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"Choir Might Actually Save Your Life": A Convergent Mixed Methods Study on Adolescents' Attitudes and Perceptions of Singing and Middle Level Vocal Music

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“CHOIR MIGHT ACTUALLY SAVE YOUR LIFE”: A CONVERGENT MIXED METHODS
STUDY ON ADOLESCENTS’ ATTITUDES AND PERCEPTIONS OF SINGING AND
MIDDLE LEVEL VOCAL MUSIC

by

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University of Nebraska – Lincoln, 2019

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As students progress through grade levels in school settings, the instructional frameworks through which music education might occur become more numerous and varied. Most students are provided general music courses at the elementary level; however, current approaches to middle level music instruction rely on the ensemble approach or the general music model (Cronenberg, 2017; Wayman 2005). To serve the needs of students who desire a breadth of music education, schools have explored composition and theory; music technology; and guitar, keyboard, harmonizing instruments courses (NAfME, 2014). Yet, the ensemble method of teaching music permeates schools throughout the United States (Heuser, 2011; Kelly 2016).

Currently, scheduling models for secondary music classes are inconsistent. Vocal music is offered both as a curricular class that meets during the school day and also as an extracurricular activity that meets outside of the school day. The purpose of this mixed methods study is to explore the attitudes and perceptions of eighth grade students toward singing and choir participation in relation to gender, voice mutation stage, and method of music instruction. Within this study, method of music instruction includes curricular vocal music instruction, curricular instrumental ensemble instruction, curricular music instruction and extra-curricular choral ensemble, and curricular instrumental and curricular vocal ensemble instruction.

The results of this mixed methods study suggest that the gap between instrumental and vocal music participation continues to widen at the middle level. Curricular instrumental ensembles significantly affect attitudes and perceptions of singing and vocal music in middle school. Gender has a significant effect on singing interest in male students ($M=2.19$, $SD=.54$) and the retention of male singers is still a priority in the middle school classroom. Classroom singing activities continue to have both positive and negative effects on singing experiences and students tend to feel more comfortable with out of school singing experiences. Yet, adolescents find something unique in choral singing in school that is not otherwise present in other environments.

Keywords: middle level, vocal music, curriculum, vocal maturation, attitudes, perceptions

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Dedication

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Chapter 1: Introduction

“A critical component of school knowledge is not only what is taught, both explicitly and implicitly, but also what is not taught.”

– *Growing Musicians* (Sweet, 2016)

Statement of the Problem

Between the ages of 10-15, young people experience “rapid and profound personal changes” (NMSA, 2010, p. 5). With these changes, students experience difficulties in singing on a technical and emotional level (Cooksey, 1977, 1992, 2000; Freer, 2006, 2009, 2010, 2012; Gackle, 2006, 2011; Kennedy, 2004; Killian, 1997, 1999; Leborgne, 2016; Sweet, 2010, 2015, 2016a, 2016b, 2018; Thurman & Klitzke, 1994; Welch, 2016). These difficulties can either be accompanied by positive or negative learning experiences. In order for a student to find value in learning, he or she must first be given the opportunity to experience learning on a continuous basis.

At the middle school level, general music is often considered an exploratory subject. More specifically, an exploratory course has several functions:

First, an exploratory program enables students to discover their particular abilities, talents, interests, values, and preferences. This self-knowledge helps students to prepare for adult life, not only in terms of vocation, but also as family members and citizens. Second, courses and activities are taught so as to reveal opportunities for making contributions to society. Finally, exploratory experiences acquaint students with enriching, healthy leisure-time pursuits, such as lifetime physical activities, involvement in the arts, and social service. Looked at in this way, opportunities exist for all areas of the middle level curriculum to be exploratory. (Braze, 2000, p. 3)

To highlight the last sentence of the quote above, opportunities do exist for all areas of the middle level curriculum to be exploratory, however, Poor (1999) found "...the exploratory concept placed music classes in a subordinate educational role" (p. 201). Moreover, it is more common for middle schools to have instrumental music courses that are not considered an exploratory course than vocal music courses. The core issue of the current problem with vocal music in middle level education is equity.

In arts education, music course offerings in the public school become more complex as grade levels increase. Most students are provided general music courses at the elementary level; however, current approaches to middle level music instruction may include a performance (ensemble) or non-performance (general music) approach (Cronenberg, 2017; Heuser, 2011; McAnally, 2016; Wayman 2005). Although both approaches are included in the newly revised 2014 National Music Standards, many middle school scheduling models emphasize choosing an instrument and participation in an ensemble. In this instance, instrument is defined as the human voice or a traditional band/orchestra instrument. To serve the needs of students who desire a breadth of music education, schools have explored composition and theory; music technology; and guitar, keyboard, harmonizing instruments courses (NAfME, 2014). Yet, the ensemble model of teaching music permeates schools throughout the United States (Heuser, 2011; Kelly 2016; West, 2018; Williams, 2011)

Currently, scheduling models are inconsistent. The absence of consistent vocal music courses at the middle level is problematic (Hamann, 2007). Adolescents can be overwhelmed by challenges of balance between academic courses, extracurricular activities, and paid work (Crosnoe & Kirkpatrick Johnson, 2011). To provide a variety of singing opportunities for middle level students, vocal music is often offered both as a class that meets during the school day and

as an extracurricular activity. Although a curricular subject and an extracurricular activity may possess some shared outcomes, a curricular subject will have observed and assessed learning objectives. Those unfamiliar with curricular offerings of vocal music and extracurricular vocal music activities tend to view these two groups as fulfilling the same purpose, therefore justifying the limited curricular exposure to vocal music in public schools.

The disparate nature of vocal music requirements affects adolescent attitudes and perceptions toward singing at the middle school level (Hamann, 2007; Wicks, 2015). Middle school students are at risk of developing poor vocal technique or dislike for singing due to limited classroom experience. To better understand how scheduling, attitudes, and perceptions have changed overtime, I will examine the evolution of the middle school model and explain the shift in the vocal music paradigm as a result of this model.

At the beginning of the 21st century, research-based models of middle school practice increased thus motivating many school districts to adopt the middle school model (Schaefer, Malu, & Yoon, 2016). Initially, the middle school model was conceived in 1963 by William M. Alexander who desired a change in the curriculum development for middle level learners. In the current middle school model, emphasis is placed on building 21st century skill and cross curricular units also known as interdisciplinary teams (Alexander, 1968; Alexander & McEwin, 1989; McEwin, Dickinson, & Jenkins, 1996; McEwin, Dickinson, & Jenkins, 2003; McEwin & Greene, 2010). The interdisciplinary concept gave birth to general music courses being labeled academic connection courses or exploratory courses. The original purpose of an exploratory course (Brazee, 2000) is contrary to some current definitions which include exploratory courses as being supplement classes to core academic classes such as math, science, and English. Although courses are labeled exploratory, it should not be assumed that they are not

academic subjects. In fact, “exploration is an attitude and approach, not a classification of content” (NMSA, 2010, p. 20). Yet, not all music courses are considered exploratory subjects. Instrumental music, for example, remains a subject that is a curricular elective. Harrison (2006) noticed that “...vocal ensembles and vocal training are considered second or third string to instrumental ensembles and training” (as cited by Wicks, 2015, p. 35). Although this perception may be due to investment in instruments and sequential approaches to instrumental training, scheduling choices for vocal and instrumental music courses can influence the attitudes of middle level students, especially attitudes regarding vocal music as a curricular subject.

Middle school student perspectives of vocal music can be summarized into four categories: vocational, academic, belongingness, and agency (Wayman, 2005). Students who have an effective vocal music teacher and/or a peer support system often describe positive singing experiences (Miller, 1993; Mizener, 1993; Poor, 1999; Wayman, 2004, 2005). However, student attitudes change with grade level.

Grade level is a predictor of attitudes toward vocal music. As grade level increases, student interest in singing decreases (Mizener, 1993; Philips & Aichison, 1998). This may also be due to stages of vocal maturation most commonly experienced in students between the ages 8-15 years of age (Ashley, 2006, 2010a, 2010b, 2011, 2013; Cooksey, 1977, 1992, 2000; Freer, 2006, 2007, 2009a, 2009b, 2009c, 2010, 2012, 2015; Gackle, 1991, 2000, 2006, 2011; Killian, 1997, 1999; Leborgne, 2016; Sweet, 2010, 2015, 2016a, 2016b, 2018). Although voice maturation may initially cause a negative response to vocal music, singing instruction often has a positive effect on students’ attitudes toward singing (Philips & Aichison, 1998).

To better understand what students’ elect to take in middle school, it is recommended that one gain student perspective on scheduling needs. Listening to the perceptions of adolescents

toward vocal music can encourage “choral music to become part of the “self” of adolescent boys and girls” (Freer, 2006, p.77). Freer (2010) describes the term “self” within the theory of possible selves (Markus & Nurius, 1986) which focuses on “...a person’s impressions of what they might become, what they would like to become, and what they fear becoming” (p. 17). In the middle school model, a student’s freedom of choice and exploration of various school subjects allows the adolescent to develop a positive sense of self (NMSA, 2010). A current practice that may have a negative effect on perceptions of self as a singer is enrolling students in elective vocal music courses without freedom of choice (Demorest, 2000; Sweet, 2010). This forced enrollment may manifest into students declaring they hate singing (Demorest, 2000; Cronenberg, 2017). Adversely, students who want to participate in the elective vocal music courses are often belittled for their efforts preventing interested students from actively participating during curricular offerings of vocal music. However, these same students will thrive in extracurricular choirs where they are praised by their peers (Sweet, 2010). Overall, the classroom environment is affected by student perceptions as much as the environment affects the student (Pintrich, Cross, Kozma, & McKeachie, 1986).

Gender issues in middle school vocal music often start with the question, why are choral ensembles dominated by female membership in secondary vocal classrooms? (Freer, 2010, 2009a, 2009b, 2009c, 2007, 2006; Harrison, 2009, 2004; Nannen, 2017; Sweet, 2010). When comparing attitudes toward singing of male band and choir students, male choral students indicated a stronger interest in singing, while male instrumental students indicated more confidence in their abilities as singers (Killian & Wayman, 2010). The voice changing experience has historically been identified as a challenge for singing during adolescence (Behnke & Brown, 1885; Cooksey, 1977, 1992, 2000; Gackle, 1991, 2000, 2006, 2011; Weiss, 1950).

However, researchers more frequently focus on the male changing voice and neglect to include female singers (Sweet, 2016a). Creating awareness in both male and female students during the laryngeal growth process has a positive effect on retention in vocal music courses (Cooksey, 1977; Gackle, 1985, 1991, 2006; Killian & Wayman, 2010; Williams et al., 1996). With this understanding, teachers can incorporate classroom strategies such as vocal mapping, a vocal range chart to track changes in the mutating voice, to display growth and development. However, strategies vary according to teacher perspective.

Teacher perspectives regarding curriculum and pedagogy in middle school music are varied. Some believe in a general music approach while others endorse the ensemble approach (Cronenberg, 2017; Heuser, 2011; McAnally, 2016; Wayman 2005). The ensemble approach focuses on the students' understanding of their own technical skill in the context of a performance group whereas the general music approach focuses on skill development in a wide variety of musical experiences (Abril, 2016; NAFME, 2014). Both approaches are represented in the revised 2014 standards provided by the National Association for Music Education (NAfME, 2014), but the standards are currently voluntary which gives teachers the power to determine the curricular music experience for their students. Teacher preference on classroom approaches has a significant effect on the attitudes of students (Droe, 2008). In fact, teachers can influence a student's decision on whether or not to enroll in a vocal music course (Freer, 2006; Miller, 1993).

Although the literature covers attitudes and singing skill in elementary and high school students, gender issues in middle school vocal music, and teacher perspective of the ensemble v. general music approach, few studies address middle level perspective of vocal music as a

curricular subject. There is need to extend the current body of research to include these new variables.

Limitations of Existing Research

There is a lack of studies which focus on singing through adolescence, especially through the middle school years (Loui, Demorest, Pfordresher, & Iyer, 2015). Although there is literature that covers attitudes and singing skill in elementary and secondary students (i.e. Meizner, 1993), vocal mutation issues in middle school vocal music (i.e. Cooksey, 2000; Gackle, 2006), voice quality of vocal and instrumental middle school students (i.e. Killian & Wayman, 2010), inadequacies in national standards regarding voice maturation of adolescents (i.e. Cooksey & Welch, 1998), and teacher perspective of the ensemble v. general music approach (i.e. Cronenberg 2017), few studies address voice maturation of middle school students while simultaneously inquiring about the students' attitudes and perceptions of vocal music as a curricular subject.

Additionally, there is a need for more research incorporating the student voice (Draves, Cruse, Mills, & Sweet, 2008; Kratus, 1992). Studies that incorporate the student voice provide opportunities for students to reflect on their learning experiences in the classroom and "...take more responsibility for their education because is it no longer something being done to them but rather something they do" (Cook-Sather, 2002, p. 10). There is a body of mixed methods research that utilizes the student voice with instrumental music participants (i.e., Kupers, van Dijk, van Geert, & McPherson, 2015; Riley, MacLeod, & Libera, 2016), but there is still a need to integrate both quantitative and qualitative data concerning vocal music participants (DeAmbrose & Howell Smith, 2018).

Methodological Approach

Currently, music education researchers prefer quantitative research design over qualitative and mixed methods approaches (Sims, Lordo, & Phelps, 2016; Yarbrough, 2002). Quantitative research can provide an objective measure of a research question as it “makes use of measurement, statistical principles, and models to verify the phenomenon being studied” (Phelps et al., 2005, p. 186). As experimental research is the most frequent form of gathering data in other core subjects, music education researchers have followed similar paths (Asmus & Radocy, 2006). In a recent review of submissions to JRME, quantitative, qualitative, mixed methods research designs were included in publication; however, a large percentage of these articles were quantitative (65.95%) (Sims et al., 2016). In another review of the *Journal of Research in Music Education* (JRME), from 1953-2002, only 16 out of 1,124 articles published in this fifty-year time span were qualitative (Yarbrough, 2002).

Qualitative research paradigms provide participants the ability to respond to the art itself in “deeper” ways (Bailey & Van Harken, 2014). Since qualitative research is fundamentally based on how we make sense of phenomena in our world (Denzin & Lincoln, 2011), using music as a means of communication encourages one to respond in ways that would normally be ineffable (Barone & Eisner, 2012; Merriam & Tisdell, 2016; Reimer, 2003). To this end, reflexivity is necessary to explain any past experience of the researcher that may affect the human as the instrument (Creswell & Poth, 2017; Lincoln & Guba, 2000; Merriam & Tisdell, 2016). Although the subjective view of the researcher may be beneficial, it can also be viewed as a weakness when assessing the credibility of the study.

Mixed methods research is a means to extract the assets from both qualitative and quantitative research to obtain a complete understanding of a research purpose (Creswell &

Plano Clark, 2018; Plano Clark & Ivankova, 2016). A study that addresses student perspective and how these perspectives may change due to voice maturation stage necessitates a mixed methods design to allow for a more complete analysis of findings (Creswell & Plano Clark, 2018).

Regardless of which design is applied to a study, “trustworthy research conclusions come only from those studies characterized by a sound design and a careful analysis of the collected data” (Huck, 2008, p. xviii). For the purposes of this study, quantitative information will be gathered to understand the perceptions of middle level students toward vocal music and qualitative information to understand how vocal maturation influences student perceptions of curricular vocal music offerings. Data will then be integrated to highlight the strengths from each research design.

Purpose of the Study

The purpose of this mixed methods study is to explore the attitudes and perceptions of eighth grade students toward singing and choir participation in relation to gender, voice mutation stage and method of music instruction. I conducted a convergent mixed methods study where quantitative and qualitative data were collected and analyzed concurrently and then merged within a fixed design to “generate inference grounded in both sets of results” (Plano Clark & Ivankova, 2016, p. 110). I collected quantitative and qualitative data in two separate phases (i.e. Fitzpatrick, 2011). In phase one, quantitative data were collected on singing interest and voice maturation stage on 8th grade students in a small Midwestern school district (n=597) in four groups (curricular vocal music instruction, curricular instrumental ensemble instruction, curricular music instruction and extracurricular choral ensemble, curricular instrumental and vocal instruction) to assess whether enrollment in curricular offerings of vocal music affect

student perceptions of singing. Phase two included qualitative data in the form of interviews of certain important subgroups: voice maturation stage (unchanged, changing, or changed) and exposure to curricular offerings of vocal music. Voice maturation stage was based on the Gackle (1991) and Cooksey (2000) stages. Curricular opportunities for vocal music were identified by the district supervisor of music. Students were identified as being enrolled in programs with consistent curricular offerings of vocal music. The combination of voice maturation stage and curricular vocal music offerings created a six-way matrix in which one student in each category (n=12) was chosen to participate in interviews. The focus of this study was aimed at hearing the voices of students in various levels of voice maturation and in various course scheduling school environments.

Research Questions

Research questions are the foundation of quality MMR studies (Tashakkori & Creswell, 2007). As such, this dissertation is focused on answering the following five research questions:

Quantitative Questions

1. Is there a difference in attitudes toward singing among eighth grade students in four treatment conditions (curricular vocal music instruction, curricular instrumental ensemble instruction, curricular music instruction and extracurricular choral ensemble, curricular instrumental and vocal instruction) as measured by an adapted Mizener (1993) singing interest survey?
2. Is there a difference in attitudes toward singing among eighth grade students based on gender as measured by an adapted Mizener (1993) singing interest survey?
3. Is there an interaction between instruction groups and gender among eighth grade students as measured by an adapted Mizener (1993) singing interest survey?

Qualitative Question

4. How do middle school students in various stages of vocal maturation perceive vocal music as a part of the eighth grade middle school curriculum?

Mixed Method Question

5. In what ways do the survey and interview data align with one another?

Definition of Terms

The key terms used for this study are as follows: Vocal Mutation, Curricular Vocal Music Instruction, General Music Instruction, Extra-curricular choir, Attitudes, and Adolescent Singing Perceptions.

Vocal Mutation: An “anatomic, biochemical, and physiological” (Cooksey, 2000, p. 718) pubertal process where “...the larynx descends and the pharynx widens, which results in changes in the resonances of the vocal tract” (Leborgne, 2016, p. 25). This change, in both male and female adolescent singers, can cause “increased huskiness/breathiness of tone, lowering of speaking voice, decreased and inconsistent range, noticeable changes in timbre, voice ‘breaks’/cracking, obvious transition notes or register breaks, and insecurity of pitch and difficulty initiating phonation” (Gackle, 2006, p. 30).

Adolescent singing perceptions: an adolescent’s way of processing data acquired through the senses (Piaget, 2006), where negative self-perceptions of singing ability can affect students’ choices in elective music classes (Demorest, et al., 2017).

Attitudes: a series of beliefs gained through experience that can be approached by a positive or negative affective response.

Curricular vocal music instruction: A basic understanding of singing including posture, breath management, onset of sound or phonation, resonant tone production, and correct

formation of vowels and consonants (Davids & LaTour, 2012; Hamann, 2007; Smith & Sataloff, 2013; Phillips, 2013) paired with the universal musical concepts of the revised National Standards (2014), including creating, performing and responding to vocal music, are the basis for curricular vocal music instruction. In curricular vocal music instruction, prior knowledge from other courses is essential to “...sing in multiple parts, develop sight-singing skills, and deal with...changing voices” (Hamann, 2007, p. 64).

General music: general music is defined as a course taught by a licensed music educator “...to develop musical knowledge, skills, and understandings through a wide array of experiences – from performance to deep listening to composition to historical study of music” (Abril, 2016, p. 7). In this definition, the purpose of general music is to educate and develop musical appreciation in the general population, prior knowledge or an existing skill set is not always required for a general music course (Abril, 2016).

Extra-curricular choir: “an...activity that students may elect to experience on a user-pays basis or through participating in choirs and school productions which rehearse outside of the normal school hours” (Wicks, 2015, p. 34).

The definition of these terms is complicated because of inconsistencies in curricular choral and general music offerings in American middle schools. Some middle schools require music while others do not. In fact, general music programs may or may not even exist in some districts (Hamann, 2007). In the McEwin and Greene (2010) national survey of highly successful middle level schools, 99% of schools offered band as an elective, 80% had choral offerings, and 29% had general music courses. These imbalances are the rationale for the aforementioned definitions.

Researcher Reflexivity

Reflexivity is an important part of the qualitative research process because it gives the reader the opportunity to acknowledge the subjectivity that may reside within the study. Because the researcher replaces the data collection instrument in the qualitative portion of this study, reflexivity is necessary to explain any past experience that may affect the “human as the instrument” (Lincoln & Guba, 1985, p. 193). Maxwell (2013) defines reflexivity as how “a particular researcher’s values and expectations influence the conduct and conclusions of the study” (p. 124). Lichtman (2013) adds that “every experience has an objective and a subjective component...” (p. 88) meaning the researcher’s past experience may provide a subjective skew to the way the study is performed. Although it will inform the final results and themes from the data analysis process, some subjectivity is necessary to completely understand a lived experience.

As a public school teacher, adjunct professor in higher education institutions, as well as an experienced professional musician, I am in a unique position to provide an “in-depth reflective process that will “...challenge assumptions, reveal theoretical orientations, uncover social and cultural biases, and call personal behaviors into question” (Creswell, 2016, p. 141). As a co-creator of a middle school vocal music curriculum in the participating Midwestern school district, I have very definite opinions regarding the necessity for a carefully sequenced vocal curriculum for eighth grade students to achieve levels of proficiency in their vocal development. Additionally, as a middle school vocal music teacher and participant observer, this proposed study is intrinsically valuable and, accordingly, these values must be presented alongside research findings to inform readers of my interest in the subject and what I have to gain from the results of the research (Creswell, 2013). This reflexive process will also aid in the

prevention of skewed valid and reliable observations, field notes and interview transcriptions. By admitting my bias and past experience, the reader may also be inspired to reflect on shared experiences, even if the study may not mirror the reader's current situation (Merriam & Tisdell, 2016). Stating past experience, reflecting on past experience during the data collection process, and reaffirming these reflections and experiences after themes appear from the analysis process will result in a valid and reliable qualitative process of this mixed methods study.

Theory

A safe singing environment provides adolescents with the opportunity to explore correct vocal technique free of teacher and peer judgements. Merely providing vocal music experiences for students will not always improve singing skill and positively affect attitude. In fact, it could produce an adverse effect:

An experience may be immediately enjoyable and yet promote the formation of a slack and careless attitude; this attitude then operates to modify the quality of subsequent experiences so as to prevent a person from getting out of them what they have to give (Dewey, 1938, p. 26).

One of the aspects that can affect a student's experience in vocal music during adolescence is rapid body changes. To create enduring understandings, music educators must first meet students "...with the energy that *they* bring to the classroom rather than your own teaching agenda" (Sweet, 2016b, p. 10). Acknowledging these rapid changes in singing, attitude, and overall skill development (i.e., voice cracks, emotional outbursts) will create a safe place to construct positive attitudes about both social and physical aspect of singing during adolescence (Freer, 2009b; Sweet, 2015, 2016a, 2016b, 2018).

To provide a safe environment in which students feel comfortable sharing their experiences and perceptions of vocal music, we must first consider the social learning aspects of vocal music. Bandura (1971) explains social learning theory is based on information gained from the observation of others, emphasizing the interaction of people and their environments. Although there are many concepts of social learning (i.e., vicarious, modeling), a concept that directly relates to social attitudes of adolescents is self-efficacy (Bandura, 1977). This concept involves the choice to perform a certain task at a specific level of effort and persistence. Following this logic, a student who continually experiences high self-efficacy will form generalizations of their musical ability and create positive enduring attitudes about singing (Demorest, Kelley, & Pfordresher, 2017; Freer, 2009b).

Kolb (1984) takes this theory one step further by stating that each experience will create its own abstract concepts and generalizations. Experiential Learning Theory is "...a holistic integrative perspective on learning that combines experience, perceptions, cognition, and behavior" (Kolb, 1984, p. 21) where focus is placed on the process of learning being continuously created and recreated. Therefore, the ease of transfer from the classroom to other classes or life experiences is an essential outcome of this theory. There are three models of the experiential learning process: Kurt Lewin's Model of Action Research and Laboratory Training, John Dewey's Model of Learning, and Jean Piaget's Model of Learning and Cognitive Development. According to Kolb (1984), these models of learning collectively emphasize that learning is a process not an outcome where continuity is grounded in experience. Also, recognizing the dialectic conflicts involved in creativity is a major process in human adaptation. Finally, learning is a transaction between a person and her environment and a process of creating knowledge.

Theoretical framework. According to Cady (1992), “theories are neither true nor false, they are merely a speculative design based on knowledge of a phenomenon” (p. 61). The analytic model displayed in Figure 1 represents the process in which method of music instruction effects student perceptions of vocal music as a curricular subject.

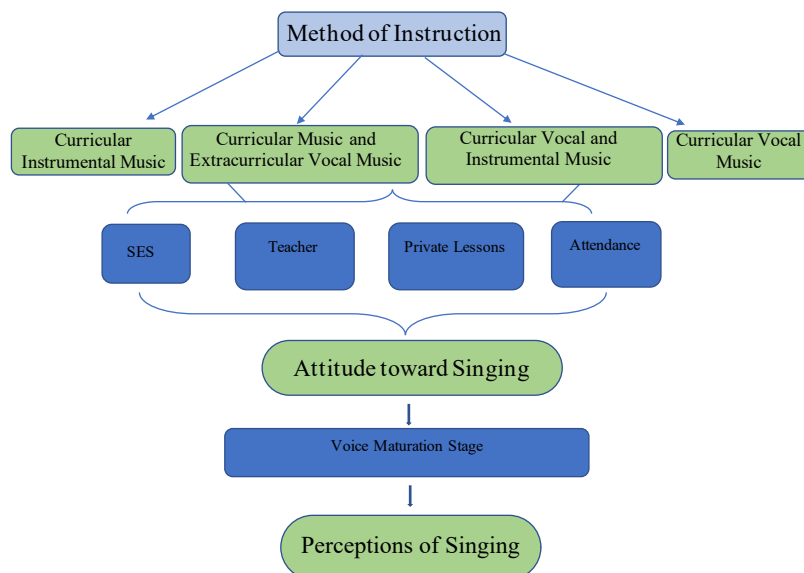


Figure 1. Theoretical Model. Methods of music instruction affects student perceptions of vocal music as a curricular subject.

Basic Assumptions

In studying eighth grade students’ attitudes and perceptions of vocal music, three basic assumptions were included because “...the power of an experiment is only as strong as the clarity of the basic assumptions which underlie it” Mitroff & Bonoma, 1978, p. 235).

1. This study assumes singing instruction is beneficial regardless of voice maturation stage (Cooksey, 2000; Edwin, 2014; Gackle, 2006; Skelton, 2007).
2. It is assumed that eighth grade students physically experience voice maturation in stages as outlined by John Cooksey and Lynn Gackle.

3. It is assumed that students' encounters with music outside of school via family and /or community music making, individual listening, and informal music making are distributed among the participants in the school music groups in such a way as to not bias the sample in an unrepresentative way.

Delimitations

The following factors will be eliminated in a delimitation boundary in efforts to only examine students that receive equal amounts of the treatment. Although there are other factors in addition to music instruction that can influence attitudes and perceptions of vocal music education in students, this study only addresses participants who receive music instruction in one course during the school day or one extracurricular vocal ensemble. This study is delimited to students who do not take private lessons in order to explore if there are any significant effects between the four treatment groups. Additionally, this study will also exclude those students who do not meet the attendance expectation for the school district and the attendance expectation of the ensemble's director to ensure that they are exposed to the treatment over a reasonable amount of time.

Methodology

Description of the population. The participants in this study were a sample of 8th grade students from middle schools in a moderately sized Midwestern city enrolled in a curricular vocal or instrumental music course or a member of an extracurricular choral ensemble. The school district services approximately 3,142 eighth grade students where 32.5% are considered minority and 44.4% participate in the free or reduced lunch program. The average daily attendance rate is 95%. Overall, the school district provides special education services for 15.3%

of its students. The district offers a breakfast program as well as many after school clubs and activities.

