

THE EFFECT OF VOCAL MODELING ON STUDENT ACHIEVEMENT AND
ATTITUDE

by

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The purpose of this study was to examine the effects of vocal modeling on music achievement and student attitude. Forty-eight high school chorus members rehearsed six times under two treatment conditions: (1) vocal modeling, student performance, and reinforcement; and (2) speech directed modeling, student performance, and reinforcement. Sequential patterns of instruction were used to organize teaching segments for both treatments. Vocal modeling was active responses to teacher modeling (singing) musical information, by example or exact production. Speech directed modeling was verbal instruction or other information such as imagery given by the teacher to explain music or performance information utilizing the speaking voice. Recorded individual pre- and posttests were used to assess individual and group musical growth, and a five-question student survey was used to assess attitude.

Results indicated that vocal modeling had a significant positive effect on group music achievement and student attitudes, while speech directed modeling had a negative effect. Overall, individual music achievement demonstrated a significant gain as well. These findings support the use of vocal modeling as a teaching practice in the choral ensemble setting.

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TABLE OF CONTENTS

| Chapter | Page |
|---|------|
| I. INTRODUCTION | 1 |
| Purpose and Research Questions | 4 |
| Hypothesis | 5 |
| Definitions | 5 |
| Limitations | 6 |
| Importance of the Study | 7 |
| II. REVIEW OF LITERATURE | 8 |
| Sequential Instruction and Attitude | 11 |
| Modeling in Music Learning | 15 |
| Instrumental Modeling | 16 |
| Modeling in the Collegiate Setting | 20 |
| Choral Modeling | 22 |
| Modeling in the Elementary Setting | 25 |
| Summary | 31 |
| III. METHODOLOGY | 32 |
| Participants | 32 |
| Selection of Literature | 33 |
| Experimental Environment | 33 |
| Experimental Design | 33 |
| Treatment | 35 |
| Experimenters | 38 |
| Equipment | 38 |
| Measurement Procedures | 38 |
| Rehearsal Times | 38 |
| Individual and Group Ratings | 39 |
| Attitude Survey | 39 |
| Teaching Units | 40 |

| Chapter | Page |
|--|------|
| Analysis | 40 |
| IV. RESULTS | 41 |
| Individual Music Achievement | 41 |
| Group Music Achievement | 42 |
| Student Attitude | 43 |
| V. DISCUSSION | 51 |
| Individual Music Achievement | 52 |
| Group Music Achievement | 53 |
| Student Attitude | 54 |
| Discussion | 54 |
| Limitations | 55 |
| Recommendations for Further Research | 57 |
| APPENDICES | 59 |
| A. ATTITUDE SURVEY | 59 |
| B. INDIVIDUAL PERFORMANCE RATING SCALE | 60 |
| C. CHORAL ENSEMBLE RATING SCALE | 61 |
| BIBLIOGRAPHY | 62 |

LIST OF FIGURES

| Figure | Page |
|----------------------------|------|
| 1. Warm up Exercises | 34 |
| 2. Choral Excerpts | 34 |

LIST OF TABLES

| Table | Page |
|--|------|
| 1. Greco – Latin Square | 37 |
| 2. Research Design | 37 |
| 3. Performance Means and Standard Deviations | 43 |
| 4. Treatment Effects for Song | 44 |
| 5. Paired t – test for Song | 45 |
| 6. Treatment Effects for Conductor | 46 |
| 7. Paired t – test for Conductor | 47 |
| 8. Treatment Effects for Overall Rehearsal | 48 |
| 9. Paired t – test for Overall Rehearsal | 49 |

CHAPTER I

INTRODUCTION

It is imperative that music educators develop teaching skills that provide a solid base for learning and the ability to shape students' verbal and musical responses. The ensemble rehearsal is central to secondary music education. "Throughout most of this century, bands, choirs, and orchestras have been the mainstay of the music curriculum, serving as the primary means of formal music education for tens of thousands of students spanning several generations" (Humphreys, May, & Nelson, 1992, p. 651). Despite the importance placed on classroom music instruction, minimal research has been conducted regarding learning in the ensemble setting (Saunders, & Worthington, 1990). Existing research has had little effect on secondary choral conductors' practices due to the intricacies of the ensemble rehearsal (Humphreys, May, & Nelson, 1992). Despite these details, choral music educators must locate and utilize teaching principles that incorporate best practices.

In an attempt to mold students' vocal responses toward a desired musical outcome, directors often utilize intentional modeling (Grimland, 2001). The use of modeling can serve to provide students with a visual, verbal, or musical clue, which may lead to a more complete understanding of the music being presented. Throughout history, scholars have used past examples and physical demonstrations as models for daily life and work. In Aristotle's (1970) famous aesthetic writing, *Poetics*, he described imitation as a representative portrayal of knowledge. Aristotle believed that students could express

and broaden their knowledge base through careful imitation. Seventeenth-century scholar Comenius believed in the value of teacher demonstrations to progress students' knowledge. He stated, "Do in front of their eyes what you would like them to imitate." He believed that educators must teach all subject matter through example and that "without imitation, precepts and examples will be in vain" (in Sadler, 1969).

In order to effectively examine factors related to classroom teaching, it is important to study learning. Psychologists and researchers have shown that musical comprehension is based on cognition rather than perception. Sloboda (1985) projected that music students develop cognitively in three separate sequential stages, each one characterized by a new activity: (1) through analytical listening, (2) students begin musical expression through observing and matching the teacher's performance, and lastly (3) students achieve completion of a musical task through extensive practice (Sloboda, 1985). Imitation of a master teacher remains at the core of Sloboda's cognitive learning theory, further supporting the need for continued music research regarding modeling.

In addition to cognitive learning theory, psychologist, Albert Bandura, developed a social learning theory based on the process of knowledge acquisition through observation. During his early theory development, Bandura defined observed learning as modeling (Bandura, 1971). Bandura posited that student motivation determined whether or not observed knowledge could be attained. Bandura believed that student attitudes towards the learning process possibly determined the amount of information learned and retained (Bandura, 1986).

Grounded in cognitive and social learning theories, practitioners have incorporated modeling as a fundamental basis for classroom instruction. Music education pedagogue, Edwin Gordon, labeled the action of modeling as rote learning and placed it in the first step of his learning sequence, his aural/oral stage (Gordon, 1980). Shinichi Suzuki (1981) utilized modeling and imitation as the primary step in learning and developed a curriculum that highlighted the use of the teacher as a model. Julia Crane (1988) proposed that student's use of imitation was the first step in music learning. In a review of common teaching practices in music education, Baxter and Stauffer (1988) concluded that "modeling is one of the most widely accepted functions of the teacher" (p. 51).

Recent research has focused on the use of modeling in the instrumental music classroom. Utilizing recorded instrumental models with developing woodwind and brass students has resulted in improvement of their tone color and other performance skills such as musicality and hand coordination (Henley, 2001; Hewitt, 2001; Sang, 1987). Piano students also enhanced their ability to play with accuracy and musicality when a high quality or professional model was provided via recording (Woody, 1999, 2003). Although some research has demonstrated the benefits of modeling in the instrumental classroom, there is a dearth of literature examining the use of vocal modeling in the choral classroom. To date, vocal modeling has been explored primarily in relationship to pitch matching ability in the elementary music classroom (Green, 1990; Hendley & Persellin, 1994; Mang, 1997; Small & McCachern, 1983). More research is needed to further understand the utility and application of modeling in choral music classrooms.

Purpose and Research Questions

Given that modeling has been effective in instrumental and elementary music classrooms, utilizing it in the choral classroom would seem to also provide a teaching strategy for efficient and effective student learning. The purpose of this study was to examine the effects of modeling on individual and ensemble musical growth, and student attitudes. The following questions were addressed in the study:

Individual Musical Growth

1a. Is there a relationship between vocal modeling and speech directed modeling, in combination, on individual musical growth?

Group Musical Growth

2a. Is there a relationship between vocal modeling, considered alone, and group musical growth?

2b. Is there a relationship between speech directed modeling, considered alone, and group musical growth?

2c. Is there a relationship between vocal modeling and speech directed modeling, in combination, on group musical growth?

Student Attitude

3a. Is there a relationship between vocal modeling instruction, considered alone, and student attitude?

3b. Is there a relationship between speech directed modeling instruction, considered alone, and student attitude?

3c. Is there a relationship between vocal modeling and speech directed modeling instruction, considered in combination, on student attitude?

Hypothesis

The following null hypotheses were investigated:

Individual Musical Growth

1a. There will be no difference on pre- and posttest performances using vocal and speech directed modeling on individual musical growth.

Group Musical Growth

2a. There will be no difference between pre- and posttest performances of songs taught via vocal modeling.

2b. There will be no difference between pre- and posttest performances of songs taught via speech directed modeling.

2c. There will be no difference between pre- and posttest performances of songs taught with vocal and speech directed modeling.

Student Attitude

3a. There will be no significant difference between the effect of vocal and speech directed modeling on student attitude.

Definitions

Vocal Modeling

Active participation to a teacher model demonstrating, by example or exact production, musical information.

Speech Directed Modeling

Instructions or other information such as imagery given by the teacher to explain musical information utilizing the speaking voice.

Individual Musical Growth

Changes in student's abilities to match pitch, improve vocal quality, and modify vowel color.

Group Musical Growth

The choir will be assessed utilizing a recorded pre/posttest to determine if the ensemble experienced overall musical growth.

Student Attitude

The definition used for student attitude was derived from Cutietta (1992). Cutietta defined attitude as "a firmly held mental network of beliefs, feelings, and values that is organized through an individual's experience, and that exerts a directive and dynamic influence on the individual's perception and response to all objects and situations with which it is related". He believed that attitude should be assessed through verbal statements that show the connection of methods of response and attitudinal beliefs (Cutietta, 1992).

