs, where a hand sign has been assigned to every scale degree.

At the beginning of the fall semester 2014, participating students will be identified and sorted into one of the following two descriptive categories: 1.) No prior Kodály experience, 2.) Prior Kodály experience. Resultant data will be sorted and compared within this framework.

During the fall semester of 2014, the researcher will give pre, mid, and posttests in sight-reading and compare student growth over the course of the given semester. Scores will be sorted in three categories: Proficient Musician, Capable Musician, and Developing Musician. Results of data comparisons between pre, mid, and posttests between new and returning students in the achievement categories will be reported and discussed.

Throughout the course of the fall semester 2014, a developmentally sequenced course of study in solfege theory and sight-reading will be implemented as part of the choir curriculum. In addition to the sight-reading examples, this course of study will also be transferred to specifically related to key areas in the assigned choral music repertoire. This transfer of course content into the direct use in music learning will create a complete Kodály based curriculum for the study itself.

The specific testing for the pre, mid, and posttests, participants will sing six sight-reading examples based on the Kodály methodology for an audio recording using a cassette tape. Students will be recording these examples in a practice room by themselves. Each student will be assigned a number and I will keep the master list that will cross-reference student name and number. This master list will be kept on my laptop, which is password protected and is either will me always or is locked in
my office. They will not be identified by name either in the recording or in the data. The data is for research purposes only and will not be considered as a formal evaluation of the student.

At the end of the semester, all study participants will complete a Qualtrics survey in which they will be asked 6 – 10 questions concerning their learning and experience in choir that semester. Data from this survey will coded, themed, and analyzed and the results will be discussed. The questions are as follows:

1. What differences did you notice in Mr. Ryman’s teaching style this semester when compared with your previous classes with him?
2. In a few sentences, describe your experience learning and applying solfege into class this semester.
3. Did you find this approach to sight-singing a help or a hindrance? Why?
4. What’s another way you could imagine using solfege in your personal learning or in class?
5. What parts of this process did you find the easiest? What parts did you find the hardest?
6. Tell me about whether or not you enjoyed learning and applying this new method this semester.
7. What’s one aspect of solfege that you need to work on the most? What does the class altogether need to work on for next semester?

The Qualtrics data that is collected from the survey will be stored on my laptop, which is password protected and is either with me or locked in my office.

At the end of the fall semester, 2 students from each of the identified research categories (returning students, new students) will be interviewed. The questions will focus on their learning and experiences with the Kodály method in choir for the fall semester. The interviews will be transcribed and then will be coded and themed. Data results will be discussed.

Will data be collected from any of the following populations?

- Minors (under 18 years of age); Specify Age: 15-18
- Prisoners
- Pregnant Women
- Fetuses
- Cognitively impaired persons
- Other protected or potentially vulnerable population
- Not Applicable

Where will research be conducted? (Be specific; if research is being conducted off campus a site letter of permission will be needed)

All research will be conducted in the Choral Suite at the site high school. Vocal recordings will be made during class in a practice room, one at a time. Interviews will take place during the school day and will be conducted outside of the normal class time. The end of course survey will be completed online on the students’ own time.
Will deception be used? If yes, provide the rationale for the deception:
No.

What is the time frame of the study? (List the dates you plan on collecting data. This cannot be more than a year, and you cannot start conducting research until you get IRB approval)
Study will begin near the end of August 2014 (pending IRB approval). Mid-term will be given at the end of October. Posttest will be given during the first two weeks of January 2014. The process will repeat with six different examples at the beginning of second semester, during the last two weeks of January 2014.

Data Analysis
What methodology will be taken to ensure the confidentiality of the data (i.e., how and where data will be stored/secured, how data will be analyzed, who will have access to data, and what will happen to data after the study is completed?)

I have a locked filing cabinet in my office in the Choral Suite at the site high school. This is where the data will be kept throughout the year and only I will have access. The data will be analyzed by using a student growth calculator. The study this year will compare pretest and posttest on an individual and a group basis. The study for 2014-1015 will analyze results from that school year. After the study is complete, I will then analyze the two years and compare student growth from the beginning of the study to the end. When the study is complete, all recordings and related materials will be destroyed.

Reporting Procedures
Who is the audience to be reached in the report of the study?