Personnel and facilities. The school provides a variety of instrumental and vocal musical experiences for the students. In general, curricular instrumental courses provide pull-out lessons during sixth grade and full ensemble courses in seventh and eighth grade. Vocal music courses occur in sixth grade every other day for one semester but are not required after sixth grade if a student is involved in an instrumental music course. A student in seventh grade, not involved in an instrumental music ensemble, is required to take one quarter of vocal music. The eighth-grade choral ensemble is an elective and meets for one semester. Most schools in the district meet or exceed the basic requirements for a music program as outlined by the Opportunity to Learn Standards (NAfME, 2014). Although these are general personnel and facility descriptions, some schools provide other options for students wanting both a vocal and instrumental curricular music education, but it is not required by the district.

Materials and equipment. The quantitative instrument (see Appendix H) that was used for this study is my adaptation of the Mizener (1993) Singing Interest and Choir Participation Questionnaire. This questionnaire is designed to measure the relationship between attitudes and other variables. These variables include singing interest, choir participation, classroom singing activities, out-of-school singing experiences, and self-perceptions of singing skill. I adapted this questionnaire to reflect current musical practices of the time (i.e. accompaniment on records changed to accompaniment on CD tracks) and to be relevant to middle school music students (i.e. musical activities common for elementary students changed to reflect those common to middle school students).

Procedures. The select school district was secured as the research site and Institutional Review Board (IRB) approval was granted prior to data collection. I prepared cover letters and notification forms and provided all the materials to the school. The school office was responsible for emailing the cover letters and notification forms to parents/guardians of all eighth-grade students participating in curricular and extra-curricular offerings of performance ensembles. A notification letter was sent home to all eighth-grade parent/guardians in order to achieve the necessary number of participants. The notification form indicated that the form needed to be returned to the school within three days of receipt only if they did not wish their child/legal ward to participate in the study.

Students who did not have a notification form returned at the time of the survey distribution were invited to participate in the study. Students were asked to complete the questionnaire and were assured that their results would remain confidential. In the concluding remarks of the survey, students were invited to volunteer to be considered for the convergent qualitative study. Due to the convergent design, the quantitative data analysis did not inform the qualitative portion of the study ensuring confidentiality of quantitative data. As previously mentioned, students were identified by their school assigned student numbers and only the school office had access to the link between identification numbers and names. This also provided anonymity of quantitative data.

The qualitative portion of the study took place in a secure, private location in each school and all interviews were audio recorded. Qualitative participants were thanked for their participation. Following a funding application put forth by the research to the Hixson-Lied Advisory Board, the Glenn Korff School of Music at the University of Nebraska-Lincoln provided a \$1,500.00 grant to offset some of the costs of this research project. The money

granted was used to purchase envelopes, stamps, copies, and transcriptions. All interviews were transcribed, coded, and analyzed. Quantitative data and the qualitative data are presented separately and then purposefully integrated together.

The IRB approval letter for this project can be found in Appendix A. Additionally, student and parent cover letters, along with the consent and assent forms, can be found in Appendices B-F.

Design of the study. In order to understand student perceptions of vocal music at the middle level, I conducted a convergent mixed methods study where data were collected within a fixed design to “generate inference grounded in both sets of results” (Plano Clark & Ivankova, 2016, p. 110). Although this study utilized a convergent design, data were collected in two phases. Quantitative data were collected followed by the qualitative data but were analyzed simultaneously and then intentionally merged, thus offsetting the strengths and weaknesses of a single design.

Quantitative Research Questions

1. Is there a difference in attitudes toward singing among eighth grade students in four treatment conditions (curricular vocal music instruction, curricular instrumental ensemble instruction, curricular music instruction and extracurricular choral ensemble, curricular instrumental and vocal instruction) as measured by an adapted Mizener (1993) singing interest survey?
2. Is there a difference in attitudes toward singing among eighth grade students based on gender as measured by an adapted Mizener (1993) singing interest survey?
3. Is there an interaction between instruction groups and gender among eighth grade students as measured by an adapted Mizener (1993) singing interest survey?

Statistical analyses were performed using a two-way ANOVA for non-repeated measures using instruction groups and gender as the main effects.

Qualitative Research Questions and Data Analysis

Central question: How do middle school students in various stages of vocal maturation perceive vocal music as a part of the 8th grade middle school curriculum?

Subquestion 1: What motivates students to participate in either vocal, instrumental, or both during the school day?

Subquestion 2: How do friends and family influence middle level student perspective of vocal music?

Subquestion 3: How do administrators and teachers influence middle level student perspective of vocal music?

Subquestion 4: How do student attitudes toward vocal music compare to student attitudes toward other subjects?

Subquestion 5: How are students educated about their changing voices in the vocal music classroom?

Subquestion 6: How do students learn about changing voices in other classrooms outside of vocal music?

Sub question 7: How do middle level students use information from other resources (i.e., peers, family, social media) to form their perceptions of the changing voice?

All questions in the qualitative portion of the study were answered through a group interview (n=7) students.

Significance of the Study

Curricular expectations at the middle level are constantly being revised and improved. Middle level educators and administration are constantly having to be creative with scheduling and course offerings to provide a well-rounded education for all students. Furthermore, the emphasis on student centered learning experiences has increased the student voice in public education. However, it is unclear how adolescents may feel about vocal music within the middle level curriculum. The absence of a deeper understanding may inadvertently cause negative singing experiences for students. This study provides insight on how students experience singing both in and out of school. Based on prior research, exploring both attitudes and perceptions of middle level students' singing experiences can positively affect the way our profession provides vocal music courses for adolescents.

Integrating both quantitative and qualitative strands will provide an empirical foundation from which to answer the following mixed method question: Do the attitudes and perceptions of eighth grade music students about vocal music as a part of eighth grade middle school curriculum vary based on vocal maturation stage, exposure to curricular offerings of vocal music, and/or singing interest survey scores? The implications of this study include opportunities for deeper understandings in creating positive enduring attitudes in adolescents about vocal music. Educators, communities, and administrators all have the opportunity to improve student interest in singing by gaining a well-rounded picture of how singing is viewed at this point in development. Educators and administrators alike can learn how their daily interactions with both students and communities as well as scheduling choices within the school day can inform enduring attitudes and understandings about vocal music

Chapter 2: Review of the Literature

“...music must be arranged to attract, hold and educate every boy and girl, regardless of whether they can sing or not”

- What We Hear in Music (Clark, 1916, p. 600)

In this chapter, the evolution of the middle school model and the changing definition of vocal music through the lens of public policies implemented over recent decades will be discussed. Additionally, the adolescent changing voice and its influence on adolescents' perceptions and attitudes toward singing will be drawn from the related literature. To address the gaps in the literature, measurement tools will be presented that may answer predetermined research questions outlined at the end of this chapter.

The Middle School Model

The overall effectiveness of the middle school model has been studied over several decades (Alexander, 1968; Alexander & McEwin, 1989; McEwin, Dickinson, & Jenkins, 1996; McEwin, Dickinson, & Jenkins, 2003; McEwin & Greene, 2010). This model was developed to try to understand the education needs of adolescents through a variety of process-oriented and student-centered learning experiences. This model is best described in the publication *This We Believe* (NMSA, 2010). First published in 1982, this position paper is the most widely used middle level education document to provide researched-based information on adolescent growth and development, successful practices in curriculum, and overall organization of the middle school model (NMSA, 2010). Ever changing public policy on education at the middle level has caused the model to be both positively and negatively adapted over time.

The Evolution of the Middle School Model

This model was most notably founded by William Alexander, but also developed by Donald Eichhorn, John Lounsbury, Conrad Toepfer, and Gordan Vars (David, 1998; Smith &

McEwin, 2011). Initially, the middle school movement was started to focus on the individual student, as opposed to “teaching to the middle” or relying on means to measure achievement (Alexander & Williams, 1965). To promote this new student-centered model of education, the Middle West Middle School Association was formed in 1970. This organization is currently referred to as the Association for Middle Level Education (formerly National Middle School Association) (NMSA, 2010). Although this association provided continuous and persistent advocacy, it was not until 1980 that major advancements were made to replace the junior high system (Schaefer et al., 2016). At the beginning of this decade, over 4,000 schools had adopted the middle school model compared to 1,000 in 1968 (Lounsbury, 1980). Two of the most notable publications that sparked public interest in the middle school model were *Growing Up Forgotten* (1977) and *Turning Points: Preparing American Young for the 21st Century* (1989) (Cronenberg, 2016). Although popularity of the model grew, the focus shifted with *A Nation at Risk* of 1983 (Nierman, 2018, forthcoming; Richerme, 2012; Schaefer, Malu, & Yoon, 2016).

Middle level education was not specifically mentioned in *A Nation at Risk* (Lounsbury, 1989). In response to this absence, middle level educators continued to advocate for curriculum development and middle level public policy (Arth, 1985; Johnston, 1988; Schaefer, et al., 2016; Thompson & Homestead, 2004). Although the middle school model was being implemented by a larger number of schools, many were still trying to fit into the traditional junior high curriculum. Trying to find the “best fit” for each school caused turmoil in the nineties. Some attribute this tumultuous stage to the lack of a specialized teaching certification for middle level learners (Schaefer et al., 2016; Thompson & Homestead, 2004). Beane, a prominent middle school advocate, contributed many publications during this decade that encouraged curriculum reform. More specifically, he promoted an integrated curriculum where “...young people confront

personally meaningful questions and engage in experiences related to those questions—experiences they can integrate into their own system of meanings” (Beane, 1991, p. 9). He believed in a truly integrated curriculum in which students studied similar topics in all classes. To accomplish this goal, he emphasized the importance of educators meeting in interdisciplinary teams to create a cohesive curriculum across course offerings. His work was met with criticism by those who believed that interdisciplinary teams were helpful but not fully applicable to the “real world”: “...in the real world of communities, schools and teachers...there are many practical realities that make the theory (Integrated Curriculum) difficult to put into practice.” (Gatewood, 1998, pp. 38). Indecisiveness from education leaders concerning curricular methodology was a contributor to a research-based focus for the middle school model in the millennium (Schaefer et al., 2016). These student-centered inquiries examined middle schools as a whole (i.e. high achieving), as well as, specific populations of students (i.e. students with exceptionalities). Such inquiries were interrupted by the common core and high stakes testing affiliated with *No Child Left Behind* (NCLB) of 2001.

Similarly to *A Nation at Risk*, NCLB (P.L. 107-110) promoted common core curriculum and high stakes testing (Elpus, 2013; Gerrity, 2009b, Richerme, 2012). With an increase in research based middle school practices, it was found that students exposed to rigorous high stakes assessments did not achieve as well as students exposed to a traditional curriculum (Faulkner & Cook, 2006; Schaefer et al., 2016; Turner, 2009). Overtime, NCLB “became increasingly unworkable for schools and educators” (U.S. Department of Education, 2015a, para 2). This prompted Common Core Standards to be removed from state education requirements and replaced with the curricular ideals from the partnership for 21st century learning (P21, 2009). This was followed by *Every Student Succeeds Act* (P.L. 114-95) of 2015 which promoted a well-

rounded education for all students consequently supporting the original purpose for the middle school model.

The *Choices in Education Act* (H.R. 610) of 2017 was introduced to repeal ESSA and promote school choice. More specifically, states must make it lawful for parents of *an eligible child* to enroll in any public or private elementary or secondary school (*Choices in Education Act*, 2017). The term *eligible child* refers to those students who meet certain requirements set by both private and charter schools. Although it is impossible to predict if the *Choices in Education Act* will positively or negatively affect the middle school model, a basic assumption for a middle school is an environment that is "...inviting, safe, inclusive, and supportive of *all*" (NMSA, 2010, p. 1). The word *all* does not include eligibility restrictions. Students unable to meet admission requirements (i.e. Wells, Vasudeva, Holme, & Cooper, 2000) or requiring special services (i.e. Rhim, Ahearn, & Lange, 2007; Rhim & McLaughlin, 2001) are not often well served by school choice. Therefore, the middle school model, which promotes inclusivity, may be negatively affected by this policy reform.

Similarly to the AMLE tenets, National Association for Music Education (NAfME) has and continues to promote music making for *all* students. With a renewed commitment to advocacy, music educators at the Tanglewood Symposium (1967) stated that music should be a part of the core curriculum in schools (Mark & Gary, 2007; Richerme, 2012). Both *A Nation at Risk* of 1983 and *No Child Left Behind* of 2001 (P.L. 107-110) identify core subjects as a major focus in student achievement although music is not included as one of those core subjects (Gerrity, 2009b, Nierman, 2018 forthcoming, Richerme, 2012). The original 1994 music standards were embraced by the profession during *Goals 2000: Educate America Act* of 1994 (P.L. 103-227) (Lehman, 1993; Hoffa, 1994). This education policy highlighted the arts as a

subject in which students should be able to demonstrate knowledge and skill (Byo, 1999; Elpus, 2013; Gerrity, 2009a). These nine standards were revised ten years later during the movement for national core arts standards.

The 2014 National Music Standards

The 2014 National Music Standards encourage the process of creating, performing, and responding to music over product-based standards (Shuler et al., 2014). These standards were written by a vast group of contributors focusing on the process of achieving musical literacy through the context of artistic processes, enduring understandings, and essential questions (NAfME, 2014). To promote achievement, the revised standards incorporate the backward by design framework of Grant Wiggins and Jay McTighe (2005), as well as the framework of Partnership for 21st Century Learning (2009). Wiggins and McTighe encourage educators to start with a desired outcome and then create a curricular framework to support the outcome. The P21 framework is designed to support a desired outcome in four parts or the 4C's: Creativity, Communication, Collaboration, and Critical Thinking. In other words, to achieve literacy within the P21 framework one must create or generate ideas within an academic subject; perform through communication to verbally demonstrate understanding; and respond with collaboration and critical thinking (P21, 2009). For example, in language arts a student must demonstrate his or her ability to create an original story, present the story in a classroom setting, and critically think or reflect on his or her rationale for creating the story. This process defines literacy within this component of language arts. NAfME is not the only organization invested in 21st century learning, this framework is valued by ESSA as well as AMLE.

The four C's, as they relate to the revised national standards, correlate well to the artistic processes: create, perform, and respond. Originally used in the 1996 National Assessment of

Educational Progress (NAEP), these processes of the standards are structured much like standards for language arts, reading and math, making them easily accessible for administrators and other stakeholders already invested in such a format. These revised standards provide a comprehensive and sequential music education, where students develop enduring understandings of music through continuous experiences with the artistic processes of creating, performing, and responding to music (Nierman, 2016; Shuler et al., 2014).

As in any academic subject, these artistic processes are best served when students are continuously exposed through curricular offerings. In other words, “teachers who ground instruction in these music-centered activities are certain to create successful and engaging curricula that adolescent learners enjoy” (Gerrity, 2009, p. 44).

Vocal Music within the Middle School Model

Middle school is a time for students to discover their musical interests. With equity in exposure to both instrumental and vocal music curricula “...we are in prime position to provide safe places and experiences for middle school students to learn about music *and* themselves, free from judgement” (Sweet, 2016b, p. 2). Although vocal music education, modeled after the singing schools, was the first medium of music education established by Lowell Mason in 1838, a shift of course offerings in music has tended to favor instrumental music over vocal music. In the McEwin and Greene (2010) national survey of highly successful middle level schools, 99% of schools offered band as an elective but only 80% had choral offerings.

The controversy surrounding the effectiveness of vocal music versus instrumental music was present even before the beginning of the middle school movement. A study conducted by Richard Colwell (1963) examined grades given by both vocal and instrumental teachers to find if one subject was more or less rigorous. It was found that grades given by vocal music teachers

were just as reliable as those given in instrumental music: "...music grades given by vocal teachers are valid grades and in nearly every case reflect the relative level of achievement..." (Colwell, 1963, p. 130). When comparing achievement of students in vocal, orchestral, and instrumental settings, Nierman (1985) found that there was not one type of music instruction "...superior to another in developing music listening skills and/or verbal-descriptive skills" (p. 131), which was in contrast to several previous studies of the time (e.g, Deihl, 1963; Fluke, 1963; Schimke, 1966). Despite these findings, a systemic decline of middle level vocal music offerings and skill development began when schools went from the junior high to the middle school model.

Vocal skill development. In regards to skill development, middle school vocal music teachers are used to multi-level teaching. In this sense, multi-level teaching is defined as "... an approach to planning that assumes the individualization, flexibility and inclusion of all students regardless of their personal level of skills" (Collicott, 1991, p. 193). Vocal technique and music reading skills can be developed at any point "regardless of their personal level of skills", yet skill is required to foster growth. Freer (2010) found that adolescents attribute success to ability rather than effort and urges music educators to "...shift their pedagogical approach to reflect the view that singing involves a specific skill set that can be developed across time" (p. 24). Allowing a student to develop skills in vocal music can contribute to positive understandings, however, limited access to students at the middle level may prevent or present barriers to adolescent singing development.

Poor (1999) found that teachers stated "enrollment in music had increased but musical skills had diminished" when schools replaced the junior high model of education to the middle school model (p. 7). He also found that there were fewer music requirements moving from

elementary school to the middle school model and loss of musical maturity in students moving from middle school into high school (Poor, 1999). This may be due to “...limiting student access to, and opportunities for, music instruction...” (Poor, 1999, p. 201).

Non-instrumentally trained 8th grade vocal music students were not given “...the tools they needed in order to become independent musicians at even the basic level...” due to their inability to sight read novice melodies in the Vocal Sight Reading Inventory (VSRI) (Bolton, 2009). Yet, the vocal music teachers in this particular study did not see students on a consistent basis (Bolton, 2009). Hamann (2007) found the absence of uniformity in middle level choir programs problematic because of inequities in access to quality programs and the absence of building toward a common goal. Although her argument for uniformity can in part be answered by the revised National Music Standards (2015) as well as the Opportunity to Learn Standards (2015), standards that are focused on the needs of middle level learners are found only in the 8th grade general music standards.

General Music. The balance between “...continuation of the classroom music of the elementary school and the performance traditions that were burgeoning at the high school level” is not a new concept (Hamann, 2010, p. 70). This conundrum was also present in the junior high model in the early twentieth century. Much like the middle school model, there was not a “one size fits all” junior high option (Lucas Hamann, 2010). Recently, much has been published on middle school general music (i.e., Cronenberg, 2017; McAnally, 2016; Sweet, 2016b; Wayman, 2005). The general music classroom may have aspects of vocal music within the curriculum, but it is designed “...to develop musical knowledge, skills, and understandings through a wide array of experiences – from performance to deep listening to composition to historical study of music”

(Abril, 2016, p. 7). Taking this definition into account, all of the aforementioned publications have one central idea, how to successfully provide a meaningful music education to adolescents.

Guiding adolescent music students to their own meaning in music in a middle school general music classroom is the focus of Wayman's (2005) dissertation. She found that musical experiences of adolescents were assimilated into four categories: vocational (i.e, career motivation), academic (i.e, reading music), belongingness (i.e, social interactions), and agency (i.e, self-esteem) (Wayman, 2005). Although a connection to the position paper *This We Believe* was not referenced in her dissertation, these categories also align with the developmentally responsive approach to adolescent education (NMSA, 2010). This approach is also taken by Sweet (2016b) in her publication, *Growing Musicians*. In her book, Sweet (2016b) explores the idea of the music classroom being a safe place where "...adolescent music students can escape the scrutiny (real or imagined) of others" (p. 77). Within this safe space, students are free to share ideas, be open-minded, actively participate in discussions, and be respectful towards others (Sweet, 2016b). She also details the role of the music educator in creating a safe environment for singing exploration. My personal favorite being the story about "SPAM: Singing Produces Awesome Miracles," in which a middle school choir teacher explores a connection between the music classroom and popular culture to engage students in a positive singing experience (Sweet, 2016b, p. 118)

McAnally (2016) provides structured activities designed around the artistic processes that can empower adolescents at any level to create, perform, and respond to music. These specific activities are also accompanied by example scripts of how to use student centered language to introduce new concepts. The publication *This we believe*, previously mentioned as the most cited middle school document ever published, is included in Cronenberg's (2017) dissertation focusing

on the practices of middle school general music teachers. She identified three tensions within the middle school general music classroom: 1) Curriculum; 2) Needs of Adolescents; 3) Classroom as a ‘contested space’ or ‘home place’. She concluded local circumstances influence curricular choices of middle level music teachers, yet a lack of communication between other disciplines in the school not only disregards the interdisciplinary philosophy of the middle school model, but also fuels the contested space perceptions of the classroom.

Although many of these resources can also be applied to a primarily vocal music experience, it is important to note that standards specifically for middle school general music courses may not address the adolescent changing voice in both a biological and social context. This creates pedagogical concerns when training a young voice.

Adolescent Changing Voice

Voice change is quite simply “...an anatomical readjustment that occurs in both female and male adolescents” (Sweet, 2018, p. 134). The adolescent changing voice was most notably introduced in written form by *The Child’s Voice: Its Treatment with Regard to After Development* (Behnke & Browne, 1885). This publication explored the voice changing experiences of 810 participants. Many of the transcriptions are similar to modern experiences with voice change. After over 130 years of new literature on the changing voice, researchers are still questioning the social, biological and pedagogical implications of the adolescent changing voice. The following will highlight literature outlining these concerns.

Biological implications

Physiological changes occurring during adolescents can affect a singing experience through laryngeal growth, ribcage increase, lengthening of the vocal folds, changes in vocal tract length, development in laryngeal muscles, and growth of laryngeal cartilages (Leborgne, 2016).

Although there is no “anatomical or physiological difference” in the larynges of prepubescent boys and girls (Behnke & Browne, 1885, pp. 2-3), the growth of the larynx during vocal maturation occurs differently for both genders. For male students, the larynx grows anterior to posterior (front to back) while the female larynx increases in length and width resulting in a rounded shape (Weiss, 1950). Both male and female singers can experience symptoms of insecurity of pitch, register breaks, increased huskiness in the voice, decreased and inconsistent range capabilities, voice cracking, hoarseness, and phonation difficulties (Harrison, 1978; May & Williams, 1989).

Male Changing Voice. Regarding literature on the male changing voice, the most frequently cited is Cooksey’s (1977, 1992, 2000) voice mutation stages. He explains voice change in five stages (early mutation, high mutation, mutation climax, postmutation stabilization, postmutation development). These stages were first conceived in 1977, refined in 1992, and studied to a greater extent in 2000. These stages are accompanied by an approximate age, however, age is not a significant indicator of voice mutation. Other studies related to Cooksey’s work investigate the use of falsetto during voice mutation in choir and band students (Killian and Wayman, 2010), earlier voice change than in previous research (Killian, 1999), and a comparison of boys and men when describing the voice change experience.

Killian (1997) examined the lived experiences of 141 men and boys concerning the voice changing process. An item analysis was conducted based on the following factors: memory, who noticed the change, how the change affected singing, how the change affected speaking, any pain or illness mentioned, if the voice was better after the change, and the overall effect of the experience. Although the participants made more negative than positive statements, collectively the process was considered a positive experience. Surprisingly, only 23% (n=32) participants had

only a vague memory of the voice changing experience and a few boys (n=3) and some men (n=14) had no memory of the experience.

There has been debate concerning approximate age of the beginning of the voice mutation process. Cooksey (2000) reports that in 1939 the mean age of vocal growth was 14.25 years, 1972 it was 13.8 years, and 1978 it was 13.5 years. However, studies have shown that voice change can begin as early as fifth grade (ages 10-11) (Killian, 1999). Age is not an appropriate indicator of voice mutation stages, singing pitch range and voice timbre are the most accurate indicators (Cooksey, 2000; Gackle, 2011; Killian, 1999; Killian & Wayman, 2010).

Killian and Wayman (2010) examined the use of falsetto during voice change by asking choir (n=32) and band students (n=72) to speak in voices mimicking Lord Farquaad and Gingie from the popular animated movie *Shrek*. Additionally, participants were asked to sustain the highest note they could sing as well as the lowest note. All participants were grouped into the Cooksey (2000) voice mutation stages. Along with demographics, information was collected on a Likert-type scale concerning how much participants liked to sing and how well they sang. Although falsetto identification “appeared elusive” (p. 5) in this study, it confirmed earlier research that voice change is beginning at earlier ages than previous research (i.e., Killian, 1999) and can be divided into voice mutation stages (i.e., Cooksey, 2000). This study also found that choir students could sing higher on average than band students, but choir students were more critical of their ability to sing well. Other research interests including the biological implications of the male voice maturation process include pitch matching (Demorest, 2001; Demorest & Clements, 2007), the emergence of the falsetto (Rutkowski, 1984; Wayman, 2009), possible effect of ethnicity on the age of onset (Fisher, 2010), and promoting vocal health (i.e., Gebhardt, 2016).

Female Changing Voice. Significant changes also occur in adolescent females (Gackle, 1985, 1991, 2006, 2011; Siple, 1994; Sweet, 2015, 2016a, 2016b). Although some literature covers female voice change before the mid 1980s (Alderson, 1979; Cooper & Kuersteiner, 1965; Harrison, 1978), it was Lynne Gackle who brought the attention of the music education community to the importance of the continued study of female voice change. Gackle (1985, 1991) quotes Father William J. Finn from the *Art of the Choral Conductor* (1939) describing the voice change process of boys as "...major modifications at adolescence ...", however, he further describes the female voice change as "...escaping the anatomical readjustments of her brother..." (Finn, 1939 as cited by Gackle, 1985, p. 15). With the myriad of resources from Gackle (1985, 1991, 2006, 2011), these original writings by Father Finn cannot be further from the truth.

Gackle (1985) introduces the stages of the female changing voice as stage one: a "pure flute-like quality"; stage two: level one – first signs of maturation, level two – a critical time where "...voices may change in a short period of time"; stage three: level one – "...ease of singing appears...", level two – "tone becomes fuller and richer...vibrato, though uncontrolled, begins to enter the voice" (pp. 16-17). A literature review of the female changing voice prompts Gackle (1991) to recommend using equal-voiced music where female singers switch parts regularly, eliminate unnecessary voice categorization because there are no real sopranos or altos at this age, and championing the unchanged and changing voice through student understandings. Her continued study of female voice mutation brought physiological descriptions and possible symptoms related to the voice changing experience (Gackle, 1991). These findings refined her voice stages to include physiological changes and acceptable range limits.

Further detail regarding symptoms of female voice maturation are presented by Gackle (2006) as well as criteria for classifying the changing female voice. She also explores self-concept of adolescent female singers. This is the theoretical frame for her book *Finding Ophelia's Voice, Opening Ophelia's Heart* (Gackle, 2011). Ophelia represents the "...destructive forces that affect young women during adolescence" (Gackle, 2006, p. 34). The symbolism of Shakespeare's character is a powerful reminder of both the physiological and psychological challenges associated with this age group. A more comprehensive approach is used when describing the stages of female voice mutation as well as descriptions of lived experiences with the voice mutation process. Possibly hidden gems within this text are the questionnaires provided in the appendices. These tools are helpful to both best serve middle level singers during voice maturation but also to inquire about past singing experiences of older students. The significance of this publication has prompted other prominent researchers, such as Sweet (2015, 2016a, 2016b, 2018), to further research self-concepts of female adolescent singers. Due to the prominence of qualitative research design, Sweet's publications are discussed in the social implications of the female changing voice.

Social implications

Reluctance to sing during adolescents has been explored by many (Ashley, 2006, 2010, 2011; Elorriaga, 2011; Freer, 2006, 2009, 2010; Gackle, 2006, 2011; Kennedy, 2002; Killian & Wayman, 2010; Mizener, 1993; Nannen, 2017; Sweet, 2015, 2016a, 2016b, 2018). Initially, much of this research was focused on the absence of male singers in choral ensembles. However, an emergence of research on the psychological implications of female voice change has brought a new found focus on both genders. Lived experiences in the classroom, home, and community

can have a profound effect on an adolescent's decision to sing as exemplified by the following literature.