Limitations

The study utilized a beginning high school choral ensemble in Oregon State. The students were members of an intact SATB ensemble whose instructor and school administration agreed to participate in the study. Therefore, the results may not be

generalized to a larger population due to the lack of random assignment. However, the current study asked a question that had important value to choral classroom instruction.

Importance of the Study

Even though it appears that it is widely used, vocal modeling in the choral classroom has received little empirical testing. Through investigation of work by past psychologists and educators, we can note the value of modeling in educational settings and develop an understanding for implications in choral music education. If vocal modeling can be shown to positively effect individual and group musical growth, music educators will be able to employ these teaching techniques with more confidence, and possibly deeper insight in the classroom.

CHAPTER II

REVIEW OF LITERATURE

The purpose of this study was to examine the effect of vocal modeling on student performance and attitude. The material reviewed focuses on social learning theory, sequential instruction, student attitude, and modeling in the classroom.

Social learning theorists believe that learning takes place through the careful observation of an individual's behaviors (Bandura, 1977; Ormrod, 1999). Ormrod (1999) identified three types of modeling: live models, symbolic models, and models given through verbal instruction. Live modeling was defined as an individual demonstration of a specific behavior. Symbolic models utilized fictional characters that presented a specific behavior through mediums such as television, film, or literature. Lastly, modeling with verbal instruction described a specific behavior through the use of speech directed modeling. Through Ormrod's definition and description of modeling, the use of modeling has proven to be a successful teaching technique and shown overall improvement in cross-curricular classroom learning.

While examining modeling concepts outside the field of music education, team sports and the role of a coach pinpoint these ideas. Interestingly, Schön (1987) described the function of a coach by utilizing a musical example. He believed that coaching was similar to participating in a master class. The use of modeling was described in his description of team sports and shown to increase positive student behaviors and products.

The master class analogy he used aligned the use of sequential instruction in conjunction with modeling. The expert musician involved must pinpoint issues related to the performance at hand followed by specific feedback and suggestions for improvement. The suggestions must be specific to the individual but broad enough to be understood by those with different backgrounds. Following the feedback, the pupil must demonstrate the musical ideas. Often a team prepares for a game through structured practice followed by feedback, instruction, and demonstrations from the coach. Schön's theory, *Follow me!*, described the need for constant demonstration and imitation. He believed that imitation must be experimental and that students must be allowed to experiment within a safe, controlled environment (Schön, 1987). Schön's idea for the playing field directly relates to the music classroom and the daily activities of music educators. Choral directors coach individual students on developing themselves musically, as well as valuing and recognizing the music making process as a group. With carefully structured rehearsal, experimentation, and the need for immediate feedback through modeling, students gain musical insight and develop specific skills.

In the 1960's, Albert Bandura (1971, 1977), a behavioral psychologist, began investigating the use of, what is currently termed, observational learning in social settings, defined as modeling. Bandura divided modeling into four separate processes that he devised after careful observation in social situations. The four processes have been described sequentially as the: (a) attentional process; (b) retention process; (c) behavioral production process; and (d) motivational process.

The attentional process requires the learner to focus on the modeled behavior for skill acquisition. The attentional process is not passive in nature. Bandura believed that the exploration of modeled behaviors lead to self-direction, featuring structure and meaning (Bandura, 1977). The second process, retention, occurs when the learner is provided the opportunity to recall, practice, and demonstrate the modeled behavior. The retention process controls the storing of new information presented by the model and converts memories into correct responsorial products. Carroll and Bandura (1982, 1985, 1987, 1990) investigated the effect of modeling on skill-based behavior through four experiments that controlled the learning environment and utilized specific verbal instruction, feedback, and cognitive development skills. This set of experiments tested the hypothesis that visual feedback presented through modeling stimulates observational learning. Individuals who received visual feedback in combination with modeling produced more accurate representations of the modeled behavior. The investigations of Carroll and Bandura show that learners achieve high learning results when they are presented with modeling in conjunction with specific feedback

Step three, the behavioral production process, occurs when the learner attempts to replicate the modeled behavior with accuracy. Bandura (1977) noted the learner must be mentally and physically capable of performing the modeled task or the third stage will not be successfully realized. The final stage, the motivational process, determines whether the learner will utilize the modeled behavior in the future. In order for this process to result in lifelong learning, students must feel positive reward from peers or an authority figure modeling the selected behavior. The four stages of Bandura's social

learning theory allow us to investigate how students gain and utilize information and how that information may be transferred from a clinical setting to the classroom.

Bandura (1986) continued to expand his ideas regarding social learning theory by stating, “following conceptual traditions, many theorists have conceptualized imitation as a result of modeling viewed as a process by which one organism matches the actions of another, usually close in time” (p. 67). The recognition of temporal proximity has large implications to the field of music, specifically the use of modeling in ensemble rehearsals (e.g. Dickey, 1988; Ebie, 2004; Hewitt, 2000). It is imperative that modeling in choral classes incorporates temporal proximity in order to develop and replicate musical ideas instantaneously.

Sequential Instruction and Attitude

Through Bandura’s extensive investigation on social learning theory and modeling, researchers have been able to apply these techniques and ideas to specific learning situations in classroom settings. While the use of vocal modeling has shown success in the music classroom, it is important to sequentially teach concepts for maximum comprehension and student enjoyment. *The Study of Teaching* (Dunkin & Biddle, 1974) states, “it appears to us that any meaningful analysis of teaching must involve sequential elements ... effective teaching must consist of sequences of presentations that are planned carefully and conducted sensitively” (p. 353). One form of sequential instruction was described by Becker, Englemann, and Thomas (1971) as a three-step process consisting of: (a) teacher presentation of a stimulus; (b) student response; and (c) teacher feedback. This model of instruction has been found to be

effective in the acquisition of academic skill development (e.g. Price, 1983; Price & Yarbrough, 1993; Yarbrough & Hendel, 1993).

The use of sequential patterns of instruction in music has been investigated in the elementary, high school, and collegiate classroom settings. Sequential patterns are defined as: (1) academic task presentation of material; (2) student performance/product; and (3) teacher directed reinforcement (e.g., Price, 1983, 1999; Price & Yarbrough, 1993; Yarbrough & Hendel, 1993; Yarbrough & Price, 1989). Price (1983) studied the effect of conductor task presentation, reinforcement, and practice on performers' overall achievement, attentiveness, and attitude. A university symphonic band rehearsed five times under three conditions: (a) directions followed by performance; (b) musical task presentation followed by directions and interaction with the tasks via performance; (c) task presentation, directions, and performance followed by reinforcement of the tasks. All treatments showed positive gains for musical achievement, while treatment C resulted in the most substantial gains. Yarbrough and Price (1989) examined music instruction settings to determine whether or not sequential patterns were found in the classrooms and rehearsals. Correct sequences, defined as presentation of a task, student response, and reinforcement were found in one-fourth of the total rehearsal time observed. Teachers spent the same amount of time giving directions as they did providing specific musical information. A high rate of disapproval was found among experienced teachers, while student teachers were highly approving of student behaviors. Jellison and Kostka (1987) examined the effect of sequential instruction on elementary students' ability to focus and found that correct sequences directly aided musical achievement.

Yarbrough and Hendel (1993) surveyed students' perceptions of videotaped excerpts of a choral rehearsal with differing types of sequential patterns of music instruction. High school music students ($N= 346$) and elementary students ($N= 190$) evaluated a high school choral director performing scripted teaching episodes that contained 10 correct sequential patterns. When presented with an audio-visual portrayal of 10 complete scripted sequential patterns, students rated the presentation higher. Yet when audio or visual demonstrations were isolated, the scores decreased. Students rated teaching episodes that ended in approvals higher than those that featured disapproval. Price and Yarbrough (1993) found these results consistent when testing sequential instruction on college students who were not music majors. Transcripts of rehearsal excerpts were evaluated by the students who preferred teacher feedback over no feedback, and sequential patterns containing academic task presentation over those with directions only (p.170). The aforementioned sequence of instruction was correctly identified by the students and found again to be preferred.

Price (1999) investigated the use of sequential instruction by preservice band and choral students enrolled in an introductory music education course via three experiments. Students received training using *Competency-Based Music Education* (Madsen & Yarbrough, 1985) as well as a 50-minute instructional period explaining sequential patterns. The studies used three separate procedures where students were able to demonstrate their applied knowledge and refine their specific teaching skills. Undergraduates significantly increased teaching time spent on complete 1-2-3 sequences, specific feedback, and reinforcement. "The promises of the concept of the complete

sequential pattern and its uses are evident. This concept of a teacher presenting a task, allowing for student interaction with the task, and giving specific related feedback is a viable pedagogical tool for training ... Sequential patterns can be used as a means of describing classroom or clinical settings for research or enhancing teaching quality” (p. 27.)

Sequential instruction and the effects of reinforcement in the classroom directly affect student attitude and performance. Music research has shown that student attentiveness is increased under the direction of highly approving teachers rather than disapproving ones (e.g., Forsythe, 1975; Kuhn, 1975). Price (1983) reinforces this statement through significant results regarding positive student attitudes towards teacher cycles that include feedback. Mizener (1993) and Phillips and Aitchison (1998) found that student attitudes towards singing in the elementary setting requires carefully planned instructional strategies. Phillips and Aitchison (1998) found, through the *Attitude Toward Singing Survey*, that students’ interest in singing increases with age and must be linked to positive vocal instruction designed by the teacher. They found that there was a positive relationship between liking to sing in music class and liking general music (p. 32). Hewitt (2000, 2001) investigated the use of modeling to aid in students’ overall performance and practice attitude. His research found that students who received a positive and high quality teacher model had positive attitudes resulting in increased practice. Price (1983) reinforces this statement through significant results regarding positive student attitudes towards teacher cycles that include feedback. Investigation of sequential instruction and its effect on student attitude, show the importance of utilizing teaching techniques that

not only improve classroom instruction but lead to an environment which promotes positive attitudes and growth.