The audience for the study will be other high school choral directors, and the Graduate Music Faculty.

How will you present the results of the research? (If submitting as exempt, research cannot be published or publicly presented outside of the classroom)

The results of this research will be presented to the Graduate Music Faculty, and to my high school faculty. I also plan to submit the findings to the National Association of Music Educators for publication.

How will feedback be provided to participants?

At the end of the semester, each student will receive an individual review of his or her own data with me.

Experience of the Researcher (and advisor, if student):

What is the prior relevant experience of the researcher, advisor, and/or consultants?
This is my 22nd year teaching and I will be researching sight-reading, which I have taught in some fashion every year during my teaching career. This is my first educational research project.

Dr. Jo-Anne van der Vat-Chromy is the Director of Choral Activities at a large liberal arts university in the Commonwealth of Virginia and a member of the Music Education Committee within the School of Music. Dr. van der Vat-Chromy earned her PhD from Florida State University in 2010. Her dissertation is entitled:

SAFETY, IDENTITY, TRANSMISSION AND ENCULTURATION: AN INVESTIGATION OF FOUR FORMATIVE ASPECTS OF CHORAL CULTURES ON MUSIC MAJORS IN UNDERGRADUATE AUDITIONED AND NON-AUDITIONED COLLEGIATE CHOIRS

Lists of Dr. van der Vat-Chromy’s research interests and scholarly activity are listed below.

RESEARCH INTERESTS

Choral Cultures: Impact on Student Learning, Performance and Teacher Preparation
Kinesthetic Connections to Conducting Pedagogy
Voice Science/Choral Acoustic Music Measurement
Teacher Effectiveness and Student Assessment
Critical Thinking in the Music Classroom/Rehearsal
Consent to Participate in Research

Identification of Investigators & Purpose of Study
You are being asked to participate in a research study conducted by Jeff Ryman from A large liberal arts university in the Commonwealth of Virginia. The purpose of this study is to compare student growth in sight-reading as it relates to teacher self-improvement through study of the Kodály solfege system. This study will contribute to the researcher’s completion of his master’s thesis.

Research Procedures
Should you decide to participate in this research study, you will be asked to sign this consent form once all your questions have been answered to your satisfaction. This study consists of a pretest and posttest that will be administered to individual participants in the choral suite. You will be asked to sing six examples related to the sight-singing study. Each student will be recorded for data collection. This will be an audio-only recording. Also, you will be asked to participate in an interview asking questions about the study and the process involved in learning the Kodály Method. In addition, you will be asked to complete an online exit survey, the results of which will also be used in the study.

Time Required
Participation in this study will complete three in class assessment sessions of less than ten minutes each at the beginning, mid-point, and end of fall semester 2014. Students will also complete an 8 – 15 minute online survey of your experiences at the end of the semester.

Risks
The investigator does not perceive more than minimal risks from your involvement in this study (that is, no risks beyond the risks associated with everyday life).

Benefits
Potential benefits from participation in this study include individual student growth in sight-reading skills over the course of the study in between pretests and posttests.

Confidentiality
The results of this research will be presented to the Graduate Music Faculty. The results of this project will be coded in such a way that the respondent’s identity will not be attached to the final form of this study. The researcher retains the right to use and publish non-identifiable data. While individual responses are confidential, aggregate data will be presented representing averages or generalizations about the responses as a whole. All data will be stored in a secure location accessible only to the researcher. Upon completion of the study, all information that matches up individual respondents with their recordings will be destroyed.
Participation & Withdrawal

All students in Concert Choir will participate in these exercises as a part of the ongoing assessment as outlined in your syllabus. However, the inclusion of your data is entirely voluntary. You are free to choose not to participate. Should you choose to participate, you can withdraw at any time without consequences of any kind. While sight-reading is part of choir requirements, participation in the study, or lack thereof, will not affect your course grade or standing in the choir. Therefore, I am asking for your consent to include your data in my research.
Questions about the Study
If you have questions or concerns during the time of your participation in this study, or after its completion or you would like to receive a copy of the final aggregate results of this study, please contact:

Jeffrey A. Ryman
Department of Music

Dr. Jo-Anne van der Vat-Chromy
Department of Music

Questions about Your Rights as a Research Subject
Dr. David Cockley
Chair, Institutional Review Board

Giving of Consent
I have read this consent form and I understand what is being requested of me as a participant in this study. I freely consent to participate. I have been given satisfactory answers to my questions. The investigator provided me with a copy of this form. I certify that I am at least 18 years of age.