Male Changing Voice. Freer (2009b, 2010) focuses on the theory of possible selves to examine participation of adolescent boys in choral ensembles. "In the broadest terms, possible selves are a person's impressions of what they might become, what they would like to become, and what they fear becoming" (Freer, 2010, p. 17). A review of the literature provides a variety of answers to the 'missing male' phenomenon (Freer, 2010). A selected example from the literature includes: adolescent's choosing to participate when they feel successful (i.e. Csikszentmihalyi, 1990); a sense of belonging (i.e. Daniels & Leaper, 2006); and attributing success to ability as opposed to effort (i.e., Legette, 1998; Ruddock & Leong, 2005; Schmidt, 1995) (Freer, 2010). Music educators can have a profound effect on the aforementioned examples. Unfortunately, there have been examples of music educators reportedly requesting that students with changing voices "...stand in the back of the choir and mouth the words" (Freer, 2006, p. 73). Providing students with the necessary tools to be successful, such as appropriate vocalizes and music with appropriate tessitura, will develop a positive self-concept as a singer (Freer, 2009a).

The English choral tradition, with the myriad of professional boy choirs, debates on how long boys should continue to sing in their treble voices (Ashley, 2010, p. 137). Traditionally associated with sacred music, the boy soprano voice is a symbol of innocence because of its high tessitura and pure tone quality. This symbolism can conflict with the idea of masculinity during adolescence (Ashley, 2006; Elorriaga, 2011). It is also quite possible that singers who continue singing with a treble voice quality beyond adolescence and into age 16 and 17 may confuse "technique with testosterone" (Ashley, 2010). Comparable to research conducted in the United

States (i.e., Killian, 1999; Moore, 1995; Rutkowski, 1981, 1984), voice mutation is beginning as early as age 8 in the United Kingdom (Ashley, 2013). This concept can lead to the early dismissal of boys from choirs or a disregard for vocal health by ignoring the issue. Similarly, to other literature on the changing male voice, Ashley (2013) suggests that all boys over the age of 12 should be regularly assessed for changes in voice mutation. Specifically, to cathedral choirs, he recommends lowering the age demographic for choristers.

Other research focused on male participation in choir for both musical and non-musical reasons. More specifically, boys participate in choir to develop musical skill as well as friendships within the group experience (Kennedy, 2002). Additionally, training preservice teachers to identify the changed and unchanged voice through examples of unchanged v. falsetto singing may assist male singers through the voice maturation process both physically and emotionally in future classrooms (Wayman, 2009). Vocal identity can be a factor in the construction of male identity (Eloriaga, 2011), however, gender group categorization does not always determine singing interest (Nannen, 2017). Although related literature does indicate a higher rate of participation of females in choral ensembles, interest in participation does not eliminate the need for investigations of social implications of female voice change.

Female Changing Voice. Our profession "...has been sporadic and far between in promoting awareness of the existence of female voice change and an understanding of what this developmental experience encompasses for female singers" (Sweet, 2016b). Three core themes associated with female voice change are phonation experiences (i.e., passagio difficulty and vocal breathiness, premature self-identification with one voice part); emotional experience (i.e., frustration, embarrassment, pride, isolation); and contexts of singing (i.e., where I am singing, what I am singing) (Sweet, 2015). These themes were discovered through a phenomenological

study for the purpose of finding the *essence* (i.e. Mariall & Rossman, 2011) of a shared lived experience. Participants (N=14) consisted of 6-12 graders from a magnet school focused on the visual and performing arts in the Southeastern United States. Female participants were specifically chosen from this school due to "...a heightened awareness of their vocal mechanism..." and their ability to "...more clearly articulate their singing experiences..." (Sweet, 2015, p. 76). Initially, students provided written responses to three open-ended questions followed by related interview questions.

Some of the themes that emerged from this research are similar to the male changing voice, however, self-identification with one's part is unique to female singers (Siple, 1994; Sweet, 2015). This unique finding is the rationale for allowing female adolescent singers to rotate voice parts to prevent the premature identification of singers voice type (Phillips, 2013; Gackle, 2011; Sweet, 2016b). Emotional experiences can include feelings of isolation due to the lack of essential understanding about female voice change amongst adolescents in choral settings. "Discussions of laryngeal anatomy and function...will empower our female singers" (Sweet, 2016a, p. 62). Validating male, as well as female, experiences with the changing voice will promote equity amongst choristers. In other words, "we are all in this together, regardless of gender" (Sweet, 2016b, p. 63). This equitable ideal can also influence the context of singing. Although not directly related to voice change, the context of singing can have a significant influence of confidence in performance. Students who are singing music within a classical genre might be more hesitant than when they are singing their favorite musical theatre songs at home. Voice lessons with classically trained teachers as well as integrating vocalises into daily activities helped promote confidence and vocal stamina (Sweet, 2015). Further research on adult

female singers on voice changing experiences (i.e., Killian, 1997) resulted in three overarching themes: perceptions of vocal development, teacher influence, and emotion (Sweet, 2018).

These themes emerged through a qualitative study, with a constructivist theoretical framework, from interviewing participants individually (n=10) and in a focus group (n=7) at a large midwestern university with two thriving women's choirs (Sweet, 2018). Most participants perceived their voice as still developing in adulthood. Due to the lack of individual attention to the voice of each student by a middle or high school choir teacher, students "only sang the most accessible vocal lines during voice change" causing a decrease in opportunities to gain "...full vocal quality and function within choir" during the voice mutation process (Sweet, 2018, p. 142). Similarly to Sweet (2015), teachers who prematurely assign voice classification can cause students to self-identify with a certain part prohibiting crucial vocal exploration opportunities during time of laryngeal growth. Additionally, the lack of attention to the individual voice can produce lasting negative emotions about singing. Emotions including "...fear, sadness, self-doubt, insecurity, and self-deprecation..." may be a cause for adult female singers to recall a predominately negative experience with singing during adolescence (Sweet, 2018, p. 143). These negative experiences contribute to a "...lack of confidence and insecurity as a singer" (Sweet, 2018, p. 143). Unfortunately, a majority of negative experiences were from the voice mutation process in middle and high school choral experiences. Other contributors to these negative experiences were identified as a decrease in confidence due to an ineffective voice teacher and witnessing positive feedback for mediocre singing (i.e., *American Idol*) and feeling as if compliments on their own singing were only polite gestures (Sweet, 2018).

Additional contributions to this body of research include: development of musical self-concept during vocal expansion (previously referred to as vocal mutation) (Dunstan, 2013), what

is known by voice instructors and choral conductors regarding the female changing voice (Hall, 2010), and adolescent perceptions of singing and training (McRoy, 2011). Yet, it is pedagogical considerations that help unite the related literature to help create positive singing experiences for adolescents.

Pedagogical Considerations

To help foster enduring positive attitudes in students of both genders during this time of adolescent voice change, it is recommended to champion the unchanged and changing voice. Teacher acknowledgement of the existence of these physiological changes and incorporation of strategies to help facilitate a positive singing experience (Freer, 2009b; Gackle, 2011; Killian, 1997; Sweet, 2016a, 2016b). Common practices to champion the changing voice include: assessing singers regularly with voice mapping, curricular focuses on biological and emotional effects of laryngeal growth, flexibility in part assignments, and reflection about singing experiences (Freer, 2009b; Kennedy 2004; Killian, 1997; Sweet, 2015). Yet, there is much pedagogic debate on when an adolescent should be trained as a singer.

One pedagogical viewpoint is Edwin's (1997, 2014) concept of vocal parenting. Vocal parenting is a "...pedagogical approach that views the teaching of singing to children as a nurturing process" (Edwin, 1997, p. 135). Although some believe that private voice instruction should not occur until after puberty, an instructor familiar with this concept will know the appropriate vocal technique and repertoire for young singers. Additionally, trained within the vocal parenting tradition, young singers will possess the tools to identify when they are at risk of "hurting themselves" or being "hurt by other people" (Edwin, 2014, p. 341). This concept embraces "...physical and emotional changes..." on the voice of a young singer (Edwin, 2014, p. 342).

Skelton (2007) agrees that singing through the voice changing process can be a positive experience for both teacher and singer. More specifically, the "...majority of singers that receive early training will manage voice mutation more gradually during puberty than those that do not..." (Skelton, 2007, p. 541). Although I agree with many aspects of Skelton's (2007) article, his statement that a young female voice will most likely experience minimal vocal instability when compared to the male experience has been questioned by later research (Gackle, 2011; Sweet, 2015, 2016a, 2018). In summary, "...singing teachers must accept that children have a profound capacity for singing artistically with outstanding technique, and such potential can be realized safely and effectively" regardless of gender (Skelton, 2007, p. 543).

Leborgne (2016), both a voice pathologist and singing voice specialist, also agrees with previous literature that suggests singing from "kindergarten to college" is recommended as long as the "...vocal demands on young singers are reasonable and appropriate...they will maintain a healthy laryngeal mechanism" (p. 26). Some 'reasonable and appropriate' suggestions include: singing participation being encouraged but not forced, choral singing for young singers will typically provide age-appropriate music and teach basics of vocal technique, and training that includes regular assessments of the physical, cognitive, emotional, and musical abilities to inform appropriate techniques for the young and changing voice (Leborgne, 2016).

Furthermore, some advocate for a collaboration between large ensemble conductors and studio teachers as the best approach to vocal education (i.e., Harrison, 2005). I would especially like to highlight the suggestion of choral conductors and singing teachers working in the same room with students. For me, this is both an educational and professional lived experience. As a choral conductor and studio teacher, I have personally observed that students tend "...to achieve

a result which is both satisfying to the ear and healthy for the voice” through a true collaboration of both professionals (Harrison, 2005, p. 8).

Measurement Instrument

In an effort to explore the perceptions of singing of eighth grade students, it was important to find a measurement tool that measured perceptions in several subcategories covering a variety of concerns from the related literature. Although previous studies have used instruments such as the Music Attitude Inventory (MAI) and the Music Class Attitude Index (MCAI) (Boswell, 1991), it was relevant to include a specific measurement of attitudes about singing in adolescents. One of these tools is the Meizener (1993) Singing Interest and Choir Participation Questionnaire. Meizener’s (1993) study is well known for finding no significant difference between singing skill and singing interest of adolescents. Cited by over one hundred scholars, this questionnaire measures student perceptions of singing in five categories: 1) Singing Interest; 2) Choir Participation; 3) Classroom Singing Activities; 4) Self-Perceptions of Singing Skill; 5) Out-of-School Singing Experiences.

Singing interest and choir participation questionnaire

These five categories were specifically selected from trends within the literature, thus establishing content validity (Clements, 2002; Demorest, et al., 2017; Mizener, 1993; Sichivitsa, 2003, 2007; Siebenaler, 2006). Items on the questionnaire regarding singing interest are an effort to gain an understanding about general attitudes of singing as well as singing in specific circumstances. Choir participation items inquire after adolescent interest in membership to a choir in addition to how a choir is more or less attractive to students. The relationship between singing interest and common classroom music activities is the focus of the classroom singing activity items. Although originally created to examine the relationship between attitudes and

singing skill, I slightly modified the self-perceptions of singing skill category. Since Mizener's (1993) original study found no significance between singing interest and singing skill, my revised items investigate any relationship between the changing voice (Cooksey, 1977, 1992, 2000; Gackle, 2006, 2009, 2010, 2011) and its effect on perceptions of singing skill (i.e. Ashely, 2011; Freer, 2009; Killian, 1997; Sweet, 2018). Items in the out-of-school singing experiences category examine the relationship between family influence and attitudes toward singing, especially familial singing habits, reinforcement to sing from family members, and interaction between family and singing activities.

Chapter 3: Method

“Music is a prominent force in the lives of adolescents, and they value its potency in directing the course of their daily activity as well as their long-range hopes and dreams.”

- Adolescents’ Expressed Meanings of Music in and out of School
(Campbell, Connell, & Beegle, 2007)

This convergent mixed methods study was designed to examine adolescents’ attitudes and perceptions toward singing with in the middle school model. This chapter provides specific details concerning the methods and procedures that were used for this study and follows this organization format: (1) Overview and Design, (2) Quantitative Strand, (3) Qualitative Strand, and (4) Mixed Methods. Within this format, a discussion of subjects, personnel and facilities, materials and equipment, procedures, and data analysis is included in the narrative.

Mixed Method Overview

In music education, mixed methods design is a relatively new approach to research (Fitzpatrick, 2016; Sims et al., 2016; West, 2014). Most music education research utilizes a quantitative design (Sims, Lordo, & Phelps, 2016; Yarbrough, 2002); however, current approaches are beginning to apply a mixed methods design offsetting the strengths and weakness of quantitative and qualitative approaches (Plano Clark & Ivankova, 2016).

Although the integration of both approaches is deemed valuable by experienced researchers in the field (e.g., Berg & Miksza, 2010; Fitzpatrick, 2011, 2016; West, 2014), quantitative research dominates music education (Asmus & Radocy, 2002; Sims, Lordo & Phelps, 2016; Yarbrough, 2002; Zelenak, 2015). The purpose of arts-based research is “...to extend beyond the limiting constraints of discursive communication in order to express meanings that otherwise would be ineffable” (Barone & Eisner, 2012, p. 1). In this sense, data collection provides an objective or quantitative measurement of musical experiences, whereas, the human

perspective or ineffable qualities of musical experiences may be best understood in a qualitative approach to research. Mixed methods research is a means to extract the assets from both qualitative and quantitative research to obtain a complete understanding of a research purpose (Creswell, 2014; Creswell & Plano Clark, 2018; Plano Clark & Ivankova, 2016; Tashakkori & Creswell, 2007; Tashakkori & Teddlie, 2010). Some define mixed methods research at a paradigm level (Johnson & Onwuegbuzie, 2004).

To mirror things going on in the discipline, I focus on a more pragmatic definition. My definition of mixed methods research is one where both qualitative and quantitative data are both collected and valued to serve a broader purpose beyond the strengths and weaknesses of a single design. This definition accommodates the current mission of music education which is "...promoting the understanding and making of music by all" (NAfME, 2016). To pursue this promotion, one must consider both individual perspectives as well as objective measurements when developing research to advance the field of music education. In this regard, music education is an ideal field to explore mixed methods research. Evidence suggests that an inquiry addressed with mixed methods research provides a broadened perspective (Plano Clark & Ivankova, 2016). It is with this broadened perspective that I address the purpose of this current study.

Design. The purpose of this mixed methods study is to explore the attitudes and perceptions of eighth grade students toward singing and choir participation in relation to voice mutation stage and method of music instruction. To pursue this purpose, a design was chosen for this study that examined both quantitative and qualitative data simultaneously followed by a purposeful integration of the two data sets or a convergent mixed methods design. Equal priority was given to both the quantitative and qualitative strand of the design (QUAN + QUAL). The

rationale for this design was to compare quantitative and qualitative results “...to produce more complete and validated conclusions” (Plano Clark & Ivankova, 2017, p. 120).

Fitzpatrick (2011) used a convergent mixed methods design with an advanced design feature to study instrumental music teachers in a urban setting. In phase one of the study, a focus group (N=27) was established to develop a survey instrument. Phase one of this study is considered the advanced feature where one methodology is added to the framework of a larger design (Creswell & Plano Clark, 2018). In the overall design, the quantitative participants (n=90) were given a researcher designed survey and the collection of qualitative data occurred concurrently consisting of interviews and observations of participants (n=4). To better communicate the flow of her study, Fitzpatrick (2011) included a procedural diagram. She equally emphasized the quantitative (survey) and qualitative (interviews and observations) data (QUAN + QUAL) while the initial qualitative results of the advanced feature were not given priority in the study (qual). Overall, the transparency of the study provides a clear and complete picture of the researcher’s intent. This transparency may contribute to this convergent mixed methods model being published in the *Journal of Research in Music Education* (2011) as a research study and also in the *Journal of Mixed Methods Research* (2016) as an example of how to conduct mixed methods research in music education.

The timing in a convergent mixed methods design is concurrent, meaning both sets of data are collected simultaneously. In this sense, there is “...limited interaction between the two datasets during the data collection, but the findings complement one another at the end of the study” (Morse, 1991, p. 120). This design typically provides equal weight on quantitative and qualitative data. The quantitative strand of this study consisted of my adaption of the Mizener (1993) Singing Interest and Choir Participation Questionnaire and analyzed using two-way

analysis of variance (ANOVA). Qualitative data were collected from semi-structured interviews and coded on the basis of voice maturation stage of each participant. Data were analyzed separately and merged together during interpretation (Creswell & Plano Clark, 2018). The integration of data represent the following subgroups: attitudes, perceptions, and voice maturation stage. Using the notation as explained by Plano Clark & Ivankova (2016), the notation for this study is QUAN + QUAL. A detailed procedural diagram is detailed in Figure 2.

Although the convergent mixed methods design was ideal for this study, it did present some challenges during the research process. Two major challenges include time and obtaining participants. The timing of this design is concurrent, however, results of the quantitative strand had to be recorded to discover those interested in participating in the qualitative strand of the study. Additionally, those who were interested in the qualitative strand were individually tested for voice maturation stage to qualify for the interviews.

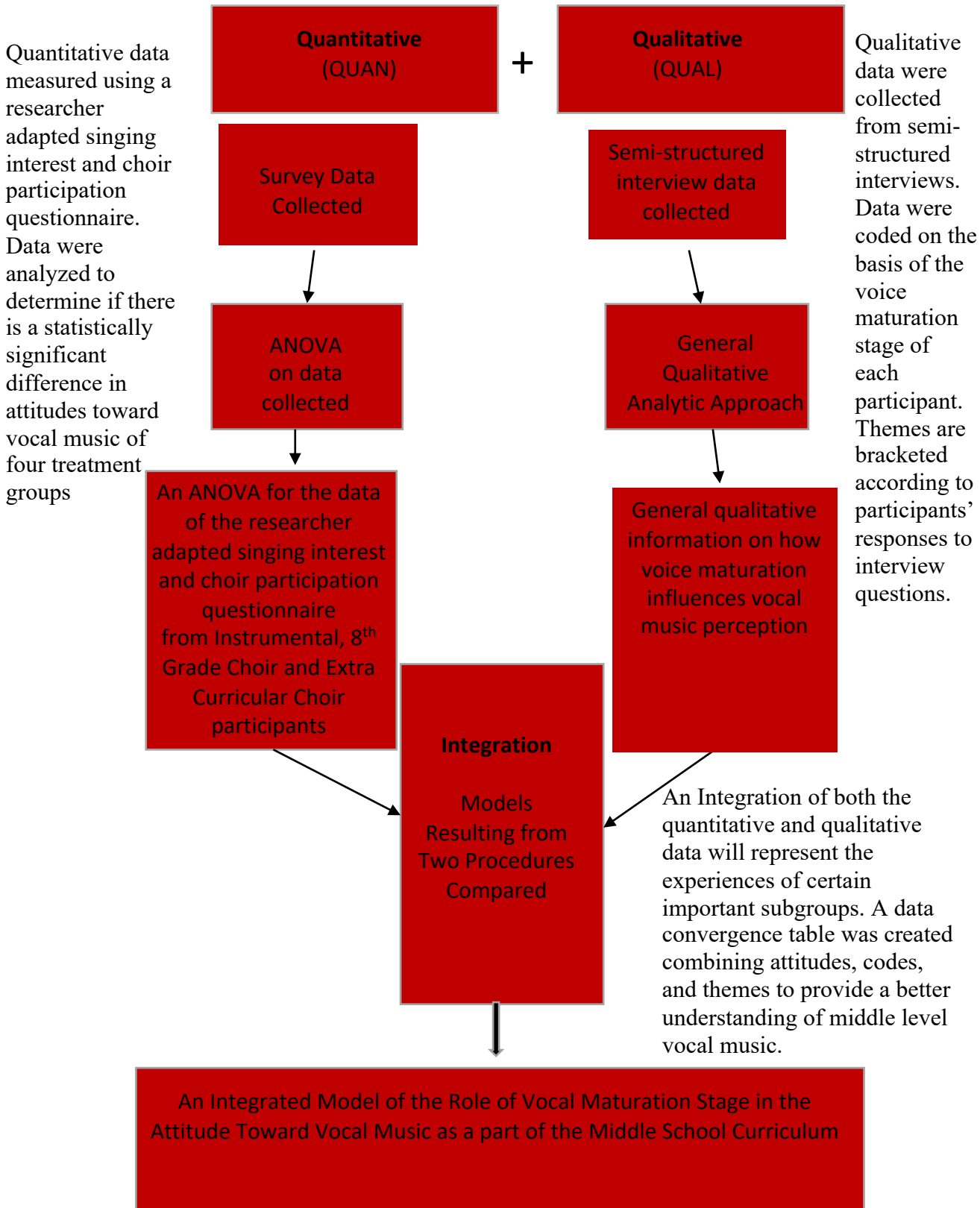


Figure 2. Procedural diagram of the convergent mixed methods design.

Another challenge to this study was preserving the anonymity previously given by quantitative survey. Due to the face-to-face nature of the interviews, the anonymity provided by the qualitative survey is rendered null and void. This is even more of a possibility given the author on journal or conference papers will be identified as a former instructor of a Midwestern school district and likely reference the school district in the author biography. Since the information obtained in this study will be published or presented at conferences, the participants were informed of this anonymity risk. Although the anonymity of all students could not be protected in this study, all research materials were kept confidential. Merriam & Tisdell (2016) informs researchers that credibility comes with ethical proceedings:

“At the local level, it is nearly impossible to protect the identity of either the case or the people involved...part of ensuring for the trustworthiness of a study – its credibility – is the researcher himself or herself is trustworthy in carrying out the study in as ethical a manner as possible” (pp. 264-5).

Interviews were conducted in a private room and interview recordings as well as field notes were kept in a secure location. All research results were kept on a password protected computer and a box research data storage account arranged through the University of Nebraska-Lincoln to further enhance the confidentiality of the data. Other personnel from the University of Nebraska-Lincoln that assisted with this study included the staff at the Nebraska Evaluation and Research (NEAR) Center for data analysis and the Bureau of Sociological Research (BOSR) for interview transcriptions. Approval for this project was obtained through the IRB.

Quantitative Strand

The quantitative portion of this study was designed to explore the effect of music instruction method and gender on attitudes of singing in eighth grade students. The measurement

tool was piloted in a Midwestern school district and reviewed by a panel of experts. Participants in the current study included a sample of eighth grade students from middle schools in the aforementioned school district.

Description of the population. An *a priori* calculation of the required sample size was conducted with an alpha level of .05 and a confidence level of $\pm .05$ using G*Power, a flexible statistical power analysis program (Faul, Erdfelder, Buchner & Lang, 2009). Assuming a normal response rate, it was determined that a sample size of 279 completed questionnaires was needed. At the completion of the questionnaire, there were 826 recorded responses, 91% rate of return. After removing 218 responses from students currently taking private lessons, a total of 608 useable questionnaire responses remained. Eleven incomplete questionnaires were deleted (n=597). Finally, thirty-five responses were deleted due to answering the checkpoint question “We have lunch at 9 o’clock in the morning” incorrectly, leaving 562 viable responses.

Student demographics included a description of curricular and extracurricular music involvement at the middle school: Curricular Instrumental Music (n=301, 54%), Curricular Vocal Music (n=145, 26%), Curricular Music and Extracurricular Choral (n=72, 13%), and Curricular Instrumental and Vocal (n=44, 7%). Personal student demographical information included gender, Male (n=245, 44%) and Female (n=317, 56%); and socioeconomic status (SES). To preserve anonymity of the students and school district, SES was determined by the percentage of students on free and reduced lunch in each school. If the school had more than 45% of its population using a lunch service, than they were considered to be a school with low SES (U.S. Department of Education, 2015b).

Although this school district serves 3,038 eighth grade students, not all schools have an equal population which influences the opportunity for some students to participate in curricular

music courses. This may be an explanation for the uneven participant numbers throughout the district, however, another explanation could be the underrepresentation of students from lower socioeconomic backgrounds participating in school music ensembles. From the related literature, it is important to note that students' socioeconomic status (SES) has shown significant main effects in some studies (e.g. Elpus & Abril, 2011; Miksza, 2007) and used as a controlled variable in others (e.g. Fitzpatrick, 2006; Kinney, 2008). This study uses SES as a control variable by purposefully sampling students from all twelve middle schools in the district and is measured by the number and percentage of students participating in the free and reduced lunch program in the district (N=1,387, 45.7%). Overall, the student participants were fairly evenly represented across the district with students of high SES (n=361, 60%) and students of low SES (n=236, 40%) based on a sample population of n=597.

Data Collection (Measurement Instrument). I modified the Mizener (1993) Singing Interest and Choir Participation questionnaire to meet the particular needs of the study. Permission was obtained from Mizener to use the questionnaire for this dissertation on June 13, 2017 (See Appendices). It was originally created to measure singing interest and choir participation in third through sixth grade students. Modifications in the questionnaire were limited to minor adjustments to accommodate classroom activity changes over time (i.e. records & tapes to tracks) and activities from an elementary setting to a middle school setting in this district (i.e., play bells to play guitar or ukulele). Following the administration of the pilot survey, some questions were added to better understand singing interest and choir participation of older students. Specifically, voice maturation questions were added to the self-perceptions of singing skill category and singing interest category in addition to questions regarding the participants desire to seek out singing opportunities in school. No modifications were made that

could influence the validity and reliability of this questionnaire. Once the final survey was developed and administered, Cronbach's alpha was calculated to measure the internal consistency of the instrument (Nunnally, 1967, 1978). The overall alpha coefficient for the survey was .80.

The questionnaire, as modified, consisted of a short demographic section (i.e., school, teacher, gender and treatment group) and five categories of questions to obtain data specific to the research questions. Below is a discussion of the format and response modes of the questionnaire followed by a list of these categories including descriptions of survey items within each category.

Format and response. As stated previously, this questionnaire was originally developed to test students in an elementary school in 1993. An answer sheet was distributed to the original participants and questions were read aloud. This questionnaire was recently piloted in the original mode of delivery and I found the eighth graders became disinterested in the process. Since it is recommended by NMSA (2010) to integrate technology and involve each student personally, I decided to use the *Qualtrics* (Qualtrics, 2019) program and have each student move at their own pace answering survey items.

Three items on the questionnaire were identified by Mizener (1993) as forced choice answers of "yes" or "no". Originally, the question "Do you go to music class every day?" was used as a practice question. However, for the purposes of this study, this item served as a comparison question in order to determine different scheduling practices of each middle school. Another forced question, "Do you like to sing?" was used to collect a general attitude about singing. The other three items with forced choice answers concern choral participation and out-of-school singing experiences.

The remainder of the items on the questionnaire are in statement form. The majority are answered with the participant selecting if the statement is true, not true, sometimes true, or not sure. The answers to these items were converted from a four-point Likert scale to interval data where true=1, not true=2, sometimes=3, and not sure=4 for analysis purposes. A few items on the questionnaire, in the singing interest and classroom singing activities categories, utilized a multiple choice format where the participant chose from a group of two or three responses.

Five categories. This questionnaire contained items in five categories: 1) Singing Interest; 2) Choir Participation; 3) Classroom Singing Activities; 4) Self-Perceptions of Singing Skill; 5) Out-of-School Singing Experiences. Most items on the questionnaire are grouped by category, yet some items were placed elsewhere to account for mode of response (see format and response below).

Singing interest. The items within the singing interest category were designed by Mizener (1993) to gain an understanding about the general attitude of singing as well as singing in specific circumstances. Within this category, the male changing voice is addressed but not the female changing voice. This led me to add items to this category including: “I think that when a girl’s voice starts to change, she should continue to sing”; “I always seek to find opportunities to sing in middle school”; and “I never seek opportunities to sing in middle school”. These items were added due to the plethora of established and newly emerging literature on the female changing voice (i.e. Gackle, 2011).

Choir participation. To gain perspective on the interests of adolescents regarding membership to a choir, the choir participation category was included. This category not only inquires after adolescent interest in membership to a choir but also which situation membership to a choir is more or less attractive to students. I did not add any items to this section. The

original category contained sixteen items and addressed familial participation in choir, choir participation as a reflection of future career goals, perceptions of choir as leisure activity or academic subject, student perceptions of teacher rhetoric during class, and investigative reasons for belonging or not belonging to a choir.