Modeling in Music Learning

Modeling in music classes has been defined as a presentation that may occur through a live or recorded medium that may later be imitated by the observer (Madsen, Greer, & Madsen, 1975). Tait (1992) defines three significant areas of modeling that appear in music teaching and relate to the social learning theory of Bandura. The first, musical modeling, occurs when the teacher demonstrates a complete image of the desired behavior through a vocal or instrumental model. Aural modeling is the use of speech directed instruction and vocalization in order to convey specific points of interest in the music. Vocalization can be demonstrated through humming examples or other vocal mannerisms. The final area, physical modeling, includes conducting, physical gestures, and facial expressions. Tait describes the use of three separate modes of modeling in the classroom, but has found that the literature refers to them all generically as modeling.

In an overview of modeling in music, Dickey (1992) produced an extensive review of literature. Modeling research was included that examined (a) conducting and music teaching; (b) the use of appropriate and inappropriate models; and (c) the use of taped models. Dickey provided the following conclusions about the research: (a) teacher demonstration aids in students' musical development; (b) modeling is effective with a variety of age groups; and (c) vocal or instrumental modeling is more effective than exclusive use of a verbal description for teaching musical concepts that lead to performance. I will discuss specific modeling studies in music education in the following

order, those relating to: (1) instrumental classroom learning; (2) college aged students; (3) the choral classroom; and finally (4) modeling in the elementary classroom.

Instrumental modeling. Examinations of modeling in the instrumental classroom have produced research with mixed results (Costanza & Russell, 1992, p. 505). Puopolo (1971) tested the use of self-instruction instrumental rehearsal materials that utilized a recorded model. Fifth-grade beginning trumpet students from the experimental group, which utilized test materials with a recorded model, produced significantly superior musical results. Zurcher (1975) investigated the use of a tape-recorded musical model for beginning brass instruction. The students received six-weeks of instruction. For the first week of instruction, students were assigned to an experimental or control group. Following the first week of the study, the students alternated between groups. Results indicated that model-supported instruction was more effective and resulted in improvement of pitch-matching ability, pitch-discrimination, and rhythmic accuracy. Modeled tape instruction did not improve skills for fingering or tempo fluctuation. These findings led to the conclusion that utilizing a recorded model was more successful than traditional instruction.

Following Zurcher's findings, Hodges (1975) and Anderson (1981) also investigated the use of a tape-recorded model on performance skills of developing instrumentalists. Both studies found no significant difference between the students who used the tape-recorded instruction and those who received classroom instruction. Following valuable information gathered on the use of tape-recorded modeling, Sang (1987) investigated the association between instrumental music teachers modeling ability

and student performance. Sang developed this study as an outgrowth of a previous investigation (1985). Instrumental teachers ($N=19$) were asked to record musical tasks and examples onto audiotapes. Following the recordings, trained observers evaluated the recordings and analyzed the amount of time each teacher modeled during classroom instruction. Each teacher selected students at random to perform exercises from the *Watkins-Farnum Performance Scale* (Watkins & Farnum, 1962). The results yielded a significant relationship between the teachers' modeling abilities and students' outcomes. Contrary to Hodges (1975) and Anderson (1981), modeling skills in the classroom were described as the "strongest contributors to variance in instructional effectiveness on a consistent basis" (1982, p. 203).

Dickey (1988, 1991) carried out research in his middle-school classroom as well as a second school where the study was replicated. He investigated modeling with verbal instruction versus modeled behavior without verbal instruction. One hundred and twenty-eight middle school students in four intact bands served as the subjects. Students in the verbal group received verbal responses from the instructor to help them identify specific music problems. Students in the nonverbal group solved musical problems through student, teacher, and group modeling. Students in the nonverbal group displayed significant difference for the kinesthetic measures and ear-to-hand test. There was no significant difference in the development of musical discrimination. The use of modeling without speech was a productive teaching technique in the classroom and musical discrimination improved through nonverbal/modeled instruction.

Delzell (1989) investigated the use of modeling and music discrimination training on students' skill and performance. The study sought to determine if students who received music discrimination training and modeling would demonstrate higher levels of musical discrimination or performance skills than students who did not. The results of the study indicated that there was a stronger relationship between the pre- and posttest than the training. The students who made gains in performance benefited most from the discrimination training, although both groups showed significant improvement between the pre- and posttests. Significant differences were found for music discrimination skills for students who received modeling instruction. Gillespie (1991) studied the use of modeling with young string players. He reviewed various string pedagogy approaches in the classroom to investigate the most effective methods of instruction. The results indicated that teachers who engaged in modeling without excessive verbal instruction, demonstrated through the Suzuki approach, improved student performance.

Hewitt (2000, 2001) studied the effects of modeling as a practice technique on instrumentalists' music performance and attitude. Eighty-two brass, woodwind, and percussion students were placed in eight groups that received varying amounts of modeling, self-listening, and self-evaluation. The eight groups consisted of: (1) model x self-listening x self-evaluation; (2) model x self-listening x no self-evaluation; (3) model x no self-evaluation x self-evaluation; (4) model x no self-listening x no self-evaluation; (5) no model x self-listening x self-evaluation; (6) no model x self-listening x no self-evaluation; (7) no model x no self-listening x self-evaluation; and (8) no model x no self-listening x no self-evaluation (Hewitt, 2000, p. 41). The students participated in the study

for nine-weeks. A general linear model (GLM) repeated-measure analysis was used for the two modeling conditions, two self-listening conditions, and two self-evaluation conditions and showed no significant difference. The students who listened to a professional model during instruction increased overall performance skills in the following categories even though the statistical findings were not significant: rhythmic accuracy, tempo, tone, technique, articulation, and performance (Hewitt, 2001, p. 310). Henley (2001) also examined the effects of modeling as a practice technique utilizing high school instrumental students. The subjects ($N = 60$) were brass and woodwind players from two intact high school bands. Students were pre- and posttested on an etude from *Essential Technique: Intermediate to Advanced Studies* (Rhodes, Bierschenk, Lautzenheiser, Higgins, & Petersen, 1993). Following the pretest, subjects were placed in one of six experimental groups that featured the same etude modeled at six different tempi which increased over the treatment period resulting in performance tempo. All subjects heard the same recorded set of instructions followed by a professional recording of the piece on a violin. The students followed the lesson and concluded by playing through the etude. The student recordings were analyzed by trained observers for the number of wrong pitches played and the duration of the incorrect pitches. Results from the analysis of variance showed that there was significant difference between use of the model and rhythmic accuracy gains for the six test conditions. The results also showed that students who used the model during individual lessons produced significantly higher gains than students who did not receive the model. The use of a model for instruction has shown success in the elementary, secondary, and collegiate level. The use of modeling to

increase individual student accuracy (Henley, 2001) provides music educators with instructional tools for teaching individual lessons and modeling concepts for the ensemble setting.

Modeling in the collegiate setting. Just as with instrumentalists in secondary school settings, the use of modeling with college-aged instrumental students' has shown positive results. Rosenthal (1984) examined the use of four modeling conditions on instrumental music performances of 44 graduate and upper level undergraduate students majoring in music education. Students prepared a 32-measure selection for 15 minutes under the constraint of the selected test model. The four conditions were: (1) guided model; (2) model only; (3) guide only; and (4) practice only. A verbal guide was designed that directed subjects to the tempo and style of the piece, rhythmic interpretations, phrasing, and dynamic markings. The guided model featured the verbal guide and a model of the music selection. The model only group consisted of three performances of the selection with no other instruction. The guide only consisted of the verbal guide without musical modeling. Finally, the practice only group received no verbal instruction or modeling (p. 267). Modeling had a positive effect on dynamics, tempo, notes, and rhythms. The model only group had significantly higher scores when compared to all other treatment groups. Students who received a guided model for instruction scored significantly higher than the other two groups (guide and practice only).

Rosenthal, Wilson, Evans, and Greenwald (1988) built upon Rosenthal (1984) and examined the use of five methods of instruction on 60 college trombonists. They

implemented five conditions consisting of: (a) modeling with a professional recording; (b) singing the exercise; (c) silent analysis; (d) free practice; and (e) individual rehearsal /control. All five groups of students rehearsed under the designated conditions for three minutes. Modeling proved to be as helpful as individual rehearsal and more useful than silent analysis or singing (p. 254).

Utilizing principals of Rosenthal, Wilson, Evans, and Greenwald (1988), Theiler and Lippmann (1995) investigated the use of modeling and mental rehearsal on guitar and vocal performances of music majors. Guitarists and vocalists learned a brief musical excerpt under one of the following four conditions: (a) mental practice alternating with a recorded model; (b) mental practice alternating with physical rehearsal; (c) physical practice alone; and (d) a motivational activity alternating with physical practice. Mental practice paired with a recorded model produced superior vocal results in pitch accuracy, tempo, tone quality, and dynamics compared to students who received the remaining three treatments. Guitar students showed significant differences utilizing mental practice and a model in tone quality and mental coding. The use of modeling positively affected overall performance results.

Since past research showed that modeling positively affected individual student performance, Kelly (1987) studied the use of discrimination training and modeling as means to increase peer music teaching skills. He taught one group strictly using videotaped models, while the other group involved active participation and live models. No significant difference was found between the groups.

The use of modeling has shown improvement on skill acquisition but not intently examined the effect of modeling on musicality and expressive playing. In two studies, Woody (1999, 2003) examined the effects of modeling on expressive piano performance. For the first study, pianists' abilities to discuss and replicate a short musical example played via MIDI on an acoustic piano were examined. After students heard a model, they were asked their thoughts regarding overall dynamic contrasts and were then asked to replicate the example. Students who could accurately identify dynamic features of the model were better able to incorporate the contrasts effectively into their personal performance than those who were not.