☐ I give consent for my audio recording, interview transcripts, and exit survey to be used for research purposes. ______ (Initials)

☐ I do not give consent for my audio recording, interview transcripts, and exit survey to be used for research purposes. ______ (Initials)

____________________________________
Name of Participant (Printed)

____________________________________
Name of Participant (Signed)  ________ Date

____________________________________
Name of Researcher (Signed)   ________ Date
Parent/Guardian Informed Consent

Identification of Investigators & Purpose of Study
Your child is being asked to participate in a research study conducted by Jeff Ryman from a large liberal arts university in the Commonwealth of Virginia. The purpose of this study is to compare student growth in sight-reading as it relates to teacher self-improvement through study of the Kodály solfege system. This is the do re mi system of sight-reading that your child has studied with me. This study will contribute to the researcher’s completion of his master’s thesis.

Research Procedures
Should you decide to allow your child to participate in this research study, you will be asked to sign this consent form once all your questions have been answered to your satisfaction. This study consists of a pre, mid, and posttests that will be administered to individual participants in the choral suite. Your child will be asked to sing six examples related to the sight-singing study. Each student will be recorded for data collection. This will be an audio-only recording. Students will also participate in interviews asking questions about the study and the process involved in learning the Kodály Method. In addition, your child will complete an online survey documenting their learning during the semester.

Time Required
Participation in this study will complete three in class assessment sessions of less than ten minutes each at the beginning, mid-point, and end of fall semester 2014. Students will also complete an 8 – 15 minute online survey of your experiences at the end of the semester.

Risks
The investigator does not perceive more than minimal risks from your child’s involvement in this study (that is, no risks beyond the risks associated with everyday life).

Benefits
Potential benefits from participation in this study include individual student growth in sight-reading skills over the course of the study in between pretests and posttests.

Confidentiality
The results of this research will be presented to the Graduate Music Faculty. The results of this project will be coded in such a way that the respondent’s identity will not be attached to the final form of this study. The researcher retains the right to use and publish non-identifiable data. While individual responses are confidential, aggregate data will be presented representing averages or generalizations about the responses as a whole. All data will be stored in a secure location accessible only to
the researcher. Upon completion of the study, all information that matches up individual respondents with their recordings will be destroyed.

**Participation & Withdrawal**

Your child’s participation is entirely voluntary. He/she is free to choose not to participate. Should you and your child choose to participate, he/she can withdraw at any time without consequences of any kind. While sight-reading is part of choir requirements, participation in the study, or lack thereof, will not affect your child’s course grade or standing in the choir. Participation in these exercised is mandated by your syllabus, however, you are being asked to have your data included in this research.
Questions about the Study
If you have questions or concerns during the time of your child’s participation in this study, or after its completion or you would like to receive a copy of the final aggregate results of this study, please contact:

Jeffrey A. Ryman
Department of Music

Dr. Jo-Anne van der Vat-Chromy
Department of Music

Questions about Your Rights as a Research Subject
Dr. David Cockley
Chair, Institutional Review Board

Giving of Consent
I have read this consent form and I understand what is being requested of my child as a participant in this study. I freely consent for my child to participate. I have been given satisfactory answers to my questions. The investigator provided me with a copy of this form. I certify that I am at least 18 years of age.

☐ I give consent for my child's audio recording, interview transcripts, and exit survey to be used for research purposes. _____ (Parent’s initials)

☐ I do not give consent for my child's audio recording, interview transcripts, and exit survey to be used for research purposes. _____ (Parent’s initials)

________________________
Name of Child (Printed)

________________________
Name of Parent/Guardian (Printed)

________________________          __________
Name of Parent/Guardian (Signed)    Date

________________________          __________
Name of Researcher (Signed)  Date
YOUTH ASSENT FORM (Ages 13-17)

IRB # 14-0078

Learning New Tricks: Documenting Student Growth Through Teacher Self-Improvement in Kodály Solfege Study

We are inviting you to participate in this study because you are a member of WHS Concert Choir, and we are interested in tracking your progress in sight-reading over the course of the 2014-2015 school year. This research will take you about ten minutes, four times throughout the year.