Classroom singing activities. These items were included to discover any relationships between singing interest and common classroom music activities. Since the questionnaire was originally written for elementary school children, the items inquiring about range were used because of related literature on an elementary music book series where the tessitura of most songs was too high for students (Kavanaugh, 1982). However, due to the related literature in middle level vocal music where both boys and girls are sometimes asked to sing in an uncomfortable range or prematurely categorized into a vocal part (i.e. Ashley, 2011; Gackle, 2011), these items remain in the questionnaire. Other items in this category referenced singing accompanied or accapella, using classroom instruments while singing, clapping while singing, and incorporating movement while singing. Mizener (1993) referenced literature about these singing activities previously being used in other studies regarding music attitudes (i.e. Murphy & Brown, 1986 as cited by Mizener, 1993). Similarly, I found studies specifically focused on music activities in middle level education (i.e. Boswell, 1991; Lowe, 2011) which confirmed those found by Mizener (1993) so there were no questions added to the items in this category. However, a few responses were changed to reflect the music activities of this Midwestern school district based on my knowledge of the music curriculum.

Self-perceptions of singing skill. In Mizener's (1993) study, this category was included to "...determine possible relationships between perceptions of singing skill and attitude toward singing" (p. 40). These perceptions were then compared to an assessment of actual singing skill.

Results indicate no significance between pitch matching nor melodic accuracy and self-perceptions of singing skill. On that premise, I did not include an actual assessment of singing skill but did include twelve additional items in this category. These items intended to investigate any relationship between the changing voice (Cooksey, 1977, 1992, 2000; Gackle, 2006, 2009, 2010, 2011) and its effect on perceptions of singing skill (i.e. Ashely, 2011; Freer, 2009; Killian, 1997; Sweet, 2018).

Out of school singing experiences. Previous literature suggests that positive interactions with music among family members increases music achievement and influences music participation (Austin & Vispoel, 1998; Creech & Hallam, 2003; Corenblum & Marshall, 1998; Davidson, Howe, Moore, & Sloboda, 1996; Davidson, Sloboda, and Howe, 1995; McPherson, 2009; Zdzinski, 1992, 1996, 2013). Lehmann, Sloboda, & Woody (2007) suggest that “parental support seems to be a basic requirement for children to continue their musical involvement” (p. 50). This category of the questionnaire primarily examines the relationship between family influence and attitudes toward singing. More specifically inquiries regarding familial singing habits, reinforcement to sing from family members, and interaction between family and singing activities are included in the items.

Procedure. I utilized a software and questionnaire tool called *Qualtrics* (Qualtrics, 2019). This service provided unlimited questions, a quick and simple data collection service, and secure data storage of the questionnaire responses. All data in the quantitative strand of this study were analyzed using SPSS. I took special care in modifying the Mizener (1993) questionnaire so that it was easy to complete and readable by the participants.

After I obtained campus Institutional Review Board approval, I met with all eighth-grade music teachers in the school district and invited them to participate in my study. Following the

meeting with the music teachers, I developed a schedule to meet with each band, orchestra, vocal music class as well as extracurricular vocal ensembles. During these classroom meetings, I invited students to participate in my study. First, I introduced the students to purpose of the study and then distributed stamped envelopes containing parent/guardian notification forms (N=906). Students addressed the envelopes and I placed the addressed envelopes in the mail. All eighth-grade students who did not return a notification form were invited to participate in the study. Five days after the notification occurred, students were allowed to participate in the study. The school coordinated the distribution of the survey through the school website by creating a jump code which is a series of letters when entered in the search box redirects the student to the survey. I returned to each middle school to proctor the survey during class time and a before/after school extracurricular rehearsal.

In order for interested volunteers to be contacted for the qualitative study, students were asked to provide their name on the survey. The request for the participants name was followed by a confidentiality and anonymity statement to provide an opportunity to the participant to answers questions without fear of judgement. Following the survey, student names were collected only from those interested in the qualitative portion of the study. The interested students were given letters of assent and parent/guardian consent and were asked to be returned to me in a preaddressed stamped envelope. Ethical considerations are especially crucial when children are participants (Creswell, 2013). To ensure confidentiality in the qualitative process, only the classroom teacher and myself knew the identity of the interested participants and all data was stored in a secure box account provided by University of Nebraska-Lincoln research.

Data Analysis. Data were analyzed using a two-way analysis of variance (ANOVA) with independent factors of method of music instruction (curricular vocal music instruction, curricular

instrumental ensemble instruction, curricular music instruction and extracurricular choral ensemble, curricular instrumental and vocal instruction) and gender (male and female) and a dependent variable of singing attitudes of eighth grade students. A Bonferroni post hoc test was further used to compare pairwise differences between mean values.

Ascertaining validity and reliability. The Mizener (1993) singing interest and choir participation is a valid and reliable measure used to examine perceptions of singing in five categories: singing interest, choir participation, classroom singing activities, self-perceptions of singing skill and out-of-school singing experiences. This questionnaire utilizes statements with four-point Likert-scale for the majority of the items, but some statements utilize a multiple response or a forced “yes” or “no” response.

During a pilot study in the spring of 2017, prior to its use in this dissertation study, I calculated Cronbach’s alpha to measure the internal consistency of the survey items intended to represent various underlying constructs. The overall alpha coefficient for the survey was .72. I decided to add statements to the questionnaire to increase the internal validity of the instrument (Nardi, 2018). Validity was assessed by a review of the literature.

Statements added to this questionnaire were tested for face validity by faculty, colleagues, and a small group of age appropriate students to ensure that statements were not biased and could be easily understood by the intended population. Once I completed the final adaptation of the Mizener (1993) questionnaire, Cronbach’s alpha was again calculated to measure the internal consistency. This indicated all items on the adapted questionnaire had a high level of internal consistency (48 items, $\alpha = .89$). It is important to note that not all questions from the Mizener survey were on the same scale. The following alpha will report the items used

the same scale. The other items (11 items) in the survey were used for frequency and comparative measurements.

The five categories of the measurement tool were also tested for internal consistency using Cronbach's alpha. The five subscales are Singing Interest (10 items, $\alpha=.692$); Choir Participation (16 items, $\alpha=.677$); Classroom Singing Activities (4 items, $\alpha=.647$); Self-Perceptions of Singing Skill (14 items, $\alpha=.819$); Out-of-School Singing Experiences (3 items, $\alpha=.597$). Additionally, an external statistical evaluator was utilized for the quantitative data analysis. To obtain the most accurate data and results, a statistical analyst from the NEAR center assisted the me to ensure the results of the pilot test were accurate. This process was repeated for the current study.

Ethical issues. IRB approval was obtained prior to data collection (see Appendix A). Only students who did not have a returned notification form on file with the school were invited to participate. Additionally, all students had to assent to participating in the quantitative portion on the first page of the survey. Ethical considerations are especially crucial when children are participants. Due to the personal nature of the qualitative portion of the study, any student participating in the interviews had to obtain parental consent.

All results from this study remained confidential. The identity of each student remained anonymous on the quantitative portion of the study. Although anonymity could not be guaranteed to qualitative participants, I carried out the research in as ethical manner as possible (Merriam & Tisdell, 2016). Every effort was made to protect the identity of qualitative participants, including conducting the group interview in a private location and providing pseudonyms for each participant.

Qualitative Strand

Overview and participants. An important component of qualitative research is the epistemological framework employed by the researcher. It is important for the researcher to be definite on philosophical beliefs before beginning the qualitative process (Babchuk & Baidee, 2010; Hatch, 2002). To this end, I purposefully used common conceptual and theoretical frameworks for both the quantitative and qualitative strand (Creswell & Plano Clark, 2018). The qualitative study inquires how middle school students in various stages of vocal maturation perceive vocal music. To truly understand the student perceptions of vocal music, I consider the constructivist paradigm. Constructivists assume there are multiple realities (Creswell, 2013; Denzin & Lincoln, 2011; Hatch, 2002; Merriam & Tisdell, 2016; Neuman, 2011). The researcher and participants form their interpretation of reality through shared experiences and divergent perspectives are not incorrect, just different (Creswell, 2013; Neuman, 2011). Bruner (1986) explains “contrary to common-sense, there is no unique ‘real world’ that preexists and is independent of human mental activity and human symbolic language” (p. 95). Constructivism allows the participant to take ownership of lived experiences in a less threatening environment (Webster, 2018). Constructing a reality of middle level vocal music through shared experiences with participants allowed me to better understand how middle level students value, realize and understand their vocal music education. Given the importance of this paradigm, I was actively learning and constructing new understandings from a middle level perspective during face-to-face interviews (Hoover, 1996).

In depth qualitative interviews were conducted with select individuals to gain this middle level perspective. Participants were selected from the sample that completed the quantitative portion. As Patton (2015) explains: “We interview people to find out from them those things we

cannot directly observe...we cannot observe how people have organized the world and the meanings they attach to what goes on in the world” (p. 426). Due to the fact that students had to volunteer to be included as potential participants for the qualitative strand, there were a substantial number who qualified for this study. In order to maintain a sense of focus for the concurrent interviews, only students with a specific similarity were invited to participate. The commonality selected for this study was voice maturation stage and positive singing attitudes.

I determined voice maturation stage based on range and timbre as stated in Cooksey (2000) and Gackle (2011) written guidelines. Each participant was asked to count backward from 20 to determine the fundamental pitch of the speaking voice (Cooksey, 1992; Gackle, 2006). Given in previous research it has been found the speaking voice is usually 3-4 semitones above the lowest pitch in both genders, the singing portion of the voice maturation test began at the speaking pitch (Cooksey, 1977, 1997, 2000; Gackle, 2006, 2011; Killian, 1999). Starting with the fundamental speaking pitch, participants were asked to sing a descending pentatonic scale (sol, fa, mi, re, do) on [a] to find the lowest terminal pitch and returning to the fundamental speaking pitch and repeating the process while ascending to find the highest terminal pitch (Gackle, 2006). During this process, participants were encouraged to move, relax the jaw, sing sirens, and use breath management skills so I could get an accurate reading of the vocal range (Gackle, 2006). I categorized participants into voice maturation stage which resulted in a small sample (n=7) of interested participants. Of the 7 students (f=5, m=2), 3 female students (Samantha, Susan and Lisa) were in stage IIB (postmenarcheal), 2 female students (Emily and Felicity) were in stage III, 1 male student was in stage III (Jason) and the other male student was in stage IV (Bruce).

Due to the convergent design, participants were not determined by the survey results. This was determined by the overall vocal music participation numbers of the school itself. If the school had high numbers of curricular and extracurricular vocal music participation, it was considered to have a positive attitude toward singing. One school within the district fit this qualification where approximately 40% of the student body were involved in vocal music activities, there were two class periods of curricular 8th grade choir offered with an enrollment of 30 students each, and the majority of students in the curricular 8th grade choir had experienced consistent offerings of curricular vocal music courses. In this sense, the qualitative strand was an inquiry within a bounded system.

Although a general qualitative approach was used for this study, the method of data collection closely resembles an instrumental case study. This method is recommended when the researcher has identified cases within a bounded system and seeks to gain an in-depth understanding of these cases (Creswell & Poth, 2017). Some define a case study by its methodology or comprehensive research strategy (Merriam & Tisdale, 2016; Yin, 2014). For the purposes of this research, I define a case study as an inquiry to “...illuminate and explicate some analytical theme, or object” (Thomas, 2016, p. 23). In this sense, the results may not be generalized to a population but will render “...a rich picture and ...analytical insights...” (Thomas, 2016, p. 23).

Data collection procedures. In this study, concurrent data collection allowed me “to obtain different but complementary data on the same topic” (Morse, 1991, p. 122). This design was used to compare both quantitative and qualitative data on the same topic (Creswell & Plano Clark, 2018). A basic qualitative approach was used in the data collection procedure to

“...engage in and make meaning of an activity, experience, or phenomenon” (Merriam & Tisdell, 2016, p. 23).

Group interviews were conducted with interested participants. As mentioned previously, the element that associated the interview participants was their voice maturation stage and positive attitudes toward singing. Interview questions were created based on the related literature and my own lived experiences as a middle school music teacher. Once I reached saturation and no new information was acquired, interviews were concluded and data were analyzed for codes and themes.

Data analysis. Data analysis of the qualitative strand occurred independent of the quantitative strand. However, there are concerns that data collected concurrently may not always be analyzed completely independently “...due to overlapping research aims or certain styles of reasoning” (Hatta, Narita, Yanagihara, Ishiguro, Murayama, & Yokode, 2018, p. 2). To avoid overlapping data, I transcribed the audio recordings verbatim. Together with my interview notes, transcriptions were read and analyzed by jotting down notes, comments, observations and queries in the right hand margins by the lines that were “interesting, potentially relevant, or important to (the) study” (Merriam & Tisdell, 2016, p. 204).

Codes were developed from these jottings and recorded in the left hand margin of the transcription. In vivo codes (words of the participants) were used as often as possible to relay the most accurate description. Potential quotes were also considered but not coded in the transcription. These quotes were highlighted within the transcriptions. Codes were then grouped in a process known as axial coding for the purposes of bringing “... the data back together again into a coherent whole after the researcher has fractured them through line-by-line coding”

(Charmaz, 2014, p. 341). Fewer, more comprehensive, categories emerged from this process and were recorded as the themes for this study (Merriam & Tisdell, 2016).

Ascertaining credibility and dependability. To ensure that qualitative data were credible, transferrable, dependable, and confirmable (Lincoln & Guba, 1985), I used the following three strategies: member checking, triangulation, and peer examination of data. Member-checking is presenting a summary of the findings to participants to check for accuracy (Creswell & Plano Clark, 2018). A second strategy applied to the validation process was triangulation where validity is achieved by "...data drawn from several sources...or several individuals" (Creswell & Plano Clark, 2018, p. 217). Although interviews were the main source of data collection, I acted as both an interviewer and participant observer to gather data from two reference points. The third, and final, strategy employed was peer examination of data. Both graduate students and faculty of the music education area in the University of Nebraska- Lincoln Glenn Korff School of Music reviewed findings using their own criteria (Creswell & Plano Clark, 2018).

Ethical issues. Although there are benefits to this study such as reciprocity for participants, some ethical concerns include anonymity due to the face-to-face group interview. Any student who chose to participate in the qualitative portion of the study forfeited the anonymity of their responses. Every effort was made to protect the identity of all participants and all information gained was kept confidential.

Unhindered responses from participants was another possible concern identified in this study. Since interviews were held in private meeting rooms within the school, students may have felt compelled to answer questions in rehearsed or expected manner due to the social construct. As stated previously, ethical considerations are especially crucial when children are participants

(Creswell, 2013). To ensure confidentiality in the qualitative process, all information was kept in a secure place that could only I could access.

Mixed Methods

Integration. To allow for an emergence of a more complete understanding, results were merged or integrated together for a direct comparison that would not be apparent from the quantitative or qualitative results alone (Creswell & Plano Clark, 2018). To facilitate comparison between the quantitative and qualitative data, I created a table in which quantitative frequencies to questionnaire items were compared to emergent codes and themes. With this comparison, I determined if the data confirmed, contradicted, confirmed and contradicted, or neither confirmed or contradicted one another.

Resources and skills. The Glenn Korff School of Music provided a grant of \$1,500.00 to help offset some of the costs associated with this project. The grant was used to purchase envelopes, copies, stamps, and transcriptions.

Additionally, a pilot study was conducted with the Mizener (1993) Singing Interest and Choir Participation Questionnaire prior to its use in this dissertation. Assistance in the validation process of the questionnaire as well as the data analysis of the quantitative results was carried out by the NEAR center at the University of Nebraska-Lincoln.

Summary

Quantitative data were collected from 8th grade students, providing information relating to participant singing interest and choir participation. Qualitative data were collected concurrently that explored, in an open-ended way, singing perceptions and voice maturation stage in face-to-face interviews. The results of the qualitative strand are not generalizable which is a limitation of the study, however, the purpose of the qualitative strand is to focus in on a

small number of people to develop a complex understanding of a certain phenomenon (Creswell, 2016). The integration process made a direct comparison of both strands of data in matrix form.

Attitudes and beliefs students hold on singing in middle school are broad and complex. Gaining insight to the challenges and rewards that students experience from a middle school singing experience can inform the profession as to what may be causing inconsistencies in vocal music course offerings across the nation. The ever evolving and ever changing middle school vocal music model does not always have to equal inconsistent course offerings. Through this study, it is my hope that the results will provide valuable information to create opportunities for all students to experience vocal music consistently throughout middle school and instill positive enduring attitudes about singing.

Chapter 4: Presentation and Analysis of Data

“It is difficult for adolescents to sing comfortably if they have no real awareness of what is happening to their own changing voices, especially if the singing activity is perceived as ‘non-essential’ by the culture in which it is embedded.”

– *Adolescence, Singing Development and National Curricula Design* (Cooksey & Welch, 1998)

Introduction

The purpose of this mixed methods study is to explore the attitudes and perceptions of eighth grade students toward singing and choir participation in relation to voice mutation stage and method of music instruction. This project was guided by three quantitative questions and one central qualitative question with seven subquestions. In considering the quantitative portion of the study, the central question examined the attitudes of singing among eighth grade students in four treatment conditions: curricular vocal music instruction (CVMI), curricular instrumental ensemble instruction (CIEI), curricular music instruction and extracurricular choral ensemble (CMEC), curricular instrumental and vocal instruction (CIVI). It also examined attitudes by gender to see if attitudes varied between gender groups or if an interaction existed between the aforementioned treatment groups and gender.

The qualitative portion of this study was guided by one central question and seven subquestions. The central question aimed to gain insight into how middle school students in various stages of vocal maturation perceive vocal music as a part of the 8th grade middle school curriculum. As adolescents begin to experience voice mutation, it is important to consider the impact that teachers, administrators, friends and family can have on personal perceptions during these rapid and profound changes. Additionally, it is important to also consider how students are learning about their changing voice to form deeper understandings of their responses. Therefore, the subquestions that supported the central question were a) What motivates students to

participate in either vocal music, instrumental music, or both during the school day?; b) How do friends and family influence middle level student perspectives of vocal music?; c) How do administrators and teachers influence middle level student perspectives of vocal music?; d) How do student attitudes toward vocal music compare to student attitudes toward other subjects?; e) How are students educated about their changing voices in the vocal music classroom?; f) How do students learn about changing voices in other classrooms outside of vocal music?; and g) How do middle level students use information from other resources (i.e., peers, family, social media) to form their perceptions of the changing voice?

This chapter begins with a presentation of the quantitative data and is followed by the results from the qualitative portion of the study.

Quantitative Results

Demographic analysis. The participants in this study were a sample of 8th grade students from all twelve middle schools in a moderately sized Midwestern city enrolled in a curricular vocal or instrumental music course or a member of an extracurricular choral ensemble. The demographic variables examined in this study included the following: self-identified gender, socioeconomic status (SES), and curricular and extracurricular music participation. Table 1 presents a data summary of this information.

A convenience sample of eighth grade students in a Midwestern school district (N=906) resulted in 826 responses to the questionnaire (91% return rate). After removing 218 responses from students currently taking private lessons, a total of 608 useable questionnaire responses remained. These responses were removed to examine only those participants who are receiving formal music instruction within middle school curricular and extracurricular offerings. Eleven incomplete questionnaires were deleted from the data collection (n=597). Although, this did not

serve as the sample size for the two-way analysis of variance (ANOVA) calculation, frequencies and socioeconomic status were calculated using this population. After calculating the two-way ANOVA, thirty-five responses were deleted due to answering the question “We have lunch at 9 o’clock in the morning” as something other than “not true”, leaving 562 viable responses. This question was used as a checkpoint to ensure students were reading questions carefully and answering truthfully (see Table 2).

Demographics were relatively balanced between gender and socioeconomic status (SES). As expected, due to the scheduling patterns and curricular offerings in this school district, there were twice as many instrumental participants (n=301) as vocal participants (n=145). Two groups were added to the instrumental and vocal participants to cover those students involved in an extracurricular ensemble or in more than one treatment group. These categories represented 19% (n=116) of the total population sample (see Table 1). In this school district, students have the option of participating in an extracurricular ensemble before or after school. Students also have the option to participate in a curricular instrumental ensemble and a curricular vocal ensemble.

Table 1
Demographic Data from Participants (n=562)

Characteristic	Frequency	Percentage
Self-identified gender		
Male	245	44%
Female	317	56%
School Setting		
High SES	361	60%
Low SES	236	40%
Music participation		
Curricular Vocal Music	145	26%
Curricular Instrumental Music	301	54%
Curricular Music and Extracurricular Choral	72	13%
Curricular Instrumental and Vocal	44	7%

Note. “SES” indicates socioeconomic status. This frequency is derived from a larger population of responses (n=597). If a school had less than 45% of its students participating in the free or reduced lunch program, they were considered to have high socioeconomic status.

Measurement instrument. Data were acquired through the use of my adaptation of the Mizener (1993) singing interest and choir participation questionnaire. The DeAmbrose/Mizener instrument primarily measures adolescents’ attitudes toward singing and choir participation in five categories. My adaptation of this questionnaire is 59 items in length and was presented to participants in an online format. This questionnaire is designed to measure the relationship between attitudes and other variables. These variables include singing interest (SI), choir participation (CP), classroom singing activities (CSA), out-of-school singing experiences (OSE), and self-perceptions of singing skill (SP). I adapted this questionnaire to reflect current musical practices of the time (i.e. accompaniment on records changed to accompaniment on CD tracks) and to be relevant to middle school music students (i.e. musical activities common for elementary students changed to reflect those common to middle school students). A breakdown of items from each category can be found in Table 2. The permission email to use and adapt the

questionnaire can be found in Appendix F and the full questionnaire can be found in Appendix H.

The majority of the items on the questionnaire are in statement form and are answered on a four-point scale with the participant selecting if the statement is true, not true, sometimes true, or not sure. A few items on the questionnaire, in the singing interest and classroom singing activities categories, utilized a multiple-choice format where the participant chose from a group of two or three responses. Five items on the questionnaire were identified by Mizener (1993) as forced choice answers of “yes” or “no”. Originally, the question “Do you go to music class every day?” was used as a practice question. However, for the purposes of this study, this item served as a comparison question in order to determine different scheduling practices of each middle school. Another forced question, “Do you like to sing?” was used to collect a general attitude about singing. The other three items with forced choice answers concern choral participation and out-of-school singing experiences.

Table 2

Categorized items from the DeAmbrose adaptation of the Mizener (1993) questionnaire

SI

I like to sing by myself in music class.

When I hear songs on the radio, I enjoy singing along.

It is fun to sing with a few friends or people in my family.

I never seek out opportunities to sing in middle school

I like to sing when I am all by myself.

I think that everyone should sing, not just the singers on radio, TV, or iTunes®.

I think that when a boy's voice starts to change and get lower, he should continue to sing.

I think that when a girl's voice starts to change, she should continue to sing

I always seek to find opportunities to sing in middle school

I can't sing all the notes my teacher wants me to sing because they are too low

I think that singing is 1) mostly for boys, 2) mostly for girls, or 3) just as much for girls as for boys

CP

Some adults in my family sing in a choir.

I belong to a choir.

In choir, it is important for the choir teacher to explain all about the notes of a song before everyone starts to sing.

I would want to be in choir in high school even if I didn't plan to have a job as a singer or musician when I grow up.

As one of my after school or Saturday activities, I might choose to sing in a choir.

Choir is as important as other classes like science, math, or reading.

I want to be in choir because my family wants me to sing in choir.

I don't want to be in choir because it's a problem for me to get to choir practice.

It is important for people in choir to like the choir teacher.

I don't want to be in choir because I don't like to sing.

I want to be in choir because my friends are in it.
 Do you want to sing in a choir, or, if you do sing in a choir, do you want to keep on singing in choir?
 I don't want to be in choir because I don't know anyone in choir.
 I don't want to be in choir because I don't know the choir teacher or don't like the choir teacher.
 I don't want to be in choir because my friends think choir is dumb.
 I don't want to be in choir because my family doesn't like for me to be in choir.
 I want to be in choir because I love to sing.

OSE

Someone in my family likes for me to sing songs.
 Someone in my family thinks that I'm a good singer.
 When I'm at home, someone in my family likes to listen to me sing songs.
 Someone in my family sang to me when I was younger.
 I sing songs with some of my family.

SP

I'm a good singer.
 I'm as good a singer as most people in my class.
 I sing as well as most people in my family.
 Various voice changes cause my voice to feel "tired" or uncomfortable
 Various voice changes have not affected my ability to sing
 I do not experience any vocal discomfort because of my voice changing
 There are times when I can't sing high because of my voice changing
 I can't sing all the notes my teacher wants me to sing because they are too high
 I am able to sing all the notes my teacher wants me to sing without difficulty or voice cracking
 I don't want to sing because my voice is changing
 I'm a good singer even though I am going through some voice changes
 My voice sounds "breathy" or "hoarse" sometimes when I sing
 All the notes my teacher asks me to sing are comfortable to sing
 I'm a good singer, but singing has become to feel different than it did in elementary school

CSA

I like it when we listen to the music teacher tell us all about the notes of a song before we start to sing.
 In music class, I like to clap the rhythm of the words while we sing a song.
 I get bored when the teacher explains to us all about the notes of the songs we sing.
 In music class, I like it when we sing songs from the song books.
 In music class, I like it most when 1) we sing songs with the piano, 2) we sing songs with CD tracks, or
 3) we sing songs without piano or CD tracks.
 In music class, I like it most when 1) I get to play guitar and sing, 2) I get to play ukulele and sing, or 3) I get to play drums
 and sing.
 The singing games I like best in music class are 1) the ones where we get up and sing dance and move around the room or 2)
 the ones where we sit or stand at our places and sing and do motions.
 The songs in our song books are 1) too high and hard to sing, 2) too low and hard to sing,
 or 3) just right and comfortable to sing.
 I learn a song better when 1) I sing each little part after the teacher, like an echo,
 or 2) I sing along with the whole song over and over.

Check Point**

We have school lunch at nine o'clock in the morning.

FQ***

Do you go to music class every day of the week?
 Do you like to sing?

Note. "SI" indicates singing interest, "OSE" indicates out-of-school singing experiences, "CSA" indicates classroom singing activities, "SP" indicates self-perceptions of singing, and "CP" indicated choral participation

** The check point statement was used to ensure students were reading the questions carefully and answering truthfully. Before the questionnaire, students were made aware that there was a check point question but not told the specific question.

*** The "FQ" indicates a forced question. The first question served as a comparison question in order to determine different scheduling practices of each middle school. The second forced question was used to collect general attitudes about singing.

An *a priori* power analysis was performed to calculate the number of subjects needed to have sufficient power to detect effect sizes as statistically significant. After calculating Cronbach's alpha on items with the same scale, all items on the adapted questionnaire had a high level of internal consistency (48 items, $\alpha = .89$). The five categories of the measurement tool were also tested for internal consistency using Cronbach's alpha. The five subscales are Singing Interest (10 items, $\alpha = .692$); Choir Participation (16 items, $\alpha = .677$); Classroom Singing Activities (4 items, $\alpha = .647$); Self-Perceptions of Singing Skill (14 items, $\alpha = .819$); Out-of-School Singing Experiences (3 items, $\alpha = .597$). Data from all categories, except classroom singing activities, were calculated into means and standard deviations. A chi square analysis was used on the items in the classroom singing activities category.

Statistical analyses were performed using a two-way ANOVA for non-repeated measures using instruction groups and gender as the main effects. A 4 X 2 design is used to explore the effects of the two independent variables on adolescents' attitudes toward vocal music. Although there are some participants that may be enrolled in one or more music courses, this is accounted for in the factorial design making the groups between-subjects in nature. Thus, the null hypothesis for instructional groups is constructed as $H_0: \mu_{a1} = \mu_{a2} = \mu_{a3} = \mu_{a4}$ implying the main effect of instructional groups across levels of gender is equal. The null hypothesis for gender is constructed as $H_0: \mu_{b1} = \mu_{b2} = \mu_{ab} = \mu_{b4}$ implying the main effect of gender groups across levels of instruction groups is equal. The null hypothesis of the interaction assumes that the simple main effects of instructional groups across levels of gender (and vice versa) has no interaction.