The second study Woody (2003) pursued, investigated the use of a modeled expressive performance and its effects on students' abilities to imagine the piece and produce it. After hearing expressive and expressionless models, pianists ($N=25$) were asked to reproduce the performances and draw pictures depicting what they heard. Students were able to correctly identify and replicate the expressive modeled features of the musical example. Students who replicated the expressive modeled examples showed statistical significance in individual performance gains.

Choral modeling. While there is some literature examining instrumental modeling in both solo and ensemble settings, the study of vocal modeling in the choral classroom is underrepresented, leaving room for new investigation. Watkins (1986) examined the use of modeling, technical speech, and metaphorical language on student attentiveness. High school directors were observed during classroom instruction to measure the amount of time spent on the three identified factors. Directors spent 50% of rehearsal time on verbal

behavior and 50% on student singing. Modeling in the classroom accounted for 27.8 % of rehearsals and resulted in increased student on-task behavior when compared with other teacher verbalizations.

Williams (1994) investigated the effect of sex specific vocal modeling on the pitch-matching accuracy of high school students. Four high school choral programs were selected that each met one the following criteria: (a) male students taught by a male; (b) male students taught by a female; (c) female students taught by a male; and (d) female students taught by a female. The four selected teachers made a recording that vocally modeled an echo-singing musical example. Students were tested for general pitch-matching accuracy; those who were not accurate to at least a half-step were not included in the study (p. 41). Students were asked to record their response to two pre-recorded models, one male and one female. Results indicated that male and female students sang significantly better with a same sex model. This study indicates that the specific model might be consequential in classroom performance and the ability for students to succeed. These results might give vocal educators pause to consider what forms of modeling are best for specific sexes of singers.

Keenan-Takagi (1995) tested the effect of modeling and mental rehearsal during the choral rehearsal. High school choruses ($N= 7$) were randomly assigned one to one of two treatment groups, modeling with or without mental rehearsal. The Choral Music Achievement Test (ChorMAT) (Weymuth, 1986) was used to measure pre/posttest gains. Following a four- week treatment period, no significant difference was found between

modeling with and without mental rehearsal, although there was a gain in the overall scores of the ChorMAT.

Grimland (2001) performed a descriptive study that investigated various characteristics of teacher-directed modeling during high school choral rehearsals. The study sought to examine: (a) what modeling activities teachers were exhibiting during classroom instruction; (b) directors' abilities to recognize and define their modeling behaviors; and (c) modeling-based instructional episodes that were not correctly identified by the teachers. Three high school choral directors were selected to participate in the study. After 16 - weeks of observation, three forms of modeling were defined. The first, audible modeling, consisted of teacher directed vocal models that included chant, singing, and rhythmic reading. The second were visible models, which occurred when teachers used physical actions or facial expressions to convey musical material or instruction. The last identified technique was process modeling, demonstrations that involved students' ability to complete musical tasks through acquired skills. These sequences were described by the participating teachers as "addressing aspects of musical performance...meant to contribute to students' overall autonomy as musicians" (p. 8). Observations from the study indicated that the three teachers, regardless of age or experience, utilized observable forms of modeling daily in the classroom that aided in what they believed was increased overall music comprehension.

An investigation of vocal modeling on expressive singing in the middle school classroom produced results further confirming the effectiveness of modeling. Ebie (2004) examined students' ability to convey the emotions of fear, anger, sadness, and happiness

when demonstrated with or without modeling (p. 405). An interaction was found between the ability of males and females to convey the emotion of anger within their performances when compared to the other three emotions; female students scored significantly lower than male students. The emotions sadness and happiness were equally well communicated by both groups, while fear was difficult for students to vocally project. Vocal modeling was a statistically significant treatment model.

Modeling in the elementary setting. “Music educators are responsible for establishing high performance standards by providing models and leading children in appropriate performances within the normal classroom setting” (Baker, 1980, p. 4). Baker (1980) studied the use of appropriate and inappropriate models to demonstrate dynamics and tempo in traditional sea shanties and lullabies. A comparison of third-grade ($N = 36$) and fourth-grade ($N = 39$) students found that musical choices were affected by in-class teacher models. Students formed musical opinions and replicated the “correct” musical models during in-class performance when presented with appropriate vocal models. Building upon the idea of correct and incorrect vocal musical models, Turner (1996) investigated the importance of modeling and verbal instruction on second and fifth-grade students’ abilities to replicate sequential musical tasks on the xylophone. Fifth-grade subjects performed more complete performances than second-grade subjects. Second-graders who received a combination of verbal and visual modeling played their musical examples with fewer errors. Conclusions of the study indicated that the effects of modeling conditions varied both by age group and skill level.

Utilizing secondary education research on the effects of feedback in conjunction with modeling, Rutkowski and Miller (2003) investigated the use of modeling, in combination with differing teacher feedback, on the development of first-grade students' singing aptitude. Subjects received 40-minutes of music instruction once a week. The treatment group received modeling and specific feedback following singing episodes, while the control group received modeling and generic feedback following group singing. Musical development was assessed on an individual basis utilizing the *Intermediate Measures of Music Audiation* (Gordon, 1986). Although there was no statistical significant difference, subjects in the treatment group had a greater increase in correct musical responses, while subjects in the control group had a loss in singing achievement. The authors suggest that although there was no significant difference, the results are supportive of teacher feedback and the use of modeling. "Helping all children learn to use their singing voices has been a goal of American music education for over 150 years. Researchers must continue to investigate effective instructional strategies to assist teachers in providing successful singing experiences for all their students" (Rutkowski & Miller, 2003, p. 8-9).

Just as different studies have provided differing levels of support for modeling, an investigation of male and female vocal models on elementary students produced mixed results. Zwissler (1971) and Rosenborough, Troncoso, and Piper (1972) investigated the use of various models including piano, xylophone, a female voice, and a male voice on pitch-matching. Results indicated that elementary students matched pitch best in their own octave without the use of transposition, utilizing a female vocal model. Clegg (1966)

and Petzold (1966) found that elementary children demonstrated better pitch-matching when responding to a female vocal model as opposed to an adult male's natural voice or a flute. Tatem (1990) found that kindergarten through third-grade students vocally responded most accurately to a female (soprano) vocal model when compared to a resonator bell.

In an early pitch-matching study, Hermanson (1972) compared the use of four prerecorded models on in-tune singing: a female voice, a child's voice, a piano, and an oscillator. Kindergartners and third-graders ($N = 103$) participated in instruction featuring the four selected models. The subjects had the highest vocal accuracy with the female voice while the piano resulted in the lowest. In contrast, Green (1990) found that students matched pitch most accurately with a child's vocal model. The study utilized an intact laboratory school of 282 students. They were taught through a female or male adult voice or a peer model. The rate of accuracy increased with students' ages and the male model produced students attempting to sing down the octave.

In another study examining the impact of stimulus octave, Montgomery (1988) used a male teacher employing his true voice and falsetto. A comparison of the two teaching models resulted in no statistical difference, yet students tended to sing back examples modeled through falsetto with more accuracy. Hendley and Persellin (1994) also investigated the use of male falsetto and the lower male voice on the vocal accuracy of children. First, third, and fifth grade students ($N = 142$) participated in an eight-week treatment that featured rote song instruction utilizing a male tenor voice or male falsetto voice. Results showed that following the treatment with a falsetto model, 30 % of first

graders, 23 % of third graders, and 54 % of fifth graders were successful at matching pitch (1994, p. 5). The third and fifth-grade students had significantly higher pitch matching accuracy when singing with the male falsetto vocal model. Students who received the tenor vocal model failed to improve, resulting in lower overall scores. The tenor vocal model appeared to hinder subjects' abilities to sing accurately, while the use of a male falsetto voice proved statistically significant through comparison testing. "While some male music educators may be reluctant to sing in falsetto, it is suggested that our results...may encourage them to use this valuable tool in their classrooms" (p. 6).

Investigations on the effects of male and female models on singing have shown slight variations in results (Mang, 1997; Small & McCachern, 1983). Small and McCachern (1983) found that first grade students were able to improve pitch-matching skills using either a male or female vocal model. Fifty-five first graders were given two pretests for pitch-matching accuracy. Classroom instruction was provided through tape-recorded lessons using a male and female vocal model, and resulted in increased pitch-matching ability by male and female students. Mang (1997) compared teaching by male and female music teachers on the melodic singing achievement of first grade children. The study included tonal aptitude as a factor for student achievement. Using a convenience sample, 83 first graders were selected to participate in the study. Students were administered the tonal subtest of the *Primary Measures of Music Audiation* (Gordon, 1979). Following a five-week treatment, students performed two selected songs for evaluation. They had greater difficulty identifying the difference in octave and transposition when presented the male vocal model than the female model.

The impact of vocal modeling on musical development of uncertain singers has produced promising results. Porter (1977) found that utilizing multiple discrimination techniques and approving students for successive approximations of the task, resulted in an increase of accuracy among uncertain singers. In a variation on the pitch-matching study of Small and McCachern (1983), Apfelstadt (1984) investigated the effect of melodic perception, rather than pitch training on the vocal development of kindergarten students. This study utilized modeling to determine melodic perception and student production. Following an 11-week treatment period, there was little variation in students' ability to discriminate pitch. A positive significant difference was found for vocal discrimination on music patterns and rote-songs for subjects who received modeling alone. Persellin (2006) attempted to determine the effect of three vocal modeling treatments on kindergarten children: (a) the teacher always sang for but not with the class; (b) the teacher sang with but not for the class; and (c) the teacher sang both for and with the class. Students were pre- and posttested using the *Vocal Accuracy Assessment Instrument* (Youngson & Persellin, 2001), *Primary Measures of Music Audiation* (Gordon, 1979), and the *Home Environment Scale* (Brand, 1982). Results indicated that children's vocal accuracy improved regardless of treatment.