The two-fold purpose of this mixed methodology study is to: a.) Implement, within a highly successful high school choral program, best practices in sight-reading and music literacy pedagogy, through the implementation of a Kodály-based methodology; b.) Document the learning process of a highly successful mid-career high school choral music educator who has made the decision to upgrade his current pedagogical implementation through study and usage of the Kodály method.

The researcher will use the sight-reading techniques to teach music throughout this school year. You will benefit from this teaching by learning music faster each time you begin a new piece. There are minimal risks associated with this research (meaning there are no risks beyond those of everyday life.)

Your responses will be completely confidential. The audio recordings will only be heard by the researcher and no individuals will be identified in the final presentation. When the study is complete, all recordings and associated materials will be destroyed. Students will also participate in interviews asking questions about the study and the process involved in learning the Kodály Method. In addition, your child will complete an online survey documenting their learning during the semester.
In order for you to participate in this study and to complete this assent form, I must have your parent’s permission on the signed consent form.

If you have any questions at any time, please ask one of the researchers.

If you check "yes," it means that you have decided to participate and have read everything that is on this form. You and your parents will be given a copy of this form to keep.

_____ Yes, I would like to participate in the study.

_____ Yes, I assent to have my audio recording, interview transcripts, and exit survey used for research purposes.

_______________________________________________   __________________________
Signature of Subject                                             Date

_______________________________________________   __________________________
Signature of Investigator                                      Date

Jeffrey A. Ryman
Site Coordinator Letter of Permission

June 15, 2014

TO: Institutional Review Board
FROM: Site Principal
RE: Research Study

Dear Institutional Review Board,

I hereby agree to allow Jeff Ryman to conduct his research. I understand that the purpose of the study is to compare student growth in sight-reading skills.

By signing this letter of permission, I am agreeing to the following:

☑ Researcher(s) have permission to be on the high school premises.

☑ Researcher(s) have access to the data collected to perform the data analysis both for presentation to Graduate Music Faculty and/or for publication purposes.

Sincerely,

High School Site Principal
### APPENDIX 2: ASSESSMENT RUBRIC

<table>
<thead>
<tr>
<th>Score (10-perfect)</th>
<th>Pitch Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>0 incorrect</td>
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<tr>
<td>9</td>
<td>1-2 incorrect</td>
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<tr>
<td>8</td>
<td>3-4 incorrect</td>
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<tr>
<td>7</td>
<td>5-6 incorrect</td>
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<tr>
<td>6</td>
<td>7-8 incorrect</td>
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<td>9-10 incorrect</td>
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<tr>
<td>4</td>
<td>Only 6-7 correct</td>
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<tr>
<td>3</td>
<td>Only 4-5 correct</td>
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<tr>
<td>2</td>
<td>Only 2-3 correct</td>
</tr>
<tr>
<td>1</td>
<td>Only 1 correct</td>
</tr>
</tbody>
</table>
APPENDIX 3: INSTRUCTIONS FOR RECORDING SIGHT-READING TESTS

Directions for sight-reading test:

1. Press “pause” and say your number.

2. Play the note labeled “1”.


4. Play the note labeled “2”.


6. Continue in the same manner for Pretest 3, 4, 5, and 6.

7. When you finish Pretest 6, press pause and return to class.
APPENDIX 4: SIGHT-READING EXERCISES

Sight-Reading Research 1

Sight-Reading Research 2

Sight-Reading Research 3

Sight-Reading Research 4

Sight-Reading Research 5

Sight-Reading Research 6
APPENDIX 5: DATA BY STUDENT NUMBER

Sight-reading Examples 1-3, Pretest, Midterm, Posttest

<table>
<thead>
<tr>
<th>Student #</th>
<th>SR1 Pre</th>
<th>SR1 Mid</th>
<th>SR1 Post</th>
<th>SR2 Pre</th>
<th>SR2 Mid</th>
<th>SR2 Post</th>
<th>SR3 Pre</th>
<th>SR3 Mid</th>
<th>SR3 Post</th>
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Sight-reading Examples 4-6, Pretest, Midterm, and Posttest

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<th>SR4 Post</th>
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