Data collection. The twelve sites, utilized for the quantitative strand of study, had classes offered in band, orchestra, and vocal music that met for 50 minutes per day. They also had extracurricular choral ensembles that met for 45 minutes to an hour once a week. To administer

the questionnaire, the school district created a “jump code” or an automatic link to the questionnaire that students could easily access from the district’s website. All eighth grade students had access to a Chromebook provided by the district. The researcher was on site to answer any questions and offset unexpected problems during the data collection process.

Research questions. 1) *Is there a difference in the attitudes toward singing among eighth grade students in four treatment conditions (curricular vocal music instruction, curricular instrumental ensemble instruction, curricular music instruction and extracurricular choral ensemble, curricular instrumental and vocal instruction) as measured by an adapted Mizener (1993) singing interest survey?* 2) *Is there a difference in attitudes toward singing among eighth grade students based on gender as measured by an adapted Mizener (1993) singing interest survey?* 3) *Is there an interaction between instruction groups and gender among eighth grade students as measured by an adapted Mizener (1993) singing interest survey?*

These research questions aimed to discover whether or not 1) a difference existed in four instructional groups across gender, 2) a difference existed in gender across four instructional groups, or 3) an interaction existed in instructional groups across levels of gender (and vice versa) in the attitudes toward singing in eighth grade students. In order to determine the effects, a two-way ANOVA was run on the four of the five questionnaire categories and a series of chi-square tests were run on the category classroom singing activities. The answers to these items were converted from a four-point Likert scale to interval data where true=1, not true=2, sometimes=3, and not sure=4 for analysis purposes. The following is a report of the results from these categories.

Singing Interest. The collected sample mean and standard deviation of scores were calculated by the computer program SPSS statistical software using a two-way analysis of

variance. The summary table of group means and standard deviations for singing interest is provided in Table 3. The ANOVA summary table (see Table 4) suggests that there is a significant difference in at least one of the instructional groups and between gender groups.

Table 3

Instructional Group means and standard deviations by gender for singing interest

Group	M	SD	N
Curricular Vocal Music Instruction (CVMI)	2.09	.04	145
Curricular Instrumental Ensemble (CIEI)	2.18	.02	301
Curricular Music & Extracurricular (CMEC)	1.75	.05	72
Curricular Instrumental & Vocal (CIVI)	1.83	.07	44

Table 4

ANOVA summary table for singing interest

Source	SS	df	MS	F
Instruction Groups	12.76	3	4.25	18.72*
Gender	2.53	1	2.53	11.16*
Instruction Groups X Gender	.03	3	.013	.05
Within groups	125.92	554	.111	
Total	146.23	561		

Note. $R^2_{Adj} = .12$, $p < .05$

A Bonferroni post hoc multiple comparison of means revealed significant ($p = .008$) mean differences between CVMI ($M = 2.05$, $SD = .51$) and the three other instructional groups. It also revealed significant mean differences in CIEI ($M = 2.19$, $SD = .46$) and the three other instructional groups. Upon further investigation, singing interest correlated positively ($r = .197$) with CVMI and negatively with band ($r = -0.062$) and orchestra ($r = -0.033$). There were not statistically significant mean differences for CMEC and CIVI.

Significant differences in gender displayed male participants had a higher singing interest average ($M = 2.05$, $SD = .04$) than female participants ($M = 1.87$, $SD = .03$). Focusing on the changing voice, an investigation into singing interest revealed the majority of both male and

female students believe that when voices start to change one should keep singing. When prompted to answer “I think when a girl’s voice starts to change, she should continue to sing”, 54.2% (n=141) of male students and 71.5% (n=241) of female students answered true. Also, students responded to “I think when a boy’s voice starts to change, he should continue to sing”, 49.6% (n=129) of male students and 68.5% (n=231) of female students answered true.

Choral Participation. The summary table of group means and standard deviations for choral participation is provided in Table 5. The ANOVA summary table (see Table 6) suggests that there is a significant difference in at least one of the instructional groups ($F_{3,554} = 8.21$, $p < .05$). The CIEI group had the highest average ($M = 2.19$, $SD = .01$), closely followed by the CVMI group ($M = 2.17$, $SD .03$), the CIVI ($M = 2.07$, $SD = .05$), and the CMEC ($M = 1.98$, $SD = .04$).

Table 5

Instructional Group means and standard deviations by gender for choral participation

Group	M	SD	N
Curricular Vocal Music Instruction	2.17	.03	145
Curricular Instrumental Ensemble	2.19	.01	301
Curricular Music & Extracurricular	1.98	.04	72
Curricular Instrumental & Vocal	2.07	.05	44

Table 6

ANOVA summary table for choral participation

Source	SS	df	MS	F
Instruction Groups	2.733	3	.911	8.21*
Gender	.007	1	.007	.06
Instruction Groups X Gender	.445	3	.148	1.33
Within groups	61.43	554	.111	
Total	64.69	561		

Note. $R^2_{Adj} = .038$, $p < .05$

A Bonferroni post hoc multiple comparison of means revealed significant ($p = .008$) mean differences between CVMI ($M=2.05$, $SD = .51$) and CMEC ($M=1.73$, $SD = .42$). Also, there was a significant mean difference between CMEC ($M=1.73$, $SD = .42$) and CIEI ($M=2.19$, $SD = .46$). There were not statistically significant mean differences for choral participation in the other groups.

Out of school singing experiences. The questionnaire items in this category had two different scales. Three items had the four-point scale (i.e., true, not true, sometimes, not sure) and two items were forced questions (i.e. yes or no). A two-way ANOVA was used to identify any differences for this category using the items on the four-point scale. The summary table of group means and standard deviations for out of school singing experiences is provided in Table 7. The ANOVA summary table (see Table 8) suggests that there is a significant difference in at least one of the instructional groups ($F_{3,554} = 12.89$, $p < .05$). CIEI ($M=2.38$, $SD=.04$) reported a higher mean average than the other three groups (see Table 7). Much like the previous categories, CVMI followed closely behind its instrumental counterpart ($M=2.27$, $SD = .072$) while the other two categories CMEC ($M=1.82$, $SD = .096$) and CIVI ($M=1.88$, $SD = .12$) were closer to the lower bound mean scores. A Bonferroni correction was applied and displayed a significant difference between CVMI and CMEC, CIEI and CMEC, and CIEI and CIVI.

Table 7
Group means and standard deviations by gender for out of school singing experiences

Group	M	SD	N
Curricular Vocal Music Instruction	2.27	.07	145
Curricular Instrumental Ensemble	2.38	.04	301
Curricular Music & Extracurricular	1.82	.09	72
Curricular Instrumental & Vocal	1.88	.12	44

Table 8
ANOVA summary table for out of school singing experiences

Source	SS	df	MS	F
Instruction Groups	23.73	3	7.91	12.89*
Gender	.026	1	.026	.04
Instruction Groups X Gender	1.79	3	.598	.97
Within groups	339.82	554	.974	
Total	365.61	561		

Note. $R^2_{Adj}=.059$, $p < .05$

Crosstabulations for gender were conducted on two items from this category to investigate if participants had family member that sang to them during infancy and family members that sang with them currently. Further probing for instructional groups was unnecessary due to the nature of the inquiry. These two items were on a “yes” or “no” rating scale. While no causation can be established given the crosstab analyses of these two items, it is worthy to note that more participants answered favorably to “Someone in my family sang to me when I was younger” (see Table 9) than to “I sing songs with some of my family” (see Table 10).

Table 9
“Someone in my family sang to me when I was younger” by gender

	Yes	No	Total
Male	165	95	260
Female	247	90	337
Total	412	185	597

Note: n=597

Table 10
“I sing songs with some of my family” by gender

	Yes	No	Total
Male	97	163	260
Female	191	146	337
Total	288	309	597

Note: n=597

Self-perceptions of singing skill. For this category, participants answered 14 items regarding self-perceptions of singing skill. As previously mentioned, this category possessed the highest internal consistency rating ($\alpha=.819$). With regard to perceived singing skill, this category reflects the significance of the other tests (see Table 12) by displaying a difference in instructional group means ($F_{3,554} = 16.42, p < .05$) where once again the highest average mean (see Table 11) is CIEI ($M=2.52, SD=.03$). A Bonferroni post hoc multiple comparison of means revealed significant ($p = .008$) mean differences between CVMI and CIEI. Significant mean differences were also found in CIEI and the three other instructional groups. This is contradictory with findings in the related literature where instrumental students may not *like to sing* but are confident with their *singing skill* (e.g., Killian and Wayman, 2010).

Table 11
Marginal means for self-perception of singing skill

Group	M	SD	N
Curricular Vocal Music Instruction	2.31	.05	145
Curricular Instrumental Ensemble	2.52	.03	301
Curricular Music & Extracurricular	2.08	.07	72
Curricular Instrumental & Vocal	2.06	.08	44

Table 12
ANOVA summary table for self-perception of singing skill

Source	SS	df	MS	F
Instruction Groups	16.37	3	5.45	16.42*
Gender	.393	1	.39	1.18
Instruction Groups X Gender	.385	3	.12	.38
Within groups	184.06	554	.33	
Total	201.44	561		

Note. $R^2_{Adj}=.075, p < .05$

Although the instrumental group (CIEI) may have a higher means for perceptions of singing skill, when asked to respond to “I’m a good singer” those in more than one music

ensemble had the highest number of true responses (n=63, 54%) when compared to those only in curricular vocal music (n=35, 24%) or curricular instrumental music (n=45, 14%). This is also consistent with the forced question “Do you like to sing” (see Table 13) where participants in curricular music instruction and an extracurricular choral ensemble had the highest frequency of “yes” answers (n=69, 95%) followed by participants in both curricular instrumental and vocal music instruction (n=39, 88%) and then by vocal music participants (n=115, 79%) and instrumental music participants (n=156, 51%).

Table 13
Frequencies for “Do you like to sing” by group

Group	Yes	No	N
Curricular Vocal Music Instruction	115	30	145
Curricular Instrumental Ensemble	156	145	301
Curricular Music & Extracurricular	69	3	72
Curricular Instrumental & Vocal	39	5	44
Total	379	183	562

Classroom singing activities. This category focuses on classroom singing activities. The rationale for this category being various classroom singing activities at the middle level are received more favorably than others and can contribute to the overall attitude of singing experiences (Mizener, 1993). Because of the modest internal consistency along with the limited number of items on the same scale within this category, a series of non-parametric tests were conducted on the total number of items within this category. These tests were used to determine the preference of classroom singing activities across instructional groups. Please refer to Table 2 for a detailed list of items for this category.

A series of chi square tests were conducted on the nine items in this category. Not all questions were on the same rating scale. Some items used a four-point scale while others used a multiple-choice response. The information for the four-point scale items were placed on a 4

(group) X 4 (scale) contingency table and the others on a 4 (group) X 3 (multiple choice) contingency table. There was one multiple choice item on a 4 X 2 contingency table. The data on the tables below display only the total raw data for those items rendering an acceptable Cramer's V of $\geq .20$ (see Tables 14, 15, 16).

Table 14

Contingency table for multiple choice item in classroom singing activities

In music class, I like it most when...	Piano	CD tracks	Acapella	Total
Curricular Vocal	94	35	16	145
Curricular Instrumental	115	128	58	301
Curricular music & Extracurricular Ens.	52	11	9	72
Curricular Instrumental & Vocal	30	7	7	44
Total	291	181	90	562

Note. χ^2 (6, n=562) = 51.28, $p < .001$, Cramer's V .214

Table 15

Contingency table for "In music class, I like it when we sing songs from the songbooks"

	True	Not True	Sometimes	Not Sure	Total
Curricular Vocal	31	37	64	13	145
Curricular Instrumental	25	157	61	58	301
Curricular music & Extracurricular Ens.	22	9	29	12	72
Curricular Instrumental & Vocal	9	9	22	4	44
Total	87	212	176	87	562

Note. χ^2 (9, n=562) = 96.61, $p < .001$, Cramer's V .239

Table 16

Contingency table for “I like it when we listen to the music teacher tell us all about the notes of a song before we start to sing”

	True	Not True	Sometimes	Not Sure	Total
Curricular Vocal	35	54	43	13	145
Curricular Instrumental	31	125	58	87	301
Curricular music & Extracurricular Ens.	13	16	40	3	72
Curricular Instrumental & Vocal	7	12	22	3	44
Total	86	207	163	106	562

Note. $\chi^2 (9, n=562) = 89.05, p < .001, \text{Cramer's } V .230$

The item “In music class I like it most when 1) we sing songs with the piano, 2) we sing songs with CD tracks, or 3) we sing songs without piano or CD tracks showed a significant difference among the four groups $\chi^2 (6, n=562) = 51.28, p < .001$, showing that all groups preferred singing songs with the piano. A significance was also found in group preference for singing from the songbooks $\chi^2 (9, n=562) = 96.61, p < .001$. Participants expressed an overall dislike for this classroom activity. Finally, when participants responded to listening to the teacher explaining the notes of a song before singing, a significance was found $\chi^2 (9, n=562) = 89.05, p < .001$, suggesting students would rather sing the song before listening to instructor rhetoric. All of these items had a moderate relationship (Cramer’s V of .20-.25) between variables.

Quantitative Summary

This study incorporated a variety of statistical analyses to investigate the quantitative data collected for this research project. The results from this study indicated a significant difference in the curricular instrumental group in four categories: Singing Interest, Choral Participation, Self-Perception of Singing Skill, and Out of School Singing Experiences. Additionally, a significant

gender difference in the singing interest category showed male participants had a higher singing interest average than female participants. There were no interactions between instructional groups and gender. Further investigation into students' attitudes toward the changing voice within the singing interest category showed a majority of students believe that when a boy's or girl's voice starts to change he or she should keep singing. Non-parametric tests indicated an overall positive attitude toward singing (n=379, 67%) amongst middle school eighth grade music students. Out of school singing experiences indicated a higher frequency of students stating someone in their family sang to them when they were younger than those who said they currently sing with someone in their family. Finally, a series of chi square analyses on classroom singing activities showed a preference for being accompanied by a piano while singing and a chance to sing a song before listening to a teacher's explanation of the music. Other significant findings in this category indicate student preference for singing songs outside of preorganized songbooks.

Qualitative Results

Data for the qualitative portion of the study were obtained through a group interview with students (n=7). Interview protocol followed procedures outlined by Creswell (2016) where predetermined interview questions were established along with interview date, time, location, and seating arrangements. I conducted these interviews for the purpose of using participants' words to engage school communities concerning issues related to singing in middle school and how voice maturation stage may or may not play a role in students' perceptions of their singing experiences.

A general qualitative methodology was selected for this portion of the project that most resembled a case study. This methodology was specifically selected to gain an in-depth understanding of cases within a bounded system (Creswell & Poth, 2017; Stake, 2010; Thomas,

2016). Results may not be generalized to a population but will render "...a rich picture and... analytical insights..." (Thomas, 2016, p. 23) on a purposefully selected middle school within the district. Purposeful selection was based on a site that demonstrates an overall positive attitude toward singing. This site was determined by several defining characteristics: 1) school has sustained over 40% of the student body participation rate in vocal music for over 10 years; 2) teacher has been recognized in periodicals for his effectiveness as the "pied piper" of music teachers (Lee, 2008) as well as collaborated in writing the vocal music curriculum for the district and; 3) program has the largest 8th grade curricular choir, where more students elect to take the course than are registered without choice.

Overview and participants. Participants for the case study were selected from one of the Midwestern middle schools in the quantitative study. This site was determined by certain defining characteristics outlined in the previous paragraph. Out of the 49 quantitative participants in 8th grade choir, 21 participants volunteered for the qualitative portion of the study. I chose to invite all of these participants to a group interview. From these invitations, 7 students returned parent/guardian consent forms. Of the 7 students (f=5, m=2), 3 female students (Samantha, Susan and Lisa) were in stage IIB (postmenarcheal), 2 female students (Emily and Felicity) were in stage III, 1 male student was in stage III (Jason) and the other male student was in stage IV (Bruce) (see figure 3).

Data collection procedures. Data were collected in the form of semistructured interviews where questions were structured yet flexible and asked to elicit specific data from all respondents (Merriam & Tisdell, 2016; Stake, 2010). Additionally, a brief range assessment was administered to check the voice maturation stage of each participant. Exploring responses from adolescents with overall positive perceptions of singing in various stages of voice maturation

will allow for comparisons of similarities and differences of singing experiences. The purpose of this method is to collect data on behavior, feelings, or worldviews that we cannot observe (Merriam & Tisdell, 2016). Although a case study generally uses several points of data (Creswell, 2016; Merriam & Tisdell, 2016; Thomas, 2016), interviews were the primary form of data collection for the qualitative portion of this study.

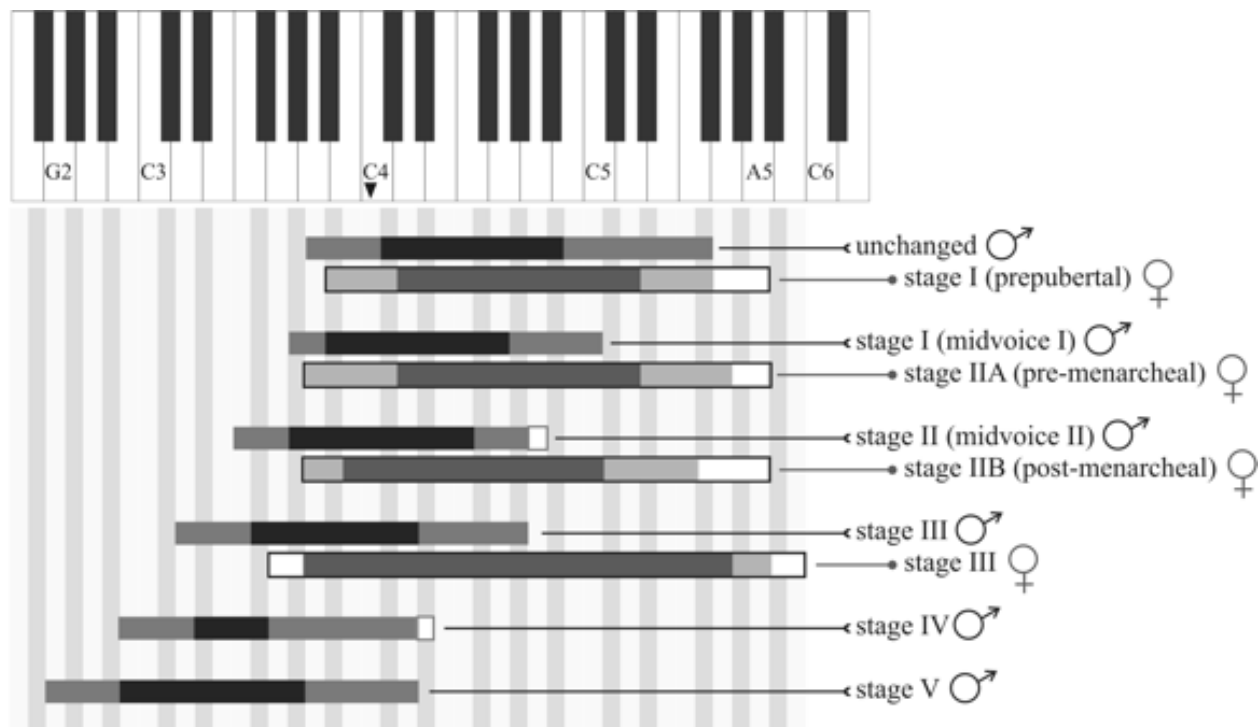


Figure 3. Stages of singing voice change for females (based on Gackle, 2000) and males (based on Cooksey, 2000). This figure illustrates the voice changes stages of adolescents and is reproduced from Welch, 2016 by permission

Twelve interview questions were used for this study to elicit specific responses about singing experiences during middle school: 1) I understand that you are enrolled in 8th Grade Choir, tell me about your experience having choir everyday instead of once or twice a week?; 2) What motivated you to sing in middle school?; 3) Tell me, using lots of details, about the kinds of things you have done outside of class to improve your vocal music education?; 4) How do you

perceive your participation in class?; 5) Tell me about a time when something you learned had a positive effect on your decision to keep singing in middle school.; 6) What kinds of things have changed about your voice since you have been in middle school?; 7) Have you ever talked to anyone about your changing voice?; 8) Tell me about your current interactions with your friends not enrolled in choir? What do they think of you singing at school?; 9) Tell me what you do during 8th grade choir.; 10) What other things do you do when you feel like singing?; 11) What kinds of challenges (barriers) do you experience when you are singing in class? When you are singing for fun?; 12) What else would you like to share about your singing experiencing in middle school?

Range assessments were given individually to determine each participant's voice maturation stage. The procedure used for the assessment mirrors that of Cooksey (2000) and Gackle (2000). Participants were asked to count backward from 20 to 1 to find the fundamental speaking pitch. From that fundamental, participants were asked to sing a descending pattern (*sol, fa, mi, re, do*) on the neutral syllable [lu] as high as they could sing while I played the pitches on the piano. They repeated the pattern from the fundamental pitch going the opposite direction to the lowest pitch that they could sing (Killiam & Wayman, 2010). To increase confidence, I modeled the exercise for the participant and sang one repetition of the pattern with the participant.

The interview and range assessments took place in the morning during first period in a private upstairs classroom. Over the course of one day within one class period, the group interview lasted 41 minutes and the seven range assessments lasted approximately three minutes per assessment for a total of 21 minutes. An iPad placed in a corner of the classroom recorded the interview. In the first period interview, classroom chairs were set up in a horse shoe

formation to facilitate an interactive conversation between respondents (Stake, 2010). After the interviews and assessments, participants were thanked for their time and sent back to their classroom. Once interviews were transcribed and coded, I returned to the school and completed a member check with each participant. The interview protocol form can be found in Appendix I.

Data analysis. Following interview transcription, data were analyzed by hand coding each text. Words of the participants, or in vivo codes, were used as much as possible to create themes. Possible quotes throughout the transcript were noted by jotting the word QUOTE by the passage. These quotes were collected to make the themes “come alive with practical vitality” (Creswell, 2016, p. 156). Other code jottings were marked in the left-hand margin of the transcript. A full transcript as well as excerpts and coded samples can be found in Appendices J and K.

Upon completion of hand codes (n=75) and quotes in the transcript, similar codes were collapsed into twenty corresponding codes and then collapsed into four overall themes: First period, Singing, Teacher, and At Home. For example, the codes ‘not like other middle schools’, ‘take it up another level’, and ‘keep pushing on it’ were combined in to the collapsed code high expectations and then collapsed again to get the overall common theme of teacher. This grouping process helped to eliminate redundancy and overlapping of codes (Creswell, 2016). Unique codes also emerged (modal music, middle school is easy, hate piano lessons) that did not fit within the four themes. These are labeled floating codes (i.e., Fitzpatrick, 2011). The spreadsheets with all the codes (n=75) may be found in Appendix L. To summarize the themes that emerged from this analysis, a cross-case themes and codes is found in figure 4.

Credibility and trustworthiness strategies. Though qualitative research can never quite be generalized to the public, there are strategies that can be used to increase the validity and

reliability of the study. Several measures were taken to establish trustworthiness: triangulation, member checking and peer debriefing. For reliability, an experienced qualitative researcher reviewed the interview questions for reliability. I also collected a variety of perspectives on singing during the interview process to build evidence from different sources (Creswell, 2016). After the interviews were transcribed and coded, I returned to the school and had the participants read through the transcripts for member checking. After the qualitative portion of the study had been finalized, I asked a peer who was familiar with the research to write a report on the strengths and weaknesses of the study for peer debriefing (Creswell, 2016). Finally, a reflexivity statement is included to present my past experiences to explain how I might affect and be affected by the qualitative process (Probst & Berenson, 2014).

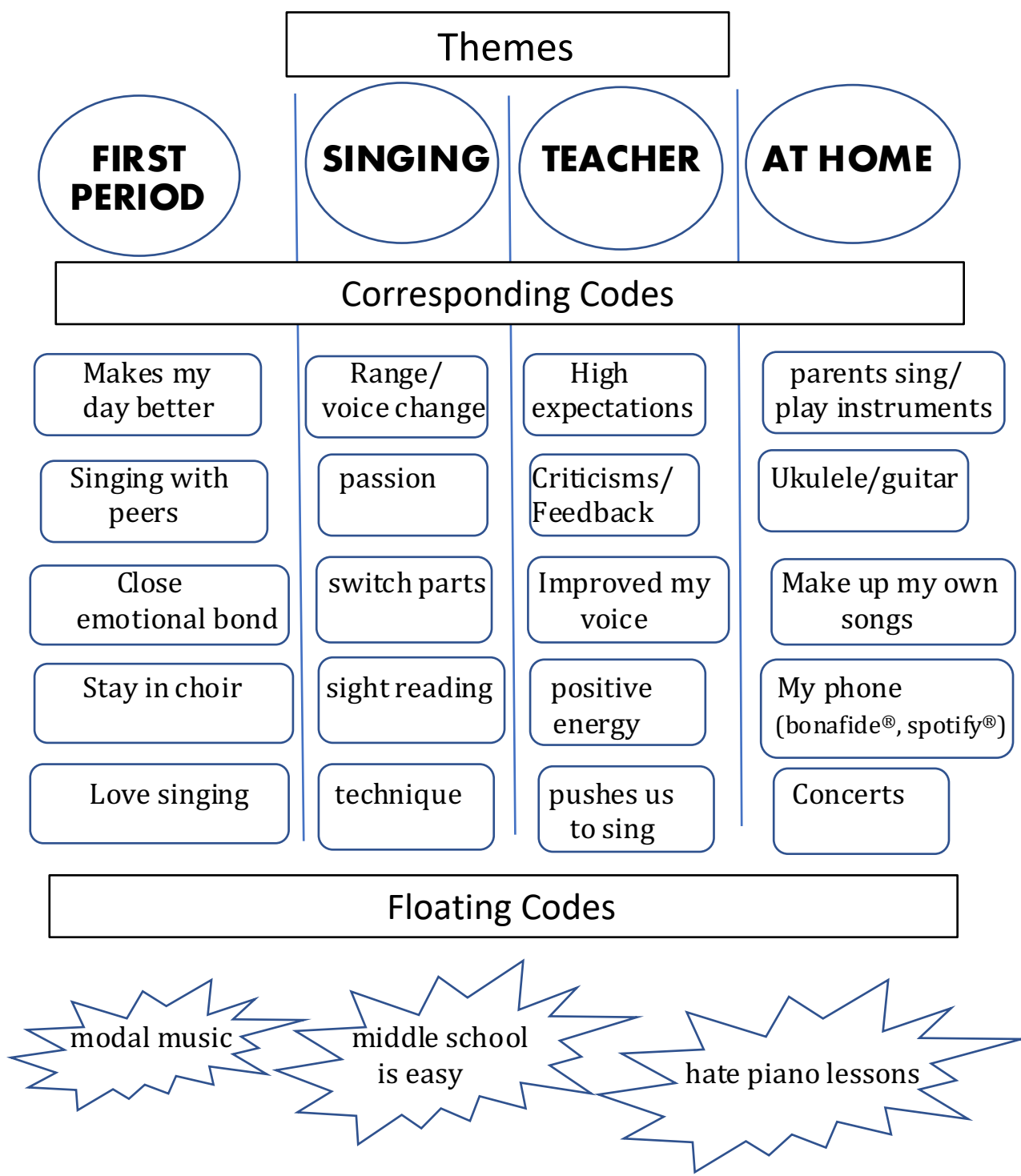


Figure 4. Cross-case code and corresponding themes. There are four themes and twenty codes that emerged through data analysis. Unique codes also emerged that did not fit within the four themes. These are labeled floating codes (i.e. Fitzpatrick, 2011).

Reflexivity. As a former teacher in the selected Midwestern school district, I am in a unique position to provide an “in-depth reflective process that will...challenge assumptions, reveal theoretical orientations, uncover social and cultural biases, and call personal behaviors into question” (Creswell, 2016, p. 141). As a co-creator of the middle school vocal music curriculum in the participating Midwestern school district, I have very definite opinions regarding the necessity of a carefully sequenced vocal curriculum for eighth grade students to achieve levels of proficiency in their vocal development.