Yarbrough, Green, Benson, and Bowers (1991) performed an exploratory study to investigate variables that affected pitch-matching ability in inaccurate singers. Students ($N = 163$) were selected based on their inability to accurately match pitch when modeled by a male and female voice. Prior to the treatment, students received eight-weeks of instruction on the Kodály melodic sequence in the following order: *sol, mi, la, re, do*,

sol, la, fa, ti, as well as Curwen hand signs. Students were assigned to one of three different response groups: (a) singers responded with neutral syllables *la-la*; (b) singers responded with solfege syllables *sol-mi*; or (c) singers responded using Curwen hand signs. There was no significant difference among the three response treatments, but overall, singers responded more accurately to a female vocal model. Two subsequently related studies focused on specific factors that effect inaccurate singers (Price, Yarbrough, Jones, & Moore, 1994; Yarbrough, Bowers, & Benson, 1992). Yarbrough, Bowers, and Benson (1992) looked at the effect of vibrato on certain and uncertain singers' ability to match pitch. Students were asked to vocally respond to three stimuli: (a) a child vocal model with 100% pitch accuracy; (b) an adult female vocal model with vibrato and 79.53% accuracy due to deviations resulting from vibrato; and (c) the same female vocal model with no vibrato that was 100% accurate. Significant differences were found among the three treatments for certain and uncertain singers. Certain singers demonstrated a high number of correct responses regardless of the model presented; however, uncertain singers responded least accurately to the child vocal model. The nonvibrato model yielded the most accurate responses for all singers. "At least for younger children, and especially for [un]certain singers, the presence of vibrato in the voice of the teacher should be reserved for solo work and should be kept out of the elementary classroom" (Yarbrough, Bowers, & Benson, 1992, p. 37).

Price, Yarbrough, Jones, and Moore (1994) investigated the use of male falsetto, timbre, and sine-wave models on interval matching of inaccurate boys and girls. Students were presented with descending minor third patterns sung in male falsetto, in tenor and

bass voices natural ranges, as well as two sine-wave recordings in the same octaves as the male voices. Students responded more accurately to the male vocal models than the sine-wave examples. The uncertain boys sang more accurately using the lower vocal models, while girls performed best utilizing higher vocal models.

Given the research, modeling shows promise without consistent results as an instructional tool in: (a) the instrumental classroom; (b) collegiate instructional settings; (c) the choral classroom; and (d) with elementary students.

Summary

The use of modeling and sequential instruction have been investigated separately and used by expert teachers in the field of music education. In music classrooms at the elementary, middle, high school, and collegiate levels, teachers have been able to positively affect students' musical outcomes with the use of modeling. However, there is not an abundance of research on modeling in the high school choral classroom, making it difficult to come to firm conclusions regarding its efficacy. To determine how modeling assists learning in high school choral ensembles, we must combine concrete instructional tools found to be effective in past research with substantial evidence that modeling will lead to positive musical outcomes, before modeling can be promoted as having a good foundation. Therefore, the purpose of this study was to determine the effect of vocal modeling, in combination with a controlled research-based teaching technique (sequential patterns), on individual student, group performance, and attitude in the choral classroom. In order to do this, I compared the results of teaching high school choral music with and without modeling.

CHAPTER III

METHODOLOGY

The first two chapters provided an overview of the use of modeling in the instrumental, choral, and elementary classroom. Due to the fact that little research has been conducted utilizing vocal modeling in the high school choral classroom, this study sought to improve and gather empirical data. The study examined the use of vocal modeling on music achievement and student attitude.

Participants

Participants were members of the Willamette High School mixed choir in Eugene, Oregon. The chorus ($N = 46$) was an auditioned ensemble composed of ninth ($n = 8$), tenth ($n = 10$), eleventh ($n = 18$), and twelfth-grade ($n = 10$) students. Students ranged in age from 14 to 18 years of age with a mean of 16.11 ($SD = 1.12$) years. The number of females in the chorus outnumbered the males 26 to 20. Forty-two of the students had not taken private voice lessons, whereas four students had participated in lessons, ranging from 1 to 3 years with a mean of 1.5 ($SD = 0.84$) years. Six students also participated in the band, ranging from 3-6 years with a mean of 4.5 ($SD = 1.38$) years. Two of the 46 students had taken private piano lessons, for 5 and 7 years respectively with a mean of 6 ($SD = 1.41$) years.

Selection of Literature

Prior to the experimental phase of the study, four choral pieces were selected to use as the stimulus material. The four selections were: *O Sing to God* by Henry Purcell, arranged by Patrick Liebergen; *Concord* by Benjamin Britten; *Tomorrow Shall Be My Dancing Day* by John Gardner; and *Sure on this Shining Night* by Samuel Barber. The selected works were an appropriate level of difficulty for the ensemble. The stimulus material was approved and validated by a University faculty member and two choral music educators familiar with appropriate secondary choral literature.

Experimental Environment

The experiment was conducted during the choir's regular rehearsal time and in the normal choral classroom. The individually recorded vocal pre- and posttest sessions took place in a practice room located near the classroom. One experimental teacher, one observer/media technician, and audio-visual equipment were present during the experiment. The choir met on a modified block schedule resulting in two to three 90-minute rehearsals per week. One week of rehearsals, two 90-minute rehearsals, were used for acclimation purposes and for students to become familiar with the selected repertoire by sightreading the four pieces. A pretest was taken following the first week of exposure to the four selections that consisted of individual and group testing. Throughout the experiment, regular rehearsals continued within the experimental environment.

Experimental Design

The investigation included an individual and group pre- and posttest, and six treatment sessions each featuring an attitude survey. The individual tests consisted of solo

The ensemble was recorded performing all four selections following the acclimation period as a pretest, and again at the end of the treatment as a posttest to assess group musical progress. The six treatment sessions rehearsed the four choral compositions spread across two treatments conducted by one conductor in order to isolate and control sequential instruction and modeling (see Table 2). The experimental treatments were: (1) academic task presentation consisting of vocal modeling, student performance, and reinforcement; and (2) academic task presentation consisting of speech directed modeling, student performance, and reinforcement. Each of the four choral selections was paired with a treatment and received an equivalent amount of treatment time. Choral selections 1 and 2, *O Sing to God* and *Concord*, received vocal modeling instruction, while choral selections 3 and 4, *Tomorrow Shall Be My Dancing Day* and *Sure on this Shining Night*, received speech directed modeling instruction. A partial Greco-Latin square was used to establish and control the treatments and music orders (see Table 1).

Treatment

The conductor utilized the following guidelines for both treatments: (a) maintain eye contact with group and individuals throughout training sessions; (b) vary voice volume as well as speaking pitch reflecting enthusiasm and vitality; and (c) use arms and hands to aid in musical phrasing, employing a great variety of movements and varying size of conducting patterns to indicate phrases, and dynamics (Price, 1981, p.43). A complete teaching unit was defined as episodes that featured three sequential parts based on Price (1981): (1) teacher presentation of a task via vocal modeling or speech directed

modeling; (2) student performance/response; (3) teacher reinforcement for student responses. For treatment 1 (vocal), the conductor was given the following instructions: (a) musical information given to the choir should be demonstrated with vocal modeling at all times; (b) no spoken verbalizations should be given, except for starting/stopping cues, and student reinforcement. For treatment 2 (speech directed), the conductor was given the following instructions: (a) musical information given to the choir should be demonstrated with speech directed modeling at all times; (b) no vocal modeling should be used at any time.

The conductor's rehearsal time and adherence to sequential instruction was monitored by a trained observer. The observer cued the conductor by displaying a color coded sign out of view from the ensemble members. After 15 seconds, a green sign cued the conductor to leave the academic task presentation and move to student performance/response. After 30 seconds, a yellow sign cued the conductor to move to reinforcement, and after 15 seconds a red sign cued the conductor to begin a new sequence. Each choral selection received 10 one-minute sequences that allowed the choir to work on individual musical tasks within the selected treatment under the semblance of a "normal" choral rehearsal. Following the 10 sequences, subjects completed a five question attitude survey (Appendix A). The entire daily session for each piece lasted approximately 13 minutes.

Table 1

*Greco-Latin Square**

| | | | |
|---|---|---|---|
| 1 | 2 | 3 | 4 |
| 3 | 1 | 4 | 2 |
| 4 | 1 | 2 | 3 |
| 2 | 4 | 1 | 3 |
| 1 | 4 | 3 | 2 |
| 4 | 3 | 2 | 1 |

* 1 = Treatment 1, 2 = Treatment 2, 3 = Treatment 3, 4 = Treatment 4

Table 2

*Research design**

| | | | | | | | | | |
|----------------|-----------------|----------------|-----------------|----------------|-----------------|----------------|-----------------|----------------|----------------|
| O ₁ | X _{V1} | O ₃ | X _{V2} | O ₃ | X _{T3} | O ₃ | X _{T4} | O ₃ | O ₂ |
| O ₂ | X _{T3} | O ₃ | X _{V1} | O ₃ | X _{T4} | O ₃ | X _{V2} | O ₃ | O ₂ |
| O ₂ | X _{T4} | O ₃ | X _{V1} | O ₃ | X _{V2} | O ₃ | X _{T3} | O ₃ | O ₂ |
| O ₂ | X _{V2} | O ₃ | X _{T4} | O ₃ | X _{V1} | O ₃ | X _{T3} | O ₃ | O ₂ |
| O ₂ | X _{V1} | O ₃ | X _{T4} | O ₃ | X _{T3} | O ₃ | X _{V2} | O ₃ | O ₂ |
| O ₂ | X _{T4} | O ₃ | X _{T3} | O ₃ | X _{V2} | O ₃ | X _{V1} | O ₃ | O ₁ |

* O₁ = Individual vocal recording, O₂ = Group ensemble recording, O₃ = Attitude Survey
 V = vocal modeling, T = verbal instruction, 1-4 = music selection

Experimenters

The experimental conductor was an individual with high school and collegiate-level conducting and teaching experience. The observer/media technician monitored use of time and aid with use of the signal signs discussed above.

Equipment

Audio recordings of individual students, choir, and conductor were made using a Belkin digital microphone and an iPod classic. The recordings were used for assessment purposes and documentation of the treatments. The pre- and posttest recordings of individual students and the choir were used to evaluate individual and group musical achievement. The recordings were organized using iTunes, creating individual digital tracks for each individual pre- and posttest and eight tracks for the group pre- and posttests.

Measurement Procedures

Rehearsal times. Time spent on each sequence was measured and cued by the trained media technician and subsequently assessed for accuracy utilizing the recordings. The six treatment sessions each lasted 13 minutes a piece. Treatment 1 (vocal) consisted of 10 teaching sequences containing: 15-seconds of teacher instruction through vocal modeling, 30-seconds of student performance, and 15-seconds of teacher reinforcement for student responses. Treatment 2 (speech directed) consisted of 10 teaching sequences containing: 15-seconds of teacher instruction through speech directed modeling, 30-seconds of student performance, and 15-seconds of teacher reinforcement for student

responses. The teaching sequences followed the research design (Table 2) and resulted in six 13-minute segments totaling 52 minutes per day.

Individual and group ratings. A panel of four expert judges independently listened to digital recordings of all pre- and posttest performances. The four judges each had a minimum of four-years of public school music teaching and were familiar with sequential instruction. The four judges received a one-hour training on the rating scales and practiced using them on two individual pre- and posttests and two group recordings that were not used for the final data collection. After the judges assessed the four sample recordings, reliability was calculated $((\text{no. of agreements} / \text{total comments}) \times 100)$ and showed interjudge reliability of 90 %. The pre- and posttest recordings were randomized utilizing iPOD technology, creating a digital compact disk recording of the music clips. The individual and group pre- and posttests were rated using two adaptations of the *Five Dimensions of Achievement in Choral Music Performance* (5DACMP) in Appendixes B and C. Larkin (1985) created the 5DAMP to “investigate the feasibility of objective, diagnostic measurement of achievement in choral music performance” (p. 7). The research sought to “establish reliability and other aspects of preliminary validity of five ratings scales” (p.7). After statistical testing, the rating scale was found to be additive and specific.

Attitude survey. Attitude was assessed by means of an attitude scale adapted from the *Attitude Survey for Performance* (Madsen & Yarbrough, 1985). The five question scale was administered to the choir following each choral selection, resulting in four

surveys per day. The survey served to assess trends in daily attitude toward Treatments 1 (vocal) and 2 (speech directed), and looked for changes across time.

Teaching units. Recordings were used to analyze and count complete teaching units. Teaching segments were totaled to look for complete sequences for treatment 1 and 2. All units which featured a 1-2-3 sequence, without error, were considered complete. Complete sequences were tabulated daily by the trained media technician following the 10 teaching sequences.

Analysis. The individual and group pre- and posttests were analyzed for differences among treatments and between pre/posttests and groups via an ANOVA and *t*-test. To analyze the attitude survey, the data was presented descriptively by means, standard deviations, and line plots utilizing a random effects ANOVA and paired *t*-test.

CHAPTER IV

RESULTS

In an effort to examine the effects of modeling on individual and ensemble musical growth as well as student attitude, I worked with an auditioned high school SATB chorus. Four comparable selections were rehearsed under two treatments, vocal modeling and speech directed modeling. The following are analyses of data for individual student music achievement, group musical performance with or without vocal modeling, and student attitude.

Individual Music Achievement

Four independent judges scored students pre- and posttests for musical growth using an adaptation of the *Five Dimensions of Achievement in Choral Music Performance* (Larkin, 1985). Pre- and posttest scores, ranged from 4 to 16, out of a possible 16, for the four aspects of performance that were assessed (see Appendix B). The mean for individual performance pretests was 7.02 ($SD = 11.52$), the posttest mean was 6.39 ($SD = 1.78$).

Overall scores on a scale of 1-100, for individual performances were also provided by the four judges for each student. The means of these four scores for the pre- and posttests (see Appendix B) were calculated for each individual (range = 26.25 to 81.50). The mean for individual overall scores on the pretest was 55.26 ($SD = 18.08$), and 65.28 ($SD = 14.13$) on the posttest.

Given that the results indicated improvement between pre- and posttest data, null hypothesis 1a, There will be no significant difference on pre- and posttest performances using vocal and speech directed modeling on individual musical growth, was not examined due to the lack of ability for treatment comparison due to the test design.

Group Music Achievement

The four independent judges scored group pre- and posttests of ensemble performances of the four pieces rehearsed under the two conditions using the *Five Dimensions of Achievement in Choral Music Performance* (Larkin, 1985). Pretest scores for the five aspects of performance assessed ranged from 3 to 18, out of a maximum of 20. The posttest scores ranged from 4 to 20, out of a maximum of 20 (see Appendix C). The mean for individual performance aspects of vocal modeling on the pretest was 3.75 ($SD = 0.71$) and the posttest was 8.88 ($SD = 0.18$). Means for specified performance aspects of speech directed modeling on the pretest was 1.5 ($SD = 0.70$) and 2 ($SD = 0$) on the posttest. Table 3 provides a summary of all adjudication data.

Overall scores of the group choral performances were also provided by the four judges for each selection. The four judges' pre- and posttest total scores (see Appendix C) for both treatments were averaged obtaining a number from 1- 100, with a range on the pretest of 22 to 80 and on the posttest of 33 to 87. Overall mean scores on the pretest for treatment 1, vocal modeling, was 53.75 ($SD = 1.77$) and on the posttest was 81 ($SD = 1.01$). Mean scores on the posttest for treatment 2, speech directed modeling, was 42.75 ($SD = 13.79$) and on the posttest was 49.5 ($SD = 5.30$). Posttest scores for vocal modeling had a dramatic gain over final posttest scores for speech directed modeling.

Even though no inferential statistical analyses were used due to the small cell sizes given that there were four judges' scores, the results appear to indicate that there were differential improvements between pre- and posttest data between treatments, the following null hypotheses are rejected: 2a. There will be no difference between pre- and posttest performances of songs taught via vocal modeling; and 2b. There will be no difference between pre- and posttest performances of songs taught via speech directed modeling.

Table 3

Performance Means and Standard Deviations

| Treatment | Perf. Pre | Perf. Post | Gain | Choir Pre | Choir Post | Gain |
|---------------|-------------------|-------------------|---------------|---------------------|--------------------|--------------|
| Vocal | 3.75(1.67) | 8.88(1.73) | 5.13 | 53.75(9.91) | 81.0(6.80) | 27.25 |
| Song 1 | 4.25(2.06) | 9.00(0.82) | 4.75 | 55.0(9.13) | 81.0(2.71) | 26.0 |
| Song 2 | 3.25(1.26) | 8.75(2.5) | 5.50 | 52.5(11.90) | 81.0(10.03) | 28.5 |
| Speech | 1.5(0.76) | 2.0(0.76) | - 0.50 | 42.75(11.40) | 49.5(11.69) | 6.75 |
| Song 3 | 1.0(0) | 2.0(0.82) | - 1.0 | 33.0(4.97) | 45.75(11.79) | 12.75 |
| Song 4 | 2.0(0.82) | 2.0(0.82) | 0 | 52.5(5.0) | 53.25(11.93) | 0.75 |

Student Attitude

A random effects analysis of variance (ANOVA) was used to analyze responses to the five questions on the student attitude survey (Appendix A). An overall attitude score (1-5) was calculated for each question. Individual questions were analyzed and

similar ones paired. Questions 1 (I like this song) and 2 (I enjoyed rehearsing this song) were paired because they addressed the piece of music being rehearsed. Questions 3 (I enjoyed the conductor) and 4 (I enjoyed the teaching) were paired because they dealt with the conductor and day-to-day teaching. Question 5 (Rate this overall rehearsal) stood alone because it combined the music and conductor. For questions 1 (I like this song) and 2 (I enjoyed rehearsing this song), a type 3 fixed effects test (see Table 4) showed that the treatment by day interaction was significant ($F_{5, 45} = 11.48; p = .003$). The order by day had no effect on the overall data for questions 1 and 2.

Table 4

Treatment Effects for Song

| Effect | Num DF | Den DF | <i>F</i> | <i>p</i> |
|---------------|--------|--------|----------|----------|
| Treatment | 1 | 2 | 6.60 | 0.124 |
| Day | 5 | 7 | 2.52 | 0.130 |
| Treatment*Day | 5 | 7 | 11.48 | 0.003 |
| Order | 3 | 980 | 0.56 | 0.644 |

Means for combined questions 1 (I like this song) and 2 (I enjoyed rehearsing this song) had similar mean values for vocal modeling on day 1 ($M = 6.63, SD = 2.19$) through 4 ($M = 7.61, SD = 3.06$), which progressed to an expansive difference on day 5 ($M = 9.43, SD = 1.28$) and 6 ($M = 9.55, SD = 1.32$). However, means for the same question regarding speech directed modeling on day 1 ($M = 6.85, SD = 2.21$) through day 4 ($M = 7.82, SD = 3.01$) also increased by a point, there was a large decline rather than

gain on day 5 ($M = 5.54$, $SD = 2.66$) and 6 ($M = 5.62$, $SD = 2.74$). This illuminates the significant interaction of treatment by day. Effect size was calculated for combined questions one and two using Cohen's measure of effect size resulting in $d = 1.05$. These data resulted in the largest treatment differences on days 5 and 6, in favor of vocal modeling (see Table 5).

A paired t - test examined the difference in scores by day for questions 1 and 2 (see Table 5). For example, the p value for day 1 was 0.79, while for days 5 and 6 they were < 0.001 .