Due to my past experiences, this study is intrinsically valuable and, accordingly, these values must be presented alongside research findings to inform readers of my interest in the subject and what I have to gain from the results of the research (Creswell, 2013). This reflexive process will aid in the prevention of skewed interview transcriptions. By admitting my bias and past experience, the reader may also be inspired to reflect on shared experiences, even if the study may not mirror the reader’s current situation (Merriam & Tisdell, 2016). Stating past experience, reflecting on past experience during the data collection process, and reaffirming these reflections and experiences after themes appear from the analysis process will result in a valid and reliable qualitative process of this mixed methods study.

Qualitative research questions. A central research question guides this qualitative inquiry: How do middle school students in various stages of vocal maturation perceive vocal music as a part of the 8th grade middle school curriculum? It is accompanied by seven sub-questions: a) What motivates students to participate in either vocal music, instrumental music, or both during the school day?; b) How do friends and family influence middle level student perspectives of vocal music?; c) How do administrators and teachers influence middle level student perspectives of vocal music?; d) How do student attitudes toward vocal music compare

to student attitudes toward other subjects?; e) How are students educated about their changing voices in the vocal music classroom?; f) How do students learn about changing voices in other classrooms outside of vocal music?; and g) How do middle level students use information from other resources (i.e., peers, family, social media) to form their perceptions of the changing voice?

Qualitative Findings

As a result of this qualitative inquiry, four primary themes emerged: first period, singing, teacher, and at home. The themes are presented and discussed here with supportive quotes from the respondents. These quotes will be labeled by respondent voice mutation stage. As discussed above, there are 4 female respondents in stage IIB (postmenarcheal), 2 female respondents were in stage III, 1 male respondent in stage III and 1 male respondent in stage IV. Additionally, my own insights as a participant observer will be provided where appropriate.

Theme 1: First period. The group interview began with the students sharing their lived experiences in a daily choir class. Until this point in school, students at the middle level in this Midwestern school district are not offered a daily curricular offering of vocal music. Every student regardless of voice maturation stage said they “loved singing” and coming to choir in the morning “makes my day better.” Students in the stage IIB vocal mutation stage tended to say that first period was a way to “begin my day with a fun class” and that they enjoyed singing with a “cool group of kids”. One respondent replied:

We’ve all become a kind of chorus family and it’s really a fun place to be...I love singing and getting to sing everyday, it just makes my day better and I just love starting my day off by singing and being with a cool group of kids.

Another respondent in this category talked about first period as an outlet from the rest of her school day: “Just like when I walk into school and – or when I don’t have school, I’m like ‘crap I

missed chorus first period' because it always makes my day...and it's my outlet." Emily in Stage III spoke of first period as something she really enjoyed and "the rest of my day I have to do like actual stuff." She added that the students in first period have a "close emotional bond" and when it came time for their last concert, she knew there would be a lot of crying.

First period resurfaced at the end of the interview when respondents started to discuss the importance of remaining in choir. The male respondent in stage IV of vocal mutation wanted to plead with fifth graders to keep participating in middle school. The following interview excerpt illustrates how others in the group also responded to his advice:

Bruce (Stage IV): If any fifth graders...[are] like 'man I don't want to play music anymore. I'm not going to have time in middle school. Don't they give you like a bunch more homework?' And it's like no!

ALL: NO! They give you less homework!

Bruce: Please please please do music...I know people in my family who are like 'Yeah I quit music in middle school and I kinda wished I would have stayed'

Samantha (Stage IIB): You have to stay in it. It will impact you so much.

Emily (Stage III): Middle school is so easy like choir does not get in the way.

Lisa (Stage IIB): Yeah choir does not get in the way but it like gives you a breather from all the other school work.

Bruce: There are times when choir might actually save your life. Just stay in it cause it makes such an impact on your life...If you aren't in a choir right now, join. If you aren't playing an instrument right now, do it if you can afford it. But just do something musical because it's such an amazing experience and I couldn't imagine anyone missing out on it.

Theme 2: Singing. Many students identified vocal technique as being an important part of singing. Bruce (Stage IV) mentioned correct formation of vowels and clear consonant sounds when referencing two foreign language pieces the choir performed this semester. He also mentioned recording himself to evaluate his dynamics and diction. Others mentioned the importance of practicing choir music before the concert to find out “what I can improve on”. Sight-reading was mentioned as a skill developed in both choral and instrumental music classrooms. Respondents mentioned improving sight-reading skills by taking instrumental lessons in violin, viola, and piano. Others mentioned practicing sight-reading skills outside of class in other choral ensembles or while singing hymns or “bible chant”. An unusual code produced from the discussion of sight-reading was a desire to improve sight-reading skills while singing modal music.

While discussing the changes in their voices during middle school, most students identified changes in their range. Emily (Stage III) commented that her range is a lot better because of her private voice instructor. Felicity, in the same voice mutation stage, talked about how her range has “gotten bigger since elementary school” remarking her voice sounds “lower in her head.” Others mentioned voice cracks, especially during the range assessment. Lisa (Stage IIB) mentioned that her voice may crack “10 times” during the assessment because she is sick. Trouble matching pitch was referred to as a range issue, especially for “guys”. Both male respondents mentioned this in association with range, but only Jason (Stage III) mentioned that he had trouble matching pitch. Bruce (Stage IV) mentioned that:

“...a lot of guys really struggle to reproduce a given pitch. And so a lot of times, especially in the tenor section, we have about one maybe two singers who sing the actual part and then everyone else is just sort of giving this little murmur underneath...”.

Susan in stage IIB attributed improvement in her range to the fact choir members are not allowed to sing the same part on every song:

“I feel like one of the reasons that all our ranges have gotten pretty big is because [teacher 1] doesn’t pin point us on one section...if you’re an alto in morning choir you will...be a soprano in class”.

Jason (Stage III) also attributes their range improvement to singing more than one part “I can sing both tenor and bass...I can still sing pretty high notes in tenor...but I can also sing the alto page, I guess.”

Voice change was also reported by both male and female participants in conjunction with singing. When mentioning his voice change, Jason (Stage III) began to blush and smile as he said: “From starting in sixth grade having such a high voice to having the voice I do now...”.

Bruce, the other male respondent, talked about his voice changing in sixth grade as well stating “I could sing like a low F on the piano and I could only sing up to maybe a C in the middle of the bass clef. Like my voice just when down...”. He went on to describe his voice change as a rollercoaster commenting in fifth grade he was able to sing “...to the top of the scale and out of the treble clef”. Female respondents in the stage IIB category described their voice changes as being able to sing higher but possessing an immature timbre “...just like a kid voice...”. Overall, female respondents equated the ability to sing high as having a “good voice”.

All respondents mentioned a passion for singing. Some compared their passion for singing to their non-singing peers “...kids would be like ‘ew I have to get up and go sing?’ I’d be

like ‘I get to get up and go sing!’It’s always been something I’ve loved and just one of my biggest passions” (Emily, Stage III). Felicity, in the same voice mutation stage, added that she had an older sibling that didn’t like to sing but, unlike her sister, she “knew from elementary school” she had a passion for singing. This same respondent also indicated her intent to pursue singing in a future career.

Theme 3: Teacher. Positive energy, high expectations, and constructive feedback were frequently mentioned when the respondents spoke about their vocal music teacher. Jason (Stage III) spoke of the teacher’s positive energy encouraging him to keep singing through his vocal changing experiences. Others talk about the classroom teacher’s positive energy as something they expect when they walk into class: “I know I can come to chorus and...there’s always positive energy”. Along with this positive energy, students mention their classroom teacher possesses high expectations for every classroom activity. Again, Jason spoke about his teacher as having higher expectations than teachers from other middle schools “Most middle schools just like expect ‘oh you can sing this at a pretty good volume’ he’s like, ‘can we take it up another level?’”. Susan (Stage IIB) supported his claim by saying “he has higher expectations for us”.

Criticism (in vivo code) or constructive feedback is discussed as an establishment of trustworthiness of the classroom teacher as well as an admirable quality. Emily (Stage III) talks about “really liking” criticism because she “can get better”. Samantha (Stage IIB) mentions criticism as something that “...helps you to know, this is what...you did wrong...”. Bruce (Stage IV) perceives criticism as a trustworthy quality “so rather than thinking ‘oh I don’t really even have to try in this class...’ it feels more like ‘oh wow, I actually have THAT to live up to’”.

Many respondents gave credit to their classroom teacher for improving their voice and “pushing” them to sing. The male respondents both discussed how the classroom teacher

encourages male students in the choir, Bruce (Stage IV) added "...he really pushes guys to sing and...I feel like that's a thing that a lot of other schools don't do." An unexpected code in associating with "pushing" guys to sing was the mention of scheduling extra practice time with the guys due to "sports getting in the way." A female respondent talks about "pushing" students to sing a piece in a certain way. In this sense, "pushing" is being used for the teacher's relentlessness when it comes to learning music correctly.

Students also acknowledge their beloved elementary school music teacher as being someone who improved their singing voice. Encouragement from their elementary school teacher influenced their decision to continue singing in middle school. Jason (Stage III) said that his elementary school teacher encouraged him to participate in the summer music camp at the middle school. While Bruce (Stage IV) mentioned that his elementary music teacher got him through his "...worst home experience." Students mentioned wanting to conclude the interview so they could go over and visit their elementary school music teacher before returning to class.

Theme 4: At home. The second interview question "what motivated you to sing in middle school?", prompted a discussion about life at home and musical influences from family members. Respondents explained that they sing with a parent or siblings to favorite rock bands or musicals. Some students discussed their initial exposure to live music being from accompanying their parents to their siblings' or cousins' music concerts at the middle and high school levels. A few mentioned having parents who played musical instruments in middle and high school.

Two girls mentioned singing by themselves at home. Susan (Stage IIB) mentioned playing and singing the guitar like an “angsty teenager”. Two female (IIB) respondents mentioned composing songs with a guitar or ukulele. They both secretly hoped their compositions would be discovered by the Ellen DeGeneres show. Another way respondents enjoyed singing at home was by listening to their phone, especially using two specific apps (bonafide® & spotify®). Susan was adamant about having the bonafide® app on her phone before taking a school trip, otherwise “...if I don’t have music on the plane, I don’t even want to go”.

Qualitative Summary

As a result of this exploration, four themes emerged to create deeper understandings on how middle school students in various stages of vocal maturation perceive vocal music as a part of the 8th grade middle school curriculum. These four themes (first period, singing, teacher, at home) are similar to the already established five categories (choral participation, singing interest, self-perceptions of singing skill, out-of-school singing experiences, and classroom singing activities) of the quantitative portion of the study. In the next section, I will integrate the data from both the quantitative and qualitative strands to “generate inference grounded in both sets of results” (Plano Clark & Ivankova, 2016, p. 110).

Mixed Methods Results

Integration. Integration of data is a unique characteristic of mixed methods research (Creswell & Plano Clark, 2018). In this convergent mixed method study, qualitative and quantitative data were collected separately and purposefully integrated to offset the strengths and weaknesses of using only one method (Plano Clark & Ivankova, 2016). In order to understand the ways in which the survey and interview data align with one another, I created a data

convergence table (Fitzpatrick, 2011) to “...more specifically address the mixing of the data...” and to label data and themes that “confirm or contradict” one another (Fitzpatrick, 2011, p. 236). Two more labels were used to compare both data sets: mixed and enhance (Fitzpatrick, 2011). These labels were used for convergent data that both confirmed and contradicted findings (mixed) or neither confirmed or contradicted findings but offered a value added component (enhance). Table 17 displays a condensed side by side comparison of quantitative and qualitative data in addition to the alignment of each comparison. A complete summary of data convergence can be found in Appendix M.

Table 17

A condensed data convergence table by quantitative category item and frequency

SI	Code/Theme	Alignment
I like to sing by myself in music class. (Not True, n=322, 53.9%)	Love Singing	Contradict
When I hear songs on the radio, I enjoy singing along. (True, n=364, 61%)	My Phone	Confirm
It is fun to sing with a few friends or people in my family. (True, n=274, 45.9)	Parents Sing	Confirm
I never seek out opportunities to sing in middle school (True, n=243, 40.7)	Stay in choir	Contradict
I can't sing all the notes my teacher wants me to sing because they are too low (Not True, n=282, 47.2%)	Range/Voice Change	Mixed
I think that singing is 1) mostly for boys, 2) mostly for girls, or 3) just as much for girls as for boys (boys & girls, n=495, 82.9%)	Stay in choir	Confirm
CP		
Some adults in my family sing in a choir. (Not True, n=454, 76%)	Parents Sing	Mixed
I belong to a choir. (Not True, n=361, 60.5%)	Stay in Choir	Contradict
In choir, it is important for the choir teacher to explain all about the notes of a song before everyone starts to sing. (Sometimes, n=229, 38.4%)	Pushes Us to Sing/ High Expectations	Enhance
I would want to be in choir in high school even if I didn't plan to have a job as a singer or musician when I grow up. (Not True, n=268, 44.9%)	Stay in choir	Contradict
As one of my after school or Saturday activities, I might choose to sing in a choir. (Not True, n=375, 62.8%)	Makes my day better	Contradict
Choir is as important as other classes like science, math, or reading. (Not True, n=244, 40.9%)	Stay in choir	Enhance
I want to be in choir because I love to sing. (Not True, n=246, 41.2%)	Love Singing	Contradict
OSE		
Someone in my family likes for me to sing songs. (True, n=167, 28%)	Parents sing	Confirm
Someone in my family thinks that I'm a good singer. (True, n=274, 45.9%)	Parents sing	Confirm
When I'm at home, someone in my family likes to listen to me sing songs. (Not True, n=271, 45.4%)	At home	Mixed
Someone in my family sang to me when I was younger. (Yes, n=412, 69%)	Parents sing	Enhance
I sing songs with some of my family. (No, n=309, 51.8%)	Parents sing	Contradict
SP		
I'm a good singer. (Not True, n=179, 30%)	Love singing	Mixed
I'm as good a singer as most people in my class. (Not True, n=197, 33%)	Love singing	Mixed

I sing as well as most people in my family. (True, n=192, 32.2%)	At home	Enhance
Various voice changes cause my voice to feel “tired” or uncomfortable (Sometimes, n=169, 28.3%)	Range/Voice change	Enhance
Various voice changes have not affected my ability to sing (Not True, n=170, 28.5%)	Range/ voice change	Confirm
I’m a good singer, but singing has become to feel different than it did in elementary school (Not True, n=205, 34.3%)	Range/ Voice change	Contradict

CSA

I like it when we listen to the music teacher tell us all about the notes of a song before we start to sing. (Not True, n=222, 37.2%)	Teacher	Enhance
In music class, I like to clap the rhythm of the words while we sing a song. (Not True, n=312, 52.3%)	Teacher	Enhance
I get bored when the teacher explains to us all about the notes of the songs we sing. (Sometimes, n=230, 38.5%)	Teacher	Enhance
In music class, I like it when we sing songs from the song books. (Not True, n=220, 36.9%)	Singing	Enhance
In music class, I like it most when 1) we sing songs with the piano, 2) we sing songs with CD tracks, or 3) we sing songs without piano or CD tracks. (Piano, n=313, 52.4%)	Teacher/At home	Enhance
In music class, I like it most when 1) I get to play guitar and sing, 2) I get to play ukulele and sing, or 3) I get to play drums and sing. (Drums, n=279, 46.7%)	Ukulele/Guitar	Enhance

Themes and the five categories. The convergence process revealed four types of alignment between the qualitative and quantitative data: confirm, contradict, mixed, enhance (Fitzpatrick, 2011). These four types of alignment either confirmed that both sets of data agreed with one another, contradicted or disagreed with one another, mixed by agreeing and disagreeing with one another, or enhanced one another by neither agreeing or disagreeing but bringing a different perspective to both sets of data. This “explicit interrelation” of data will provide a deeper understanding of how the survey and interview data align with one another (Plano Clark & Ivankova, 2016, p. 40).

Confirm. Data confirm that middle school students generally like to sing (n=404, 67.7%), but prefer to sing by themselves (n=341, 57.1%) to songs on their phone or the radio (n=364, 61%). Singing with a few friends or family members was also confirmed as an enjoyable singing experience. During the interview process, two singers talked about witnessing their parents singing: “I’ll come home and my mom’s like cooking dinner...and singing to the Avett

Brothers” (Jason, Stage III) and “...me and my mom will just constantly break out into song.” (Samantha, Stage IIB).

Participants also believe that one should continue to sing during voice mutation but recognize along with the growth of their larynx comes range discrepancies. Singing high is often a problem for students experiencing voice change (n=252, 42.2%): “I used to be able to sing a little bit higher but my voice wasn’t as good” (Susan, IIB) and “...my voice has been like from super high in fifth grade to like lower...” (Jason, Stage III).

Although quantitative data revealed a general dislike for choral ensemble singing amongst quantitative participants (n=246, 41.2%), there was an agreement that it is important for people to like the choir teacher (n=307, 51.4%). Interview questions did not directly reference the classroom teacher but elicited an abundance of teacher effectiveness responses. Participants spoke about both their elementary and middle school teachers having high expectations and positive energy. Emily (stage III) remarked: “I got here and [he] was so supportive and amazing” and Lisa (stage IIB) said: “He has a higher expectation for us”.

Contradict. Despite a majority of quantitative participants agreeing that they like to sing, many did not have the desire to sing in a choral ensemble. In fact, many did not belong to a choir (n=361, 60.5%). When probed for a rationale as to why participants did not want to participate in choir (i.e. no peers in choir, family discouragement, don’t like to sing), participants agreed it was because they did not like to sing (n=246, 41.2%). This is contradictory to several codes that emerged during the interview process. Participants conveyed their love for singing and singing with their peers. Interviews also revealed that not only did choir participation increase musical skill, it also enhanced their school day and created a close emotional bond with other students:

“We’ve all become a kind of chorus family” (Lisa, Stage IIB). One student commented that his improved skill was as a result of daily curricular offerings of choral music.

I really like having choir every day because I feel like I can hone my musical skills better like you know in sixth grade you only had band once a week and I know that even since sixth grade, I have improved exponentially at playing the flute. And so I think that a lot of the reason for that is because now in seventh grade and now in eighth grade, we have band every day. And I notice the same difference in chorus class. I used to sort of just sing and not think much about it but now I definitely feel like I’m consciously thinking when I’m singing a song. “Ok am I having good voice control? Am I staying in tune? Am I having proper vowels?”... So I definitely think it makes you think more about what’s going on rather than just singing just for the sake of singing. (Bruce, Stage IV)

Other contradictions include identification of voice changing experiences. Respondents in the interview talked extensively about changes in their voice from elementary to middle school: “...my range has gotten bigger, like since elementary school...” (Felicity, Stage III); “...in fifth grade, I could sing like to the top of the scale...and all of a sudden in sixth grade , it just dropped all the way down...” (Bruce, Stage IV). Yet, the majority of quantitative participants did not believe singing to feel any different from elementary school (n=205, 34.3%).

Mixed. Data that both confirmed and contradicted one another included music being too high or too low to sing, adults in the family who belonged to a choir, someone at home listening to the participant sing, and being a good singer. Quantitative results show that students did not think notes in choir class are too low (n=282, 47.2%) but do believe some can get too high (n=172, 28.8%). Students in the interview responded to these issues by explaining that they

frequently switch parts during choir class. Respondents who spoke about choral music as being too high or too low also attributed their increase in range to switching parts.

I feel like one of the reasons that all of our ranges have gotten pretty big is because [teacher 1] doesn't pin point us on one section. He'll like say "ok you're going to be an alto this semester and then the next semester you have to be a soprano" because it really opens us up. (Emily, Stage III)

Additional mixed alignments revealed that quantitative participants agreed that adults in their family were not in a choir (n=454, 76%). Respondents reported that some of their parents sang in a choir while others reported their parents were not at all musical. Most respondents spoke favorably about singing at home, but a few had parents who would ask them to stop singing at home: "My dad gets so annoyed because he doesn't sing so he's like "stop!" and we're like "no!" (Lisa, Stage IIB).

Enhanced. Enhanced alignments, or value-added components, can provide multilayered and multifaceted view of the results. For this integration process, the majority of enhanced alignments emerged from the classroom singing activities category of the quantitative data. Questionnaire participants reported to prefer less instruction from the teacher, specifically less explanation of the notes of a song (n=222, 37.2%). Although respondents did not explicitly speak to the teacher and notes of a song, they were quite adamant about their teacher "pushing" them to sing a song correctly with good technique and musicianship. In fact, students expressed a sense of trust between teacher and student due to instructional demands and high expectations from the teacher. This surfaced especially in the interview dialogue concerning criticism: "I like that he gives criticism. It just helps you to know, this is what we—you did wrong, you can improve, here's how to do it" (Susan, Stage IIB). Trustworthiness was brought up by Bruce (Stage IV):

Another thing that it does is it sort of builds more of a trust between teacher and student.

So rather than thinking “oh I don’t really even have to try in this class because he is going to give me a good grade no matter what” no, it feels more like “oh wow. I actually have that I have to live up to

Within the “At Home” emergent theme, respondents discussed singing and playing the guitar and ukulele. A separate composition code came from playing guitar and ukulele at home. Respondents even discussed submitting their compositions to the Ellen DeGeneres show: “You could have gone on the Ellen show and written a new song for Ellen DeGeneres” (Lisa, IIB). Playing the drums was never mentioned as a musical activity while singing during the interviews, yet the majority of quantitative participants indicated they preferred to play drums and sing (n=279, 46.7%).

A final quantitative finding within this alignment concerns movement while singing. Most participants preferred sitting or standing in place and performing minimal motions (n=336, 56.3%). As a participant observer, this result was surprising because there were very few instances where students in first period would stay in one spot for more than ten-minute increments. Respondents did not specifically mention dancing in their classroom but my jottings recorded four different instances where dancing was a part of classroom activities during first period. During these observations, students were engaged and often autonomous with certain dance moves.

Integration Summary

The purposeful integration of qualitative and quantitative data outlined adolescent singing interests outside of a choral ensemble and with family members, differences of opinion about group singing between those in a choral ensemble and the questionnaire participants, mixed

findings about voice changing experiences and range, and value-added responses and observations concerning classroom singing activities.

The above findings align with previous research where positive interactions with music among family members increases music achievement and influences music participation (i.e., McPherson, 2009; Zdzinski, 1992, 1996, 2013). Contradictory alignments are found in previous research where adolescents involved in a choral ensemble may get frustrated with their non-singing peers (i.e., Sweet, 2010). Also, students who do not continue to sing through middle school often do not understand the changes their voice undergoes during adolescence (Cooksey & Welch, 1998). Mixed alignments are confirmed in the literature where self-identity with one part during adolescence is a contributor to negative singing experiences or a loss of vocal range (i.e., Siple, 1994; Sweet, 2015). Consistently switching parts between choral pieces not only develops reading skills but also allows adolescent singers to champion their changing voice. The enhanced findings are congruent with previous research suggesting that teacher effectiveness has a significant impact on positive singing experiences in school (i.e., Droe, 2008; Miller, 1993; Sichivitsa, 2007).

Additionally, it was surprising that the adolescent respondents discussed criticism as something positive. According to the Association for Middle Level Education, adolescents “Tend to be self-conscious and highly sensitive to personal criticism” (NMSA, 2010, p. 60). This statement suggests sensitivity to feedback given to adolescent students. The findings may suggest that students deeply involved with a curricular subject may be more receptive to constructive feedback. Another surprising finding was the participant preference of remaining close to their classroom seat. Given the popularity of show choir across the United States (i.e., Farmer, 2009) and my jottings as a participant observer, adolescent students tend to prefer more

movement while singing than less. It is recommended that educators encourage physical activity during class time because of the adolescent “need to release energy, often resulting in sudden, apparently meaningless outbursts of activity” (NMSA, 2010, p. 56).

Collection and analysis of quantitative and qualitative data along with its purposeful integration provide new and confirming insights to adolescents’ attitudes and perceptions of vocal music. It is from these attitudes and perspectives that I begin to make my concluding remarks, implications for the profession, and recommendations for future research.

Chapter 5: Conclusions, Implications, and Recommendations

“...to sing musically is to act thoughtfully and knowingly. Why? Because selecting, directing, adjusting, and judging are all forms of thinking and knowing.”

– *When I Sing: The Nature and Value of Choral Music Education* (Elliot, 1993)

Summary

Adolescents desire positive singing experiences in school (Cooksey, 2000; Gackle, 2011; Sweet, 2016b, Welch, 2016). Although education reform can have both positive and negative effects on the middle school model (Schaefer et al., 2016), the evolving nature of education reform has nonetheless caused inconsistencies in scheduling for vocal music courses at the middle level (McEwin & Greene 2010). This may be due to vocal music’s role in both general music and ensemble-based classroom settings.

Due to the nature of the middle school model, students are encouraged to explore their interests in a variety of curricular offerings. Generally, these exploratory courses are offered on a rotation (Brazee, 2000). General music is considered part of this rotation, however, much like core subjects, ensemble-based classes (or electives) are offered as a year-long course. The presence of vocal music components in both general and ensemble-based learning create scheduling inconsistencies that can prevent middle level students from having consistent curricular offerings of vocal music. Often, general music is required in a sixth and seventh grade rotation but replaced with an elective choral ensemble in 8th grade. Although the choral ensemble is considered an elective, schedules are such that some students may be placed in the elective who do not enjoy singing or desire a more general music experience. This may cause students to act out or bully those students who desire to participate in the elective course (Sweet, 2010).

The disparate nature of vocal music requirements affects adolescent attitude toward singing (Hamann, 2007; Wicks, 2015). Middle school students are at risk of developing poor

vocal technique or dislike for singing due to limited classroom experience. Additionally, scheduling inconsistencies may cause students to develop negative beliefs, attitudes, and values associated with the importance of vocal music. The current study is designed to gain an understanding of attitudes and perceptions of middle level students toward singing and vocal music to help create consistent positive singing experiences for adolescent musicians.

The Purpose

The purpose of this mixed methods study is to explore the attitudes and perceptions of eighth grade students toward singing and choir participation in relation to gender, voice mutation stage and method of music instruction.

Review of the Literature

Considering the changing definition of vocal music, it is important to understand how the following three key concepts relate to adolescent singing experiences: 1) the evolution of middle school model, 2) the function of vocal music within this model, and 3) the biological as well as sociological implications of the adolescent changing voice. This review of the literature will highlight both past and current education policies influencing original tenets of the middle school model. Additionally, there is a discussion of the function of vocal music within the middle school model as it relates to vocal skill development and general music. This discussion is followed by a concluding summary of physical and psychological effects of voice mutation on both male and female students.

The birth of the Middle School model was most notably brought to fruition by William Alexander with support from other founding fathers such as Donald Eichhorn, John Lounsbury, Conrad Toepfer, and Gordan Vars (David, 1998; Smith & McEwin, 2011). The purpose of this new education model was to promote a student-centered and process-oriented education

experience. The model as well as its tenets are best described in the position paper *This We Believe*. Currently in its fourth edition, this landmark document, first published in 1982, begins by quoting Alexander's (1963) original belief statement: "The learning of right answers is not enough...beyond answers alone, we must help children ask the right questions, and discover their answers through creating thinking, reasoning, judging, and understanding" (NMSA, 2010, p. 4). These foundational tenets encouraged curricular reform to accommodate the learning needs of adolescents rather than simply functioning as a preparatory institution for high school.

Rampant policy reform, including *A Nation at Risk* (1983), *No Child Left Behind* (P.L. 107-110), and *Race to the Top* (2012), encouraged preparation for high stakes testing over discovery-based learning (Gerrity, 2009b; Richerme, 2012; Schaefer et al., 2016). With the reappropriation of the Elementary and Secondary Education Act in 2015 (more popularly known as the *Every Student Succeeds Act*, P.L. 114-95), the promotion of a well-rounded education for all students brought back the original tenets of the middle school model but did not completely eliminate the public's desire to validate achievement with test scores. Current education reform, such as *The Choices in Education Act* (H.R.610), encourages *eligible children* to have a choice in public or private schooling. Although it is impossible to predict how this education reform may affect the middle level model, a basic assumption of the middle school model is to create an education that is supportive of *all* without "eligibility" requirements.