Table 5

Paired t-test Comparing Vocal Modeling and Speech Directed Modeling for Song

| Day | M Vocal | M Speech | Diff | t | p |
|-----|---------|----------|--------|--------|--------|
| 1 | 6.63 | 6.85 | - 0.22 | - 0.28 | 0.79 |
| 2 | 8.74 | 7.59 | 1.15 | 1.46 | 0.19 |
| 3 | 7.26 | 8.21 | - 0.95 | - 1.23 | 0.26 |
| 4 | 7.61 | 7.82 | - 0.21 | - 0.25 | 0.80 |
| 5 | 9.43 | 5.54 | 3.89 | 4.97 | 0.001* |
| 6 | 9.55 | 5.64 | 3.93 | 5.03 | 0.001* |

* = $p < .001$

For questions 3 (I enjoyed the conductor) and 4 (I enjoyed the teaching), a type 3 fixed effects test (see Table 6) also showed that the treatment by day interaction was

significant ($F, 5, 45 = 13.35; p = .0018$). Therefore, for questions 3 and 4, the order by day had an effect on the overall data.

Table 6

Treatment Effects for Conductor

| Effect | Num DF | Den DF | <i>F</i> | <i>p</i> |
|---------------|--------|--------|----------|----------|
| Treatment | 1 | 2 | 8.04 | 0.105 |
| Day | 5 | 7 | 2.80 | 0.106 |
| Treatment*Day | 5 | 7 | 13.35 | 0.001 |
| Order | 3 | 980 | 0.56 | 0.639 |

Combined questions 3 and 4 produced means that showed similar values for vocal modeling on day 1 ($M = 8.79, SD = 2.10$) through 4 ($M = 8.66, SD = 2.63$), which progressed to day 5 ($M = 9.78, SD = 2.08$) and 6 ($M = 9.72, SD = 1.90$). While means for the same questions regarding speech directed modeling on day 1 ($M = 8.42, SD = 2.02$) through 4 ($M = 8.89, SD = 2.18$) showed an increase of 0.47, there was a slight decline towards day 5 ($M = 8.35, SD = 2.11$) and 6 ($M = 8.26, SD = 2.07$). This data illuminates the significant interaction of treatment by day. Effect size was calculated for combined questions three and four using Cohen's measure of effect size resulting in $d = 1.04$. These data resulted in the largest differences on days 3 and 4, again, in favor of vocal modeling (see Table 7).

A paired t - test examined the difference in scores by day for questions 3 and 4 (see Table 7). For example, the p value for day 1 was 0.79 while for days 5 and 6 they were < 0.001 .

Table 7

Paired t-test Comparing Vocal Modeling and Speech Directed Modeling for Conductor

| Day | M Vocal | M Speech | Diff | t | p |
|-----|---------|----------|--------|--------|--------|
| 1 | 8.79 | 8.42 | 0.37 | 1.37 | 0.21 |
| 2 | 8.92 | 8.88 | 0.04 | 0.17 | 0.87 |
| 3 | 8.82 | 8.84 | - 0.02 | - 0.06 | 0.96 |
| 4 | 8.66 | 8.89 | - 0.23 | - 0.87 | 0.41 |
| 5 | 9.78 | 8.35 | 1.43 | 5.30 | 0.001* |
| 6 | 9.72 | 8.26 | 1.46 | 5.42 | 0.001* |

* = $p < .001$

Data for the final question 5 (Rate this overall rehearsal), also utilized a type 3 fixed effects test (see Table 8) that showed the treatment by day interaction was significant ($F_{5,45} = 9.32$; $p = .0053$). The order by day had no effect on the overall data for question 5.

Table 8

Treatment Effects for Overall Rehearsal

| Effect | Num DF | Den DF | <i>F</i> | <i>p</i> |
|---------------|--------|--------|----------|----------|
| Treatment | 1 | 2 | 6.85 | 0.120 |
| Day | 5 | 7 | 1.57 | 0.283 |
| Treatment*Day | 5 | 7 | 9.32 | 0.005 |
| Order | 3 | 980 | 0.31 | 0.821 |

Mean values for question 5 (Rate this overall rehearsal), had similar values for vocal modeling on day 1 ($M = 3.77$, $SD = 1.01$) through 4 ($M = 3.92$, $SD = 1.55$) with an increase of only 0.15, with a large progression to day 5 ($M = 4.69$, $SD = 1.09$) and 6 ($M = 4.90$, $SD = 0.92$). Means values for speech directed modeling on day 1 ($M = 3.61$, $SD = 1.16$) through 4 ($M = 4.15$, $SD = 1.46$) showed a slight increase of 0.54, with a decline towards day 5 ($M = 3.22$, $SD = 1.43$) and 6 ($M = 2.96$, $SD = 1.02$). This again illuminates the significant interaction of treatment by day. Effect size was calculated for question five using Cohen's measure of effect size resulting in $d = 1.12$. Consistent with questions 1 through 4, these data resulted in the largest differences on days 3 and 4 between treatments, in favor of vocal modeling (see Table 9).

A paired t - test examined the difference in scores by day for question 5 (see Table 9). For example, the p value for day 1 was 0.68 while for days 5 and 6 they were < 0.001 .

Table 9

Paired t-test Comparing Vocal Modeling and Speech Directed Modeling for Overall Rehearsal

| Day | M Vocal | M Speech | Diff | <i>t</i> | <i>p</i> |
|-----|---------|----------|--------|----------|----------|
| 1 | 3.37 | 3.61 | 0.16 | 0.43 | 0.68 |
| 2 | 4.44 | 3.99 | 0.45 | 1.23 | 0.26 |
| 3 | 3.92 | 4.24 | - 0.32 | - 0.88 | 0.41 |
| 4 | 3.92 | 4.15 | - 0.23 | - 0.64 | 0.54 |
| 5 | 4.67 | 3.22 | 1.45 | 4.03 | 0.005* |
| 6 | 4.90 | 2.96 | 1.94 | 5.35 | 0.001* |

* = $p < .001$

The final null hypothesis, 3a, There will be no significant difference between the effect of vocal and speech directed modeling on student attitude. There was a significant difference between vocal modeling, group musical achievement and student attitudes. Given these results, this null hypothesis was rejected due to a difference in student attitudes on days 5 and 6 based on treatment.

Results indicated that vocal modeling had a positive effect on group music achievement and student attitude. Individually, students made improvements as a group but individual scores were not statistically significant. Vocal modeling showed statistical growth in group music achievement with a wide gap between treatments. Also, student

attitude showed statistical significance and growth for treatment 1, vocal modeling.

Overall, vocal modeling produced positive results and improved music making.

CHAPTER V

DISCUSSION

The purpose of this study was to examine the effects of vocal modeling on individual and group musical growth, as well as student attitude. Results of the study suggest that the use of vocal modeling in the high school choral classroom can positively affect group musical growth and student attitude.

Previous research on the use of modeling in the classroom has produced mixed results. Hodges (1975) and Anderson (1981) found the use of a tape-recorded model on performance skills produced no significant difference between the students who used the tape-recorded models with instruction and those who received only classroom instruction. In contrast, Sang (1987) utilized a live model and found a significant relationship between the teachers' modeling abilities and student outcomes. Sang found modeling in the classroom to be the "strongest contributors to variance in instructional effectiveness on a consistent basis" (1982, p. 203). Similar to Sang (1987), this study sought to determine the effect of a live vocal model during classroom instruction on music achievement and attitude.

Forty-six students from an intact choral ensemble in Eugene, Oregon, participated in the project. All 46 students received vocal modeling (treatment 1) and speech directed modeling (treatment 2) over a six- week period utilizing sequential patterns of instruction for instructional organization and academic purposes. Four choral octavos were selected

for use in the study. Vocal modeling used: *O Sing to God* by Purcell, arr. Liebergen; and *Concord* by Britten. Speech directed modeling used: *Tomorrow Shall be My Dancing Day* by Gardner; and *Sure on this Shining Night* by Barber. Individual and group pre- and posttests were collected to determine individual and group musical progress. Students also completed an attitude survey following each choral selection each day, resulting in four surveys per day.

Individual Music Achievement

Previous research showed that the use of a model in the instrumental classroom positively affected individual music outcomes (Gillespie, 1991; Delzell, 1989; Sang 1987; Zurcher, 1972). In general, results of this study support the findings of the previous research.

Four performance areas were analyzed for vocal performance improvement: tone quality, intonation, rhythmic accuracy, and expression (see Appendix B). Hypothesis 1a, stating vocal modeling and speech directed modeling would improve students' individual music outcomes, is supported although there was a decrease in the four performance areas, the overall total showed an improvement. Overall there was growth between pre- and posttest scores ($p < .0001$), indicating improvement in the overall scores for individual music performances. These findings extend previous research conducted by Sang (1987) and show that individual music achievement is positively impacted by a combination of vocal modeling and speech directed modeling in the classroom, both of which students were exposed to in this study.

Group Music Achievement

Little research has examined the effect of vocal modeling on ensemble growth. Five performance areas were examined for group music growth: tone quality, intonation, rhythmic accuracy, expression, and balance and blend (see Appendix C). Combined these five performance aspects comprised the dependent variable for group music achievement. Performances of choral selections for both vocal and speech directed modeling yielded statistically significant differences between pre- and posttest scores ($p < .0001$ and $p = .0007$, respectively) These results are contrary to hypothesis 2c, There will be no significant difference between pre- and posttest performances of songs taught with vocal and speech directed modeling, although scores for treatment 1 (vocal modeling) were significantly better than treatment 2 (speech directed modeling). I expected that vocal modeling alone would produce statistically significant change between the pre- and posttest scores, and speech directed modeling would not. Instead both training methods produced statistically significant results between pre- and posttests. To date, it appears that no one has previously examined the differences of vocal modeling versus speech directed modeling on ensemble choral performance, and this might merit more inquiry.

Hypothesis 2b which stated that overall performance scores would improve through the use of vocal modeling in the classroom was supported. These findings are contrary to Keenan-Takagi (1995). The total score for group pre- and posttests ranged from 33 to 87, out of a possible 100 points. The pre- and posttest comparisons for treatment 1 (vocal) resulted in ($p = .02$) where treatment 2 (speech directed) produced a

mean of ($p = .66$). Vocal modeling showed a statistically significant difference in the mean overall scores.