Similarly, the National Association for Music Education (NAfME) promotes music making for *all* students. This is important to consider when examining how vocal music functions within the middle school model. The newly revised National Music Standards encourage the process of creating, performing, and responding to music over product-based standards (Shuler et al., 2014). The standards provide a comprehensive and sequential music

education, where students develop enduring understandings of music through continuous experiences with the artistic processes (Nierman, 2016; Shuler et al., 2014). As in any academic subject, these standards are best served when students are continuously exposed through curricular offerings of music courses. However, in a recent national survey of highly successful middle level schools, 99% of schools offered band in both 7th and 8th grade whereas only 78% had a choral offering in 7th grade and 80% had a choral offering in 8th grade. More surprisingly, only 29% of schools had a general music course offering in eighth grade (McEwin & Greene, 2010). Due to these discrepancies, many non-instrumentally trained students are not receiving the tools needed to develop basic musicianship skills (i.e., Bolton, 2009; Poor, 1999). Not only does this have an effect on how students value vocal music as a part of the middle school curriculum, it also creates pedagogical concerns when training a young voice (Freer, 2010).

Vocal technique and music reading skills can be developed in middle school, but many adolescents attribute success to ability rather than effort (Freer, 2010; NMSA, 2010). This perception of vocal music can be concerning when considering both physiological and psychological changes that occur during voice mutation. Physiological changes include laryngeal growth, rib cage increase, lengthening of the vocal folds, changes in vocal tract length, development in laryngeal muscles, and growth of laryngeal cartilages (Leborgne, 2016). These changes contribute to insecurity of pitch, register breaks, increased huskiness in the voice, decreased and inconsistent range capabilities, voice cracking, hoarseness, and phonation difficulties (Cooksey, 2000; Gackle, 2011; Sweet, 2016a, 2016b). Although both genders have similar voice mutation symptoms, the male larynx grows anterior to posterior while the female larynx increases in length and width resulting in a rounded shape (Weiss, 1950). These changes are perceived to be more significant in male adolescents because of the significant thickening

and lengthening of the vocal folds resulting in an octave drop to their lower range, however, female adolescents also experience vocal fold growth with a lower register extension of one-third of an octave (Luchsinger & Arnold, 1965). As a result of these physiological changes, adolescents are often reluctant to sing in middle school (Ashley, 2006, 2010, 2011; Elorriaga, 2011; Freer, 2006, 2009a, 2010; Gackle, 2006, 2011; Kennedy, 2002; Killian & Wayman, 2010; Mizener, 1993; Nannen, 2017; Sweet, 2015, 2016b, 2018).

Initial research into the social implications of voice mutation addressed the absence of male singers in choral ensembles (e.g., Freer, 2010). A selected example from the literature attributes male desire to participate in group singing to success in the classroom (i.e., Csikszentmihalyi, 1990); a sense of belonging (i.e., Daniels & Leaper, 2006), and the notion of ability rather than effort contributing to positive singing experiences (i.e., Ruddock & Leong, 2005). Although research on the social implications of the female changing voice have been lacking for some time in our profession (Sweet, 2016b), recent qualitative studies have identified themes associated with female voice change as phonation experiences (i.e., passagio difficulty and vocal breathiness, premature self-identification with one voice part); emotional experiences (i.e., frustration, embarrassment, pride, isolation); and contexts of singing (i.e., where I am singing, what I am singing) (Sweet, 2015). Considering these social implications, it is important to validate male, as well as female, singing experiences with the changing voice to promote equity in the classroom and positive singing experiences for all, in other words “we are all in this together, regardless of gender” (Sweet, 2016a, p. 63).

In promoting positive singing experiences for middle school students, the following study was conceived to develop a deeper understanding of how the middle school model, vocal music experiences and adolescent voice change form attitudes and perceptions of singing from

students enrolled various middle level music courses. The theoretical model for this study was based on Dewey's (1938) concept of enduring understandings where students will not improve skill only through positive experiences, but through continuity of learning. Along with continuity, students need a safe environment in which to learn. Environmental influence has a significant effect on self-efficacy (Bandura, 1977). Following this logic, a student who continually experiences high self-efficacy will form generalizations of their musical ability and create positive enduring attitudes about singing (Demorest, Kelly, & Pfordresher, 2017). Another component of the theoretical model is Kolb's (1984) *Experiential Learning Theory* where the process of learning is continuously created and recreated facilitating an ease of transfer to future learning experiences. In this sense, learning is not only a process of creating knowledge but also a transaction between a person and her environment. The analytic model displayed in Figure 1 represents the process in which method of music instruction effects student attitude and perceptions of vocal music as a curricular subject.

Procedure

In order to understand student perceptions of vocal music at the middle level, I conducted a convergent mixed methods study where data were collected in two phases. Quantitative data were collected followed by the qualitative data but were analyzed simultaneously and then intentionally merged, thus offsetting the strengths and weaknesses of a single design (Creswell & Plano Clark, 2017). Within this research design, both the quantitative and qualitative strands had equal priority (QUAN + QUAL). This design was selected to provide a broader view of adolescent singing experiences in middle school (see figure 2).

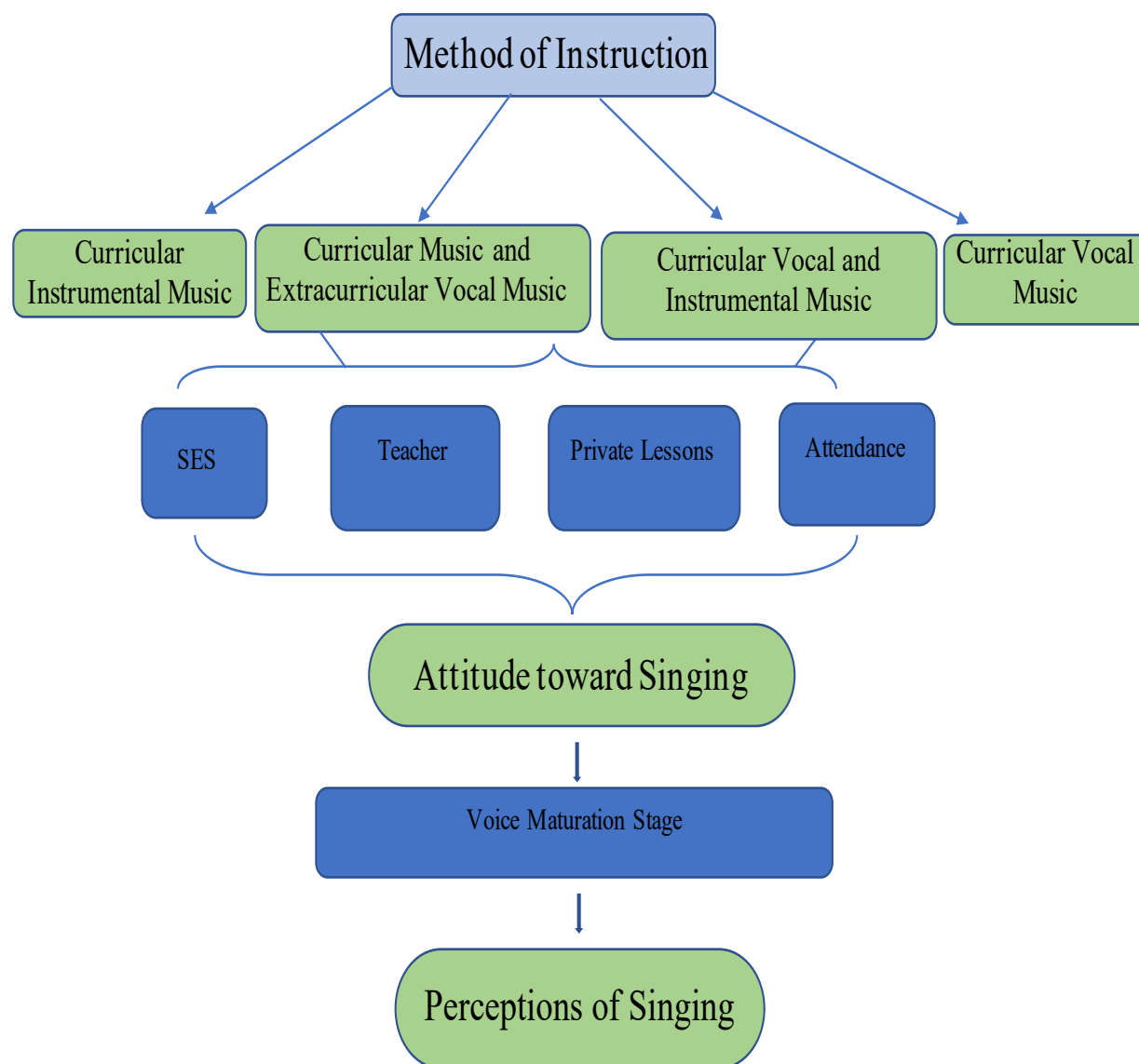


Figure 1. *Theoretical Model*: Methods of music instruction affects student perceptions of vocal music as a curricular subject.

In the quantitative phase, data were collected using my adaptation of the Mizener (1993) singing interest and choir participation questionnaire. To establish content validity, the items within the questionnaire cover five categories of singing experiences gathered from the literature: singing interest, choir participation, classroom singing activities, out-of-school singing experiences, and self-perceptions of singing skill. Cronbach's alpha was calculated to measure

the internal consistency of the questionnaire items intended to represent an overall attitude toward singing and choir participation. The overall alpha coefficient for the five categories of questionnaire items was .89. This questionnaire was piloted and then administered to eighth grade students (N=826) in a Midwestern school district which rendered n=562 viable responses. At the end of the questionnaire, participants were invited to participate in the qualitative phase of study.

The qualitative phase was based on interviews with observations and range assessments of participants from one middle school. This site was selected for the large number of students with a positive attitude toward vocal music. Due to the convergent design of this mixed methods study, positive attitude was determined by the number of students enrolled in eighth grade vocal music, participating in before and after school choirs, and consistency of exposure to curricular vocal music courses. Out of the 49 quantitative participants in 8th grade choir, 21 participants volunteered for the qualitative portion of the study. I chose to invite all of these participants to a semi-structured group interview. From these invitations, 7 students returned parent/guardian consent forms. These respondents were interviewed and assessed in a secluded classroom space during first period.

Design and Results

In designing this mixed methods study, the following quantitative, qualitative and mixed methods research questions were created:

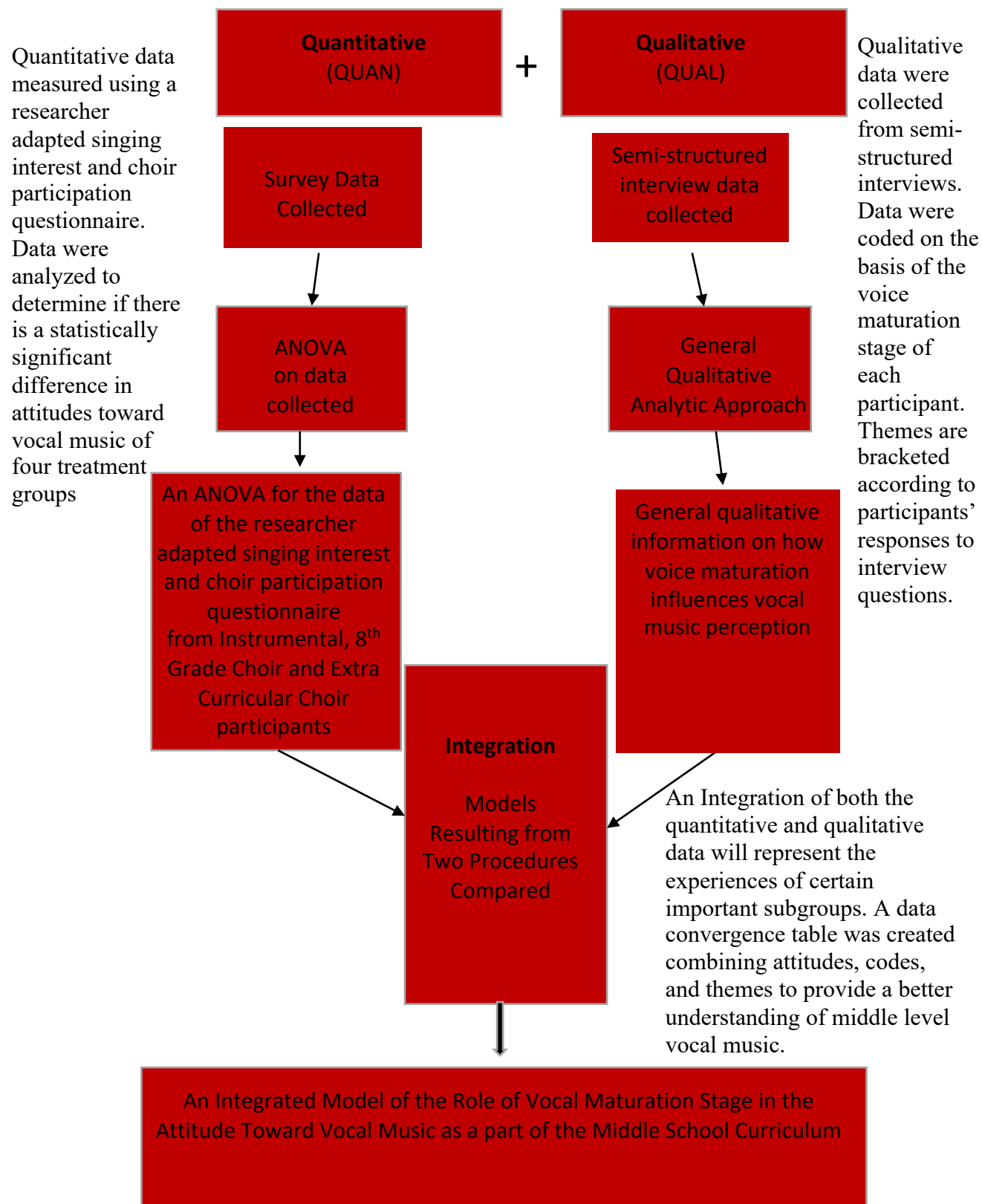


Figure 2. A procedural diagram of the concurrent mixed methods design.

Quantitative Questions

1. Is there a difference in attitudes toward singing among eighth grade students in four treatment conditions (curricular vocal music instruction, curricular instrumental ensemble instruction, curricular music instruction and extracurricular choral ensemble, curricular instrumental and vocal instruction) as measured by an adapted Mizener (1993) singing interest survey?
2. Is there a difference in attitudes toward singing among eighth grade students based on gender as measured by an adapted Mizener (1993) singing interest survey?
3. Is there an interaction between instruction groups and gender among eighth grade students as measured by an adapted Mizener (1993) singing interest survey?

Qualitative Question

4. How do middle school students in various stages of vocal maturation perceive vocal music as a part of the 8th grade middle school curriculum?

Mixed Method Question

5. In what ways do the survey and interview data align with one another?

A demographic summary of participants include instructional groups (n=562), gender (n=562), and socioeconomic status (n=597). Student demographics included a description of curricular and extracurricular music involvement at the middle school: curricular vocal music (n=145, 26%), curricular instrumental music (n=301, 54%), curricular music and extracurricular choir (n=72, 13%), and curricular instrumental and vocal music (n=44, 7%). Personal student demographical information included gender, Male (n=245, 44%) and Female (n=317, 56%); and socioeconomic status (SES), high (n=361, 60%) and low (n=236, 40%). To preserve anonymity of the students and school district, SES was determined by the percentage of students on free and

reduced lunch in each school. If the school had more than 45% of its population using a lunch service, than they were considered to be a school with low SES.

Quantitative research questions. 1) *Is there a difference in the attitudes toward singing among eighth grade students in four treatment conditions (curricular vocal music instruction, curricular instrumental ensemble instruction, curricular music instruction and extracurricular choral ensemble, curricular instrumental and vocal instruction) as measured by an adapted Mizener (1993) singing interest survey?* 2) *Is there a difference in attitudes toward singing among eighth grade students based on gender as measured by an adapted Mizener (1993) singing interest survey?* 3) *Is there an interaction between instruction groups and gender among eighth grade students as measured by an adapted Mizener (1993) singing interest survey?*

Statistical analyses were performed in four of the five questionnaire categories using a two-way ANOVA for non-repeated measures using instructional groups and gender as main effects. Due to the fact that only one group produced a statistically significant difference in gender and no interactions were found, the results of all three research questions are reported together. The fifth category, *classroom singing activities*, were analyzed through a series of chi square tests for independence. Statistically significant main effects were found in the singing interest, self-perceptions, out-of-school, and choir participation categories.

Singing Interest. The ANOVA summary table for singing interest from chapter 4 (see Table 4) suggests there is a significant difference in at least one of the instructional groups ($F_{3, 554} = 18.72, p < .05$) and in at least one of the gender groups ($F_{1, 554} = 11.16, p < .05$). For instructional group means, the curricular instrumental ensemble instruction group has the highest average ($M = 2.18, SD = .02$). A Bonferroni post hoc multiple comparisons of means revealed significant ($p = .008$) mean differences between curricular vocal music instruction and the three

other instructional groups, as well as curricular instrumental ensemble instruction and the three other instructional groups. Upon further investigation, singing interest correlated positively ($r = .197$) with curricular vocal music and negatively with band ($r = -0.062$) and orchestra ($r = -0.033$). Gender means show a higher singing interest average in male participants ($M = 2.05$, $SD = .04$). There were no statistically significant mean difference for the other two instructional groups.

Choral Participation. Similarly to singing interest, there was also a significant difference in at least one of the instructional groups ($F_{3,334} = 8.21$, $p < .05$) with the highest average in the curricular instrumental ensemble instruction group ($M = 2.19$, $SD = .01$). A Bonferroni post hoc test revealed significant mean differences between curricular vocal music instruction and curricular music instruction with an extracurricular choral ensemble. There was also a significant mean difference between curricular music instruction with an extracurricular choral ensemble and curricular instrumental ensemble instruction. None of the other groups had statistically significant mean differences.

Out of school singing experiences. The questionnaire items in this category had two different scales. Three items had a four-point rating scale and two items were forced questions. A two-way ANOVA was used to identify main effects in the three items with a four-point rating scale. Crosstabulations were conducted on the two forced questions to probe for any gender differences. Significant main effects were found in a least one instructional group ($F_{3,554} = 12.89$, $p < .05$) where the curricular instrumental ensemble group ($M = 2.38$, $SD = .04$) reported a higher mean average than the other instructional groups. Crosstabulations revealed a higher frequency of “yes” answers to *Someone in my family sang to me when I was younger* ($n=412$,

69%) than *I sing songs with some of my family* (n=288, 48%). More female participants answered “yes” for both items (see Table 9 and 10).

Self-perceptions of singing skill. With regard to perceived singing skill, this category reflects similar significant main effects as the previous categories. A significant main effect was found in one of the instructional groups ($F_{3, 554}, p < .05$) and the highest group mean average was once again in the curricular instrumental ensemble ($M = 2.52, SD = .03$). Upon further investigation, frequency calculations to *I'm a good singer* revealed participants in more than one music ensemble (n=116) had the highest number of true responses (n=63, 54%). This is also consistent with the frequency calculation for *Do you like to sing* (n=69, 95%).

Classroom singing activities. A chi-square test of independence was used to determine if there are any significant relationships between instructional groups and classroom singing activities. Tests were conducted on all nine items in this category, but only those items rendering an acceptable Cramer's V of $\geq .20$ are reported (see Tables 14, 15, 16 from chapter 4). Membership to a particular group does make a difference in preferred classroom singing activities. Participants in all groups prefer to sing songs with the piano $\chi^2 (6, n=562) = 51.28, p < .001$, Cramer's V .214, with the curricular instrumental ensemble group having the highest frequency (n=115). Additionally, participants prefer to sing songs from resources other than their songbooks $\chi^2 (9, n=562) = 96.61, p < .001$, Cramer's V .239. Finally, results indicate a preference for singing a song before listening to instructor rhetoric about the notation $\chi^2 (9, n=562) = 89.05, p < .001$, Cramer's V .230.

Qualitative Research Question. *How do middle school students in various stages of vocal maturation perceive vocal music as a part of the 8th grade middle school curriculum?*

Data were analyzed by hand coding each text and dividing codes by voice maturation stage. These hand codes were collapsed across voice maturation stage into twenty corresponding codes and similar codes were collapsed again into four overall themes (Creswell, 2016; Merriam & Tisdell, 2016) (see Figure 4 in chapter 4).

Theme 1: First Period. Every student regardless of voice maturation stage said they “loved singing” and coming to choir “makes my day better.” Others mentioned that it was fun to sing with their peers and participating in choir has created a close emotional bond with ensemble members.

We’ve all become a kind of chorus family and it’s really a fun place to be...I love singing and getting to sing everyday, it just makes my day better and I just love starting my day off by singing and being with a cool group of kids. (Lisa, Stage IIB)

Respondents also discussed the importance of remaining in choir. Bruce (Stage IV) remarked “There are times when choir might actually save your life. Just stay in it cause it makes such an impact on your life...”.

Theme 2: Singing. Many students identified vocal technique as being an important part of singing. Specifically, respondents mentioned correct formation of vowels and clear consonant sounds. Self-assessment by recording practice sessions was mentioned as being an important part of singing. Sight-reading was mentioned as an important singing and playing skill developed in both choral and instrumental music classrooms. In addition to skill, range was mentioned in terms of voice changing experiences. Jason (stage III) began to blush and smile as he said: “... in sixth grade having such a high voice to having the voice I do now...”. Bruce (Stage IV) said “...like my voice just went down.” Female respondents in the stage IIB category described their voice changes as being able to sing higher but possessing an immature tone “...just like a kid

voice...”. Overall, female respondents equated the ability to sing high as having a “good voice”. Something all respondents attributed to overall range development was their instructor’s insistence on switching parts: “I feel like one of the reasons that all our ranges have gotten pretty big is because [teacher 1] doesn’t pin point us on one section...” (Samantha IIB). All respondents also mentioned a passion for singing where a comparison was made between their non-singing peers: “...kids would be like ‘ew I have to get up and go sing?’ I’d be like ‘I get to get up and go sing!’...just one of my biggest passions” (Emily III).

Theme III: Teacher. Positive energy, high expectations, and constructive feedback were frequently mentioned as important qualities of their classroom teacher. Students expect positive energy when they walk into the classroom: “I know I can come to chorus and...there’s always positive energy” (Samantha IIB). Along with positive energy, students mention the high expectations of the instructor. One respondent talked about his teacher having higher expectations than teachers from other middle schools: “Most middle school just like expect ‘oh you can sing this at a pretty good volume’ he’s like, ‘can we take it. up another level?’” (Jason III). Criticism (in vivo code) is discussed in tandem with high expectations as an establishment of trustworthiness. Emily (Stage III) talks about “really liking” criticism because she can “get better” while Bruce (Stage IV) mentions criticism as something “...I actually have...to live up to.” Many respondents gave credit to their teacher for improving their voice by “pushing” them to sing. Male respondents specifically mention that “...he really pushes guys to sing...” (Bruce, Stage IV). Whereas, female respondents talk about being “pushed” to sing a certain way when it comes to learning the music correctly. Not only was their current classroom teacher mentioned in the third theme, but also their beloved elementary school music teacher. Students attributed their

elementary teacher with improving their singing voice and influencing their decision to keep singing.

Theme 4: At home: A discussion about life at home and musical influences of family members revealed students having parents who sing or play instruments. Jason (Stage III) mentioned that his mom and dad are always singing along while *Alexa* is playing the Avett brothers. Many respondents also mentioned attending choir concerts at different schools in the district with their parents. Other codes that emerged were singing alone at home with “my phone” using the bonafide® or spotify® app. Some also talked about singing with their ukulele or guitar and “making up songs”. Two female respondents admitted they secretly hoped their compositions would be discovered by the Ellen DeGeneres show.

Mixed Methods Question. *In what ways do the survey and interview data align with one another?*

The convergence process revealed four types of alignment between the qualitative and quantitative data: confirm, contradict, mixed, enhance (Fitzpatrick, 2011). This “explicit interrelation” of data will provide a deeper understanding of how the survey and interview data align with one another (Plano Clark & Ivankova, 2016, p. 40).

Confirm. Data confirm that middle school students generally like to sing (n=404, 67.7%), but prefer to sing by themselves (n=341, 57.1%) to songs on their phone or the radio (n=364, 61%). Singing with a few friends or family members was also confirmed as an enjoyable singing experience. Participants also believe that one should continue to sing during voice mutation but recognize along with the growth of their larynx comes range discrepancies. Singing high is often a problem for students experiencing voice change (n=252, 42.2%): “I used to be able to sing a little bit higher but my voice wasn’t as good” (Susan, IIB) and “...my voice has been like from

super high in fifth grade to like lower...” (Jason, Stage III). Although quantitative data revealed a general dislike for choral ensemble singing amongst quantitative participants (n=246, 41.2%), there was an agreement that it is important for people to like the choir teacher (n=307, 51.4%). Respondents spoke about both their elementary and middle school teachers having high expectations and positive energy.

Contradict. Despite a majority of quantitative participants agreeing that they like to sing, many did not have the desire to sing in a choral ensemble (n=361, 60.5%). This is contradictory to several codes that emerged during the interview process. Participants conveyed their love for singing and singing with their peers. Interviews also revealed that not only did choir participation increase musical skill, it also enhanced their school day and created a close emotional bond with other students: “We’ve all become a kind of chorus family” (Lisa, Stage IIB). Other contradictions include identification of voice changing experiences. Respondents in the interview talked extensively about changes in their voice from elementary to middle school: “...my range has gotten bigger, like since elementary school...” (Felicity, Stage III); “...in fifth grade, I could sing like to the top of the scale...and all of a sudden in sixth grade , it just dropped all the way down...” (Bruce, Stage IV). Yet, the majority of quantitative participants did not believe singing to feel any different from elementary school (n=205, 34.3%).

Mixed. Mixed alignments emerged when examining the following belief statements: too high or too low to sing, adults in the family who belonged to a choir, someone at home listening to the participant sing, and being a good singer. Quantitative results show that students did not think notes in choir class are too low (n=282, 47.2%) but do believe some can get too high (n=172, 28.8%). Students in the interview responded to these issues by explaining that they frequently switch parts during choir class. Respondents who spoke about choral music as being

too high are too low also attributed their increase in range to switching parts. Additional mixed alignments revealed that quantitative participants agreed that adults in their family were not in a choir (n=454, 76%). Respondents reported that some of their parents sang in a choir while others reported their parents were not at all musical.

Enhanced. Value added alignments emerged from the classroom singing activities category of the quantitative data. Questionnaire participants reported to prefer less instruction from the teacher, specifically less explanation of the notes of a song (n=222, 37.2%). Although respondents did not explicitly speak to the teacher and notes of a song, they were quite adamant about their teacher “pushing” them to sing a song correctly with good technique and musicianship. In fact, students expressed a sense of trust between teacher and student due to instructional demands and high expectations from the teacher. Within the “At Home” emergent theme, respondents discussed singing and playing the guitar and ukulele, yet the majority of quantitative participants indicated they preferred to play drums and sing (n=279, 46.7%). This enhanced finding suggests a difference between preferred activities at home and in the classroom. A final quantitative finding within this alignment concerns movement while singing. Most participants preferred sitting or standing in place and performing minimal motions (n=336, 56.3%). Respondents did not specifically mention dancing in their classroom, but my jottings recorded four different instances where dancing was a part of classroom activities during first period. During these observations, students were engaged and often autonomous with certain dance moves.

Implications for Music Education

The breadth and depth of literature produced by our profession on adolescent singing experiences aligns with many significant results from the current study. The value-added

component of this study lies within the research design and comparative data. This methodology allowed for three compelling findings: males had a higher mean average in singing interest, participation in instrumental music groups have a significant influence on attitude toward singing and vocal music, and adolescents find something unique in the choral singing experience.