Student Attitude

The effect of vocal modeling on student attitude has not been explored in depth in the current body of music education research. Hypothesis 3a stated that there was a consistent difference between the use of vocal modeling and student attitude. Utilizing an adaptation of the *Attitude Survey for Performance* (Madsen & Yarbrough, 1985) (see Appendix A), students responses to the surveys were statistically significant between treatment 1 (vocal) and treatment 2 (speech directed). The two treatments affected their overall opinions of the selected choral pieces. There was a statistically significant difference in scores for treatment 1 (vocal) and treatment 2 (speech directed) in favor of vocal modeling.

Discussion

The purpose of this study was to test the use of vocal modeling on individual and group music achievement as well as student attitude. It supported the idea that vocal modeling in the choral classroom is effective in achieving improved ensemble performance and student attitude. It is important to note that modeling was defined not only as vocal examples of appropriate pitches, but as overall musical demonstrations of vocal placement, vowel structure, and tone color. By utilizing a good singing model to demonstrate these performance concepts, students apparently were able to transfer the specific musical characteristics to their own individual and ensemble performances as rated by expert judges.

This study supports the idea that rote teaching, a term that often has negative connotations in music education, demonstrated by vocal modeling, is an efficient and effective teaching tool in the high school choral classroom. Rote teaching does not have to consist of lower level instruction, advanced concepts can be taught through the use of a vocal model. While rote teaching provides immediate results, the ability for students to transfer these ideas to future choral literature might provide long-term musical improvement.

Limitations. It is difficult to isolate individual teacher factors that may have affected the outcomes of this study. For example, this study featured only one person, the investigator, who was a female and younger in age than the regular male classroom teacher. The classroom teacher utilized a combination of vocal and speech directed modeling in daily classroom instruction outside of the study. Students were used to receiving MIDI recordings of their individual vocal parts for the pieces being rehearsed in class. During the study, students received classroom instruction with no access to MIDI recordings. While these factors may not have made a difference in the results, a replication study with multiple teachers may provide information to strengthen the implications and generalizability of this research.

Methodology investigating the use of vocal modeling in comparison to speech directed modeling has not been previously tested in any choir, so the use of only one choir restricts generalizing the results to various classrooms and ages. A replication could be carried out with multiple levels of choirs in one school setting or equivalent-level choirs across schools to enhance generalizability of the results.

The individual pre- and posttest recordings showed overall improvement over the 6-week study, but did not discriminate between treatments. Testing specific songs from each treatment would allow for an examination of individual improvement between treatments regarding the effect of vocal modeling on individuals in the choral classroom.

Students' attitude surveys and group performance recording results favoring treatment 2 (speech directed) may have shown little change after day 3 and 4 due to frustration and lack of progress. Perhaps the students were able to gain more immediate success on the two vocal modeling pieces, due to the novelty of a new instructor and teaching style.

The rating scale developed by Larkin (1985) focused the judges' attention on specific performance characteristics during the individual and group pre- and posttest recordings. While the developed scale provided useful categories, a different measure that gave specific numeric values for each subcategory might have aided the judges in understanding how individual performance aspects were linked to a score of 1 – 100 (see Appendix B and C). A replication study that utilized a rubric - style rating scale with the same performance categories may aid judges in the adjudication process. It would also be informative for future research to investigate progress on individual performance aspects (i.e. tone quality, intonation, rhythmic accuracy, and expression).

The use of iPod technology created clear digital recordings that were easily accessible and easily randomized. The Belkin two-way digital microphone produced clear individual and group recordings, but ran down the battery of the iPod quickly. The use of two iPods for individual recording purposes would allow the investigator to

complete more pre- and posttests in one recording session before needed to recharge the battery.

Little research has been conducted on the use of vocal modeling in the choral classroom. This study provides some insights and implications for choral music educators on the positive effects of vocal modeling. The use of vocal modeling as a teaching tool may provide educators with a positive resource of instruction leading to improved music outcomes.

Recommendations for Future Research

Several recommendations for future research can be made following this study. It is important that choral music educators strive to put forth a body of research that supports activities that are being carried out in classrooms daily. The method of instruction that choral directors' use directly impacts student outcomes, providing us as researchers a wide range of subjects to explore. While this study focused on one high school choral ensemble, it would be informative to replicate this study with multiple high school choral ensembles in order to examine consistency of results. An extension of this research could also examine the use of choral selections from other languages and the possible changes vocal modeling has on musical performance and diction.

The use of male and female vocal models on single sex high school and college ensembles might provide insight on student's ability to transfer musical ideas into their own ranges. This study would build upon the mixed results found in the elementary classroom setting stating that a male or female vocal model is more advantageous for pitch matching skills (Hendley & Persellin, 1994; Green, 1990; Hermanson, 1972).

An observational study that examines teachers at each level in the classroom would provide insight into current modeling practices and how we can aid practitioners in creating a more effective teaching process.

To promote the use of vocal modeling in the classroom, a study that investigates the use of vocal modeling at the elementary, middle, high school, and collegiate levels, would allow us to examine its relative effectiveness of choristers of different age groups and at different stages of choral and vocal development. Results from this study and new research may support the use of vocal modeling as a best practice in the choral classroom.

Findings from this study suggest that choral directors should employ vocal modeling in the choral classroom to aid in the reproduction of proper pitches as well as performance characteristics such as vowel placement, vowel color, and tone color. This study showed that daily teaching through the use of vocal modeling in the choral classroom positively affected student outcomes. Further comparisons of teaching methods such as vocal and speech directed modeling will allow researchers and teachers to support these ideas empirically.

As choral music educators, we should be continually searching for teaching tools that can be empirically supported and carried out in the classroom. Through continued research and investigation, choral directors will be able to utilize these teaching techniques with confidence, producing a rewarding musical experience.

APPENDIX A
ATTITUDE SURVEY

Name _____

Date _____

Circle the number that best expresses your agreement or disagreement with each of the statements below.

1. I like this song.

1 2 3 4 5

Strongly Disagree

Strongly agree

2. I enjoyed rehearsing this song.

1 2 3 4 5

Strongly Disagree

Strongly agree

3. I enjoyed the conductor.

1 2 3 4 5

Strongly Disagree

Strongly agree

4. I enjoyed the teaching.

1 2 3 4 5

Strongly Disagree

Strongly agree

5. Rate this rehearsal overall.

1 2 3 4 5

Strongly Disagree

Strongly agree

APPENDIX B

INDIVIDUAL PERFORMANCE RATING SCALE

Tone Quality

☐ Total No. of Checked Items

- ☐ Individual sings with resonant tone quality
- ☐ Individual sings consistently on the vowel
- ☐ Vowel quality consistently is correct
- ☐ Tone quality is not nasal or breathy

Intonation

☐ Total No. of Checked Items

- ☐ Pitches are performed accurately
- ☐ The individual performs with an accurate sense of tonality
- ☐ Intonation is not affected by inaccurate vowel sounds
- ☐ Breath management is adequate to maintain consistent intonation

Rhythmic Accuracy

☐ Total No. of Checked Items

- ☐ Entrances and releases are rhythmically accurate
- ☐ Individual performs accurately the melodic rhythm
- ☐ Individual performs with a correct sense of meter
- ☐ Individual performs with consistent tempo

Expression

☐ Total No. of Checked Items

- ☐ Text is clearly understood and performed with emotional understanding
- ☐ Dynamics are performed accurately and stylistically
- ☐ Individual performs with a sense of tempo rubato when appropriate
- ☐ Individual performs in a tempo that is technically and stylistically appropriate

Overall rating of individual singer (1 – 100)

APPENDIX C

CHORAL ENSEMBLE RATING SCALE

| | |
|---|---|
| Tone Quality | <input type="checkbox"/> Total No. of Checked Items |
| <input type="checkbox"/> Ensemble sings with resonant tone quality | |
| <input type="checkbox"/> Ensemble sings consistently on the vowel | |
| <input type="checkbox"/> Vowel quality consistently is correct | |
| <input type="checkbox"/> Tone quality is not nasal or breathy | |
| Intonation | <input type="checkbox"/> Total No. of Checked Items |
| <input type="checkbox"/> Pitches are performed accurately | |
| <input type="checkbox"/> The ensemble performs with an accurate sense of tonality | |
| <input type="checkbox"/> Intonation is not affected by vowel sounds that are not matched adequately | |
| <input type="checkbox"/> Breath management is adequate to maintain consistent intonation | |
| Rhythmic Accuracy | <input type="checkbox"/> Total No. of Checked Items |
| <input type="checkbox"/> Entrances and releases are executed together | |
| <input type="checkbox"/> Ensemble performs accurately the melodic rhythm | |
| <input type="checkbox"/> Ensemble performs with a correct sense of meter | |
| <input type="checkbox"/> Ensemble performs with consistent tempo | |
| Expression | <input type="checkbox"/> Total No. of Checked Items |
| <input type="checkbox"/> Text is clearly understood and performed with emotional understanding | |
| <input type="checkbox"/> Dynamics are performed accurately and stylistically | |
| <input type="checkbox"/> Ensemble performs with a sense of tempo rubato when appropriate | |
| <input type="checkbox"/> Ensemble performs in a tempo that is technically and stylistically appropriate | |
| Balance and Blend | <input type="checkbox"/> Total No. of Checked Items |
| <input type="checkbox"/> Melody is heard distinctly | |
| <input type="checkbox"/> Ensemble sings with homogeneity of tone quality within and among voice parts | |
| <input type="checkbox"/> The ensemble is not dominated by one or more voice parts | |
| <input type="checkbox"/> The ensemble is not dominated by one or more individual voices | |
| Overall rating of ensemble (1 – 100) | _____ |

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