There was a significant difference in singing interest between male and female adolescent musicians where male students had a higher mean average than female students. The comparative data suggests that male and female singers are often passionate about singing but those in the final stages of voice change are more confident about their ability to sing than those in earlier stages. It also suggests that due to the abundant resources on the male changing voice, female singers may express a love for singing but may be neglected when it comes to championing their changing voice (Gackle, 2011; Sweet, 2018). Equity in instruction should be considered when concerning vocal skill development during voice mutation. I suggest that our profession move away from the ‘missing males’ phenomenon (Freer, 2010) and move toward equity in positive singing experiences for both genders.

To provide these equitable experiences, our profession should move toward consistency in vocal music offerings at the middle level. Within current structures, students in vocal music may weave in and out of the program, participating at some points. For example, students who choose not to participate in choir in middle school may decide to register for choir in high school. While this ease of re-entry can be considered an asset to vocal music in schools, it is also likely what separates it from instrumental music. There was a large gap in participant numbers between instrumental music ensemble participants and the rest of the instruction groups. This implies that most students in the study were enrolled in instrumental music. The fact that significant findings in instructional groups for the categories of singing interest, choir

participation, self-perception of singing skill, and out of school singing experiences tend to favor the instrumental ensemble instruction group implies that the instrumental curricular offerings have an impact on adolescent attitudes toward singing and middle level vocal music.

Quantitative data show that participants liked to sing and students in more than one ensemble thought that they were a good singer. In order to narrow the gap between ensemble based instructional groups, curricular offerings of both groups must be scheduled equally within the school day. If there are ensemble-based instruction opportunities for instrumental students offered consistently throughout the school year then there should be instruction opportunities for vocal students offered in tandem. Although some in our profession may worry about losing numbers in their ensemble due to equitable course offerings, hybrid scheduling is a solution being explored where students can enroll in ensemble-based instruction in more than one discipline, alternating days of attendance. However, ensemble-based instruction should not be a replacement for general music experiences, or the only instruction offered for middle level students.

General music should be offered to those who do not wish to experience music in an ensemble based environment (Cronenberg, 2017; Green, 2017; McAnally, 2016; Wayman, 2004). Participant observations reveal students who are placed (as opposed to elect to enroll) into ensemble based choral instruction often act overtly negative during class time or choose to sing at an inaudible level for fear of negative peer judgement. Additionally, qualitative respondents remarked that the students in eighth grade choir that do not like to sing negatively affect the sound of the choir. Bruce (Stage IV) described they singers as being "...too cool for choir or...embarrassed." Giving those same students an opportunity to explore their musical interests in a general music class may promote music making for *all* (NAfME, 2014). This way, students

at the middle level still have the opportunity to achieve cornerstone objectives of the newly revised National Standards without the pressures of meeting ensemble standards. Our National Standards are designed to accommodate this scheduling design with standards in both general music up to grade 8 and ensemble standards including grade 8. These standards are best served when students have consistent opportunities to achieve in a variety of musical settings. Although there is value in expanding curricular offerings at the middle level, there is also something unique that adolescents find about the traditional choral singing experience.

Group singing offers a unique opportunity for students to sing in parts with other voices that have developed over time. There is a systematic skill development created over time that reinforces the beauty of voices in harmony. Students feel a sense of accomplishment and satisfaction through continuous learning experiences. Qualitative respondents were proud of their skill development in choir. Improving one's voice was always described in a choral setting. Respondents discussed improving their range by singing multiple parts, desiring a continuity in their vocal skill development, and having a passion for singing with their peers that could only occur during first period (an in vivo code for choir class). Preserving the tradition of choir at the middle level will help facilitate this desire for the group singing experience that is not otherwise present in other course offerings. To accomplish this within the middle school model, it is advised that NAFME partner with AMLE to find a solution for consistency in music course offerings.

As stated in *This We Believe*, middle school students are highly influenced by what is valued in their environment. When prompted by the belief statement *Choir is just as important as other classes like science, math, or reading*, the majority of participants rendered the answer "not true" (n=244, 40.9%). Although national policy may continue to respond similarly to the

aforementioned belief statement, students may interpret the value of vocal music as equal to core subjects if scheduling reflected its importance within their school day. By creating a collaborative relationship between NAFME and AMLE, there is an opportunity not only for music educators to influence scheduling decisions at the middle level but also for middle level educators to have a deeper understanding of the artistic processes and how they align with the tenets of the middle school model. These collaborations can then be exhibited in professional development environments such as national and state conferences and site based professional learning communities (PLCs).

Limitations

Although the internal consistency of the measurement tool as a whole was high ($\alpha=.89$), each of the five categories were not as internally consistent as the instrument as a whole. Additionally, the original measurement tool was analyzed using non-parametric statistical analysis whereas I chose to use a two-way analysis of variance in the majority of the five categories. This was a conscious choice in order to report mean values which has been a criticism of Mizener's (1993) original study (Demorest et al., 2017). The results of this study are also based on one Midwestern school district. Although the sample size was large for this particular study ($N=562$), generalizations to other parts of the country should be cautioned.

Suggestions for Future Study

1. First and foremost, it is my recommendation that there are more studies in music education including the student voice at the middle level. It is through the student voice that we may begin to understand their worldviews within the music classroom.
2. Expanding the quantitative portion of this study to other parts of the country will provide a deeper understanding of attitudes of middle level students in general. Additionally, a demographic understanding of how the middle school model is adapted in different parts of the

country would be an interesting main effect comparison to each of the five categories within the measurement tool.

3. Revising the measurement tool to include items on the same measurement scale as well as similar number of items within each category may render a more reliable internal consistency level between categories.

4. Designing an attitudinal measurement tool that collectively measures across multiple dimensions may provide a clearer picture of overall attitudes regarding vocal music.

5. Individual interviews in the qualitative strand of the study may provide more of a complete picture of adolescent singing experiences and render more value-added results to the mixed methods research design. Comparative data including students with negative attitudes toward singing may also provide a deeper understanding about singing experiences in middle school.

6. A longitudinal study involving measuring attitude toward singing from fifth to eighth grade may provide a well-rounded view of what influences positive singing experiences in middle school.

7. Adding a range assessment for students not involved in vocal music courses could provide insight into voice changing experiences between students actively developing their vocal skill and those who are not exposed to this type of skill development. These differences could then be compared to overall attitude.

8. A qualitative study focused on students forced to participate in ensemble-based vocal music courses in middle school would also be recommended.

9. Investigate how other parts of the world treat middle level vocal music education and its effect on attitudes and perceptions of singing.

10. A continued study on how the middle level model is evolving within every changing national policy and how that affects curricular vocal music opportunities.

Summary

One of the greatest challenges faced by middle level educators is creating enduring positive attitudes about singing during adolescence. By bridging the gap between instrumental and vocal ensemble-based instruction, we are creating an environment conducive to positive attitudes and perceptions toward singing. In order for middle level vocal music educators to facilitate singing skill development, there must be considerations for continuous adaptation of how we teach and value each individual student. We can accomplish this by championing the changing voice in our male and female students. Finally, educating middle school stakeholders, such as members of AMLE, we have the opportunity to create consistent and equitable offerings of both ensemble-based and general music courses at the middle level. Within this middle school model, our students have the opportunity to create life-long positive enduring attitudes about singing.

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Appendix A: Institutional Review Board Approval Letter



Official Approval Letter for IRB project #19158 - New Project Form

February 4, 2019 - official approval letter

Marci DeAmbrose
Glenn Korff School of Music

Rhonda Fuelberth
Glenn Korff School of Music
WMB 347, UNL, 685880100

IRB Number: 20190219158 EX

Project ID: 19158

Project Title: Finding Middle Ground: A Convergent Mixed Methods Study on Adolescent Perception of Middle Level Vocal Music

Dear Marci:

This letter is to officially notify you of the certification of exemption of your project for the Protection of Human Subjects. Your proposal is in compliance with this institution's Federal Wide Assurance 00002258 and the DHHS Regulations for the Protection of Human Subjects at (45 CFR 46 2018 Requirements) and has been classified as exempt. Exempt categories are listed within HRPP Policy #4.001: Exempt Research available at: <http://research.unl.edu/researchcompliance/policies-procedures/>.

o Date of Final Exemption: 2/4/2019

o Review conducted using exempt category 1 at 45 CFR 46.101104

o Funding (Grant congruency, OSP Project/Form ID and Funding Sponsor Award Number, if applicable):

N/A

This project should be conducted in full accordance with all applicable sections of the IRB Guidelines and you should notify the IRB immediately of any proposed changes that may affect the exempt status of your research project. You should report any unanticipated problems involving risks to the participants or others to the Board.

If you have any questions, please contact the IRB office at 402-472-6965.

Sincerely,

Becky R. Freeman, CIP
for the IRB



University of Nebraska-Lincoln Office of Research and Economic Development
nugrant.unl.edu



NUGrant

Appendix B: Student Cover Letter (Quantitative)



GLENN KORFF SCHOOL OF MUSIC

Dear Student:

My name is Marci Malone DeAmbrose and I am currently a Graduate Teaching Assistant and Ph.D. Candidate at the University of Nebraska-Lincoln. I am working on a research project and need your assistance. I have a questionnaire to measure student attitude about singing in middle school. I need a groups of students who participate in band, orchestra, 8th grade choir (during the school day), or after school choir. I am also looking for some students to interview after taking the questionnaire. You will have an opportunity to volunteer for that option at the end of the questionnaire.

Participation in the questionnaire portion of this study will require approximately 20 minutes of your time. You will be asked to complete a questionnaire about your attitude toward singing in middle school and rate yourself on how true or not true sets of statements represent you (e.g. I think I am a good singer, Someone in my family likes to sing songs). This will take place at your school during after school choir or your ensemble class time. All information collected during the study period will be kept strictly confidential. No publications or reports from this project will include identifying information on any participant.

Your parents/guardians were notified about this project and the school office has been provided with a list of students not eligible for participation. If you have any questions about your eligibility for this project, please speak with the school office or the primary researcher.

Thank you for your time and consideration of this project.

Sincerely,

Marci Malone DeAmbrose, M.M., A.D.
Ph.D. Candidate and Graduate Teaching Assistant
University of Nebraska-Lincoln

Appendix C: Parent/Guardian Notification Form (Quantitative)



GLENN KORFF SCHOOL OF MUSIC

Parent/Legal Guardian Notification Form

IRB# 19158

Title: Finding middle ground: A convergent mixed methods study on adolescent perceptions of middle level vocal music

Purpose:

The purpose of this mixed methods study is to explore the attitudes and perceptions of eighth grade students toward singing and choir participation in relation to voice changing stage and method of music instruction. Your child/legal ward is invited to participate in this study because they participate in an instrumental ensemble, 8th grade choir, or extra-curricular choir.

Procedures:

Your child/ward will be asked to fill out a survey asking for students' perspectives on their school music classes. The survey will only be given to students who agree to participate and whose parents/guardians have given consent. The surveys will then be collected and returned to me at the University of Nebraska-Lincoln. The survey should take only about 20 minutes to complete.

Benefits:

The benefits to your child are that students will be encouraged to think about their thoughts and feelings about music class. In addition, the students may enjoy participating in research, and may gain insight into their attitudes about music and music education.

Risks and/or Discomforts:

There are no known risks or discomforts associated with this research.

Confidentiality:

Any information obtained during this study which could identify them will be kept strictly confidential. The name of your student will never be shared. Your student will be identified by their student number. The data will be stored electronically through a secure box account provided by the University of Nebraska-Lincoln and will only be seen by the research team during the study.

The information obtained in this study may be published in research journals or presented at research meetings, but the data will be reported as group or summarized data.

Opportunity to Ask Questions:

You and your child/legal ward may ask any questions concerning this research and have those questions answered before agreeing to participate in or during the study. Or you may contact the investigator(s) at the phone numbers below. Please contact the University of Nebraska-Lincoln Institutional Review Board at (402) 472-6965 to voice concerns about the research or if you have any questions about your child's/legal ward's rights as a research participant.

Freedom to Withdraw:

Participation in this study is voluntary. You and your child/legal ward can refuse to participate or withdraw at any time without harming you or your child's and their relationship with the researchers, Lincoln Public Schools, the University of Nebraska-Lincoln, or in any other way receive a penalty or loss of benefits to which you or they are otherwise entitled. Also, their grade in 8th grade choir, band, or orchestra will not be affected by their participation or withdrawal from the

113 Westbrook Music Building / P.O.Box 880100 / Lincoln, NE 68588-0100
(402) 472-2503 / FAX (402) 472-8962 / music.unl.edu

research.

Consent, Right to Receive a Copy:

You are voluntarily making a decision whether or not to allow your child/legal ward to participate in this research study. Your child/legal ward will also agree to be included by providing assent. If you do not want your child to participate, please complete the section below.

Parent Notification Form

I have read the information about the research being conducted by the University of Nebraska-Lincoln. Please check the box below only if you **do not** want your child/legal ward to take part in the research

My child **does not** have permission to participate

Name of Student:

(Name of Student: Please print)

Name & Signature of Parent/Legal Guardian:

(Name of Parent/Legal Guardian: Please print)

(Signature of Parent/Legal Guardian)

Date

Name and Phone number of investigator(s)

Marci Malone DeAmbrose, MM, Principal Investigator Office: [REDACTED]

Rhonda Fuelberth, Ph.D., Secondary Investigator

Office: [REDACTED]

Appendix D: Parent/Guardian Informed Consent Form (Qualitative)



GLENN KORFF SCHOOL OF MUSIC

Parent/Legal Guardian Informed Consent Form

IRB# 19158

Title: Finding middle ground: A convergent mixed methods study on adolescent perceptions of middle level vocal music**Purpose:**

The purpose of this mixed methods study is to explore the attitudes and perceptions of eighth grade students toward singing and choir participation in relation to voice changing stage and method of music instruction. Your child/legal ward is invited to participate in this study because they participate in an instrumental ensemble, 8th grade choir, or extra-curricular choir.

Procedures:

Your child/ward will be asked to share their perceptions about singing in middle school in a one-on-one interview that will require approximately 25-40 minutes of class time. A researcher from UNL will conduct the qualitative interview. A short vocal maturation stage will be assessed to find out if your student's voice is unchanged, changing, or changed. It is possible that the students selected for the interview do not participate in choir, which is expected. Example questions related to singing perception include: What motivated you to sing in middle school? Tell me about a time when something you learned had a positive effect on your decision to keep singing in middle school. After the interview is completed, a word-for-word transcription will be created. The primary researcher will return to school with a transcript of the interview and read the transcript aloud to the participant so that he or she may verify the transcript is an accurate representation of the interview. This process, known as member checking, will take approximately 10 min of class time. Completion of the interview will take place at your child's/legal ward's school during regular business hours. Students will indicate interest in the qualitative interview by volunteering at the end of a questionnaire given during class. Only those students who have given their assent on the questionnaire with signed parental consent will be invited to participate in this portion of the study. The information used in this study will be used as the basis of my dissertation.

Benefits:

The researcher hopes that the results of this study lead to a better understanding of how choral music and singing are viewed by adolescent students.

Risks and/or Discomforts:

There are no known risks or discomforts associated with this research.

Confidentiality:

Any information obtained during this study which could identify them will be kept strictly confidential. The name of your student will never be shared, but the recording of the interview will be shared with a highly qualified transcriptionist who will sign a confidentiality agreement. The data will be stored electronically through a secure box account provided by the University of Nebraska-Lincoln and will only be seen by the researcher during the study.

The information obtained in this study may be published in research journals or presented at research meetings, but the data will be reported as group or summarized data.

Opportunity to Ask Questions:

113 Westbrook Music Building / P.O.Box 880100 / Lincoln, NE 68588-0100
(402) 472-2503 / FAX (402) 472-8962 / music.unl.edu

You and your child/legal ward may ask any questions concerning this research and have those questions answered before agreeing to participate in or during the study. Or you may contact the investigator(s) at the phone numbers below. Please contact the University of Nebraska-Lincoln Institutional Review Board at (402) 472-6965 to voice concerns about the research or if you have any questions about your child's/legal ward's rights as a research participant

Freedom to Withdraw:

Participation in this study is voluntary. You and your child/legal ward can refuse to participate or withdraw at any time without harming you or your child's and their relationship with the researchers, Lincoln Public Schools, the University of Nebraska-Lincoln, or in any other way receive a penalty or loss of benefits to which you or they are otherwise entitled. Also, their grade in 8th grade choir, band, or orchestra will not be affected by their participation or withdrawal from the research.

Consent, Right to Receive a Copy:

You are voluntarily making a decision whether or not to allow your child/legal ward to participate in this research study. Your child/legal ward will also agree to be included with the study by providing their assent. Your signature certifies that you have decided to allow them to participate having read and understood the information presented. You will be given a copy of this parental/legal guardian consent form to keep.

Parent/Legal Guardian Informed Consent Form

Name of Child to be Included:

(Name of Child: Please print)

Name & Signature of Parent/Legal Guardian:

(Name of Parent/Legal Guardian: Please print)

(Signature of Parent/Legal Guardian)

Date

Name and Phone number of investigator(s)

Marci Malone DeAmbrose, MM, Principal Investigator Office: [REDACTED]
Rhonda Fuelberth, Ph.D., Secondary Investigator Office: [REDACTED]

Appendix E: Youth Assent Form (Qualitative)



GLENN KORFF SCHOOL OF MUSIC

Youth Assent Form

You are being invited to participate in an interview because you are an 8th grader, and I am interested in your views on singing interest and vocal music participation in middle school. You are not required to be enrolled in choir in order to be considered. The interview will take you about 25-40 minutes to complete. You will be asked a series of questions about singing, choir, and your perceptions of singing in middle school. Your comments will help me gain a better understanding of your perception of choral music participation.

Your responses will be strictly confidential. There will be no way for anyone to know which statements are yours or some else's. I may present a summary of everybody's responses at a conference, but your identity and your responses would be totally confidential.

I have also notified your parents/legal guardians and obtained their permission for you to participate in this study. If you choose not to participate, you will return to your regularly scheduled class activities. If you choose to participate, you will be given an interview date and time.

If you have any questions at any time, please contact me, Marci Malone DeAmbrose. If you check "yes", it means that you have decided to participate and have read everything that is on this form. You will be given a copy of this form to keep.

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

_____ No, I do not want to participate in the study.

INVESTIGATORS

Marci Malone DeAmbrose, MM, Principal Investigator Office:

Rhonda Fuelberth, Ph.D., Secondary Investigator Office:

Appendix F: Permission Email from Charlotte Mizener for the Questionnaire



Marci Malone DeAmbrose <marcimaloneambrose@gmail.com>

Request for Questionnaire

Charlotte P Mizener <[REDACTED]>
To: Marci Malone DeAmbrose <[REDACTED]>

Tue, Jun 13, 2017 at 12:53 PM

Dear Marci-- I am more than happy to share the questionnaire with you. You are certainly welcome to adapt it as necessary for your research.

I'm also including the link to the full dissertation, if you are interested in looking at it.

<http://search.proquest.com/docview/303910757/13A1D222CF461F3387D/10?accountid=7043>

Please let me know the results of your research. Best wishes as you complete your graduate work and continue in your career in music education.


Sincerely,

Charlotte M.

From: Marci Malone DeAmbrose
Sent: Tuesday, June 13, 2017 10:48:11 AM
To: Charlotte P Mizener
Subject: Request for Questionnaire

[Quoted text hidden]

CONFIDENTIALITY: Any information contained in this e-mail (including attachments) is the property of The State of Texas and unauthorized disclosure or use is prohibited. Sending, receiving or forwarding of confidential, proprietary and privileged information is prohibited under Lamar Policy. If you received this e-mail in error, please notify the sender and delete this e-mail from your system.

 **Questionnaire.doc**
49K

Appendix G: Permission Email from Graham Welch to Reproduce Figure

3/18/2019

Gmail - Permission to reproduce a figure


 Marci Malone DeAmbrose marcimalone@deambrose@gmail.com

Permission to reproduce a figure

6 messages

Marci Malone DeAmbrose

Wed, Mar 13, 2019 at 5:46 PM

To: [REDACTED]

Hello Dr. Welch,

I am a Ph.D. candidate at the University of Nebraska-Lincoln and am currently writing a dissertation on adolescents attitude and perception of vocal music in middle school. In the qualitative portion of my mixed methods study, I comparing responses from students to their voice mutation stage and was wondering if I could have permission to reproduce the figure based on the Gackle and Cooksey mutation stages from your 2006 publication on Singing and Vocal Development in my dissertation.

Thank you for your consideration and I look forward to hearing from you soon.

Sincerely,
Marci Malone DeAmbrose

Welch, Graham [REDACTED]

Wed, Mar 13, 2019 at 6:19 PM

To: Marci Malone DeAmbrose

Sure! Happy to help!
Do you need the original figure? It is on my laptop and I can send this in the morning.
Best wishes with your research. Keep in touch!

G

[Quoted text hidden]

--

Professor Graham F Welch, Chair of Music Education, UCL Institute of Education, University College [London, UK](#)

Chair, Society for Education, Music and Psychology Research (SEMPRE)
Past President and Honorary Life Member, International Society for Music Education (ISME)

See:

- (1) <https://iris.ucl.ac.uk/iris/browse/profile?upi=GFWELO2>
- (2) https://www.researchgate.net/profile/Graham_Welch

-----free access-----

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-----See list of 2017-2019 academic research-based outputs (books/chapters/articles)-----

https://drive.google.com/file/d/1jWujW1WH_thVYuE7WIH5WSM6RYkirKCS/view?usp=sharing

Appendix H: Quantitative Questionnaire

QUESTIONNAIRE: SINGING INTEREST AND CHOIR PARTICIPATION

(Remember, for these sentences, circle true if it's true for you, not true if it's not true for you, sometimes if it's true part of the time, and not sure if you're not sure.)

1. Someone in my family likes for me to sing songs.
2. I like to sing by myself in musicclass.
3. When I hear songs on the radio, I enjoy singing along.

4. It is fun to sing with a few friends or people in my family.
5. I never seek out opportunities to sing in middle school
6. I like tosing when I am all by myself.
7. I think that everyone should sing, not just the singers on radio, TV, or records.

8. I think that when a boy's voice starts to change and get lower, he should continue to sing.
9. I think that when a girl's voice starts to change, she should continue to sing
10. I always seek to find opportunities to sing in middle school

11. Some adults in my family sing in a choir.
12. I belong to a choir.

13. In choir, it is important for the choir teacher to explain all about the notes of a song before everyone starts to sing.
14. I would want to be in choir in high school even if I didn't plan to have a job as a singer or musician when I grow up.
15. As one of my after school or Saturday activities, I might choose to sing in a choir.

16. Choir is as important as other classes like science, math, or reading.
17. I want to be in choir because my family wants me to sing in choir.
18. I don't want to be in choir because it's a problem for me to get to choir practice.
19. It is important for people in choir to like the choir teacher.
20. I don't want to be in choir because I don't like to sing.
21. I want to be in choir because my friends are in it.

22. I don't want to be in choir because I don't know anyone in choir.
23. I don't want to be in choir because I don't know the choir teacher or don't like the choir teacher.
24. I don't want to be in choir because my friends think choir is dumb.
25. I don't want to be in choir because my family doesn't like for me to be in choir.
26. I want to be in choir because I love to sing.

27. I get bored when the teacher explains to us all about the notes of the songs we sing.
28. We have school lunch at nine o'clock in the morning.
29. In music class, I like it when we sing songs from the song books.
30. Someone in my family thinks that I'm a good singer.
31. When I'm at home, someone in my family likes to listen to me sing songs.
32. I'm a good singer.
33. I'm as good a singer as most people in my class.
34. I sing as well as most people in my family.

35. Various voice changes cause my voice to feel "tired" or uncomfortable
36. Various voice changes have not affected my ability to sing
37. I do not experience any vocal discomfort because of my voice changing
38. There are times when I can't sing high because of my voice changing
39. I can't sing all the notes my teacher wants me to sing because they are too high
40. I am able to sing all the notes my teacher wants me to sing without difficulty or voice cracking

41. I don't want to sing because my voice is changing
42. I'm a good singer even though I am going through some voice changes
43. My voice sounds "breathy" or "hoarse" sometimes when I sing
44. I can't sing all the notes my teacher wants me to sing because they are too low
45. All the notes my teacher asks me to sing are comfortable to sing
46. I'm a good singer, but singing has become to feel different than it did in elementary school
47. I like it when we listen to the music teacher tell us all about the notes of a song before we start to sing.
48. In music class, I like to clap the rhythm of the words while we sing a song.

(For this set of sentences, there is no sometimes or not sure answer. Just answer **yes** or **no** whichever is true for you.)

49. Do you go to music class every day of the week?
- SO. Do you like to sing?
51. Do you want to sing in a choir, or, if you do sing in a choir, do you want to keep on singing in choir?
52. Someone in my family sang to me when I was younger.
53. I sing songs with some of my family.

(The next sentences ask you to make a choice about activities you may do in music class. Remember to mark according to how you feel about the sentence. Click only one answer.)

54. In music class, I like it most when 1) we sing songs with the piano, 2) we sing songs with CD tracks, or 3) we sing songs without piano or CD tracks.
55. In music class, I like it most when 1) I get to play guitar and sing, 2) I get to play ukulele and sing, or 3) I get to play drums and sing.
56. The singing games I like best in music class are 1) the ones where we get up and sing dance and move around the room or 2) the ones where we sit or stand at our places and sing and do motions.
57. The songs in our song books are 1) too high and hard to sing, 2) too low and hard to sing, or 3) just right and comfortable to sing.
58. I learn a song better when 1) I sing each little part after the teacher, like an echo, or 2) I sing along with the whole song over and over.

(Finally, tell me what you think.)

59. I think that singing is 1) mostly for boys, 2) mostly for girls, or 3) just as much for girls as for boys.

(Finished! Thank you for participating today.)

Appendix I: Interview Protocol

DeAmbrose Dissertation		
Interviewer: Marci Malone DeAmbrose		
Interviewee:		
Date:	Time:	Place:
Interviewer Introduction		
Purpose of study: The purpose of this mixed methods study is to explore the attitudes and perceptions of eighth grade students toward singing and choir participation in relation to gender, voice mutation stage and method of music instruction		
Obtain Informed Consent		
Any questions before we begin?		
Record Session		

Interview Questions

PRESS RECORD

I understand that you are enrolled in 8th Grade Choir (in afterschool choir), tell me about your experience having choir everyday (once a week)?

ARE YOU RECORDING?

What motivated you to sing in middle school?

Tell me, using lots of details, about the kinds of things you have done outside of class to improve your vocal music education?

(What did you do first?, What followed after being enrolled in vocal music class?, Can you give me an example...Do you use a specific website, social media, spotify...)

How do you perceive your participation in class (in after school choir)? Do you think you spend most of your time socializing or do you focus on the lesson?

(based on answer: Why do you feel you spend time socializing or focusing)

Tell me about a time when something you learned had a positive effect on your decision to keep singing in middle school.

What kinds of things have changed about your voice since you have been in middle school?

Have you ever talked to anyone about your changing voice?

Who do you talk to about the changes in your voice?

Tell me about your current interactions with your friends not enrolled in choir?

What do they think of you singing at school?

Tell me what you do during 8th grade choir (after school choir).

What other things do you do when you feel like singing?

What kinds of challenges (barriers) do you experience when you are singing in class?
When you are singing for fun?

What else would you like to share about your singing experiencing in middle school?

Appendix J: Transcript Excerpt – Code and Quotes

Middle
school is
so easy

choir
doesn't get
in the way

[0:30:15.3]

R: You have to stay in it. It will impact you so much.

choir
might
actually
save your
life

R: Middle school is so easy like choir does not get in the way.

R: Yeah choir does not get in the way but I just like gives you a breather from all the other school work.

QUOTE

do it if you
can afford
it

R: **There are times when choir might actually save your life. Just stay in it cause it makes such a big impact on your life and it doesn't even matter if you're not a musical person, just try it. If you don't like it, you can quit but seriously just try it. If you aren't in choir right now, join. If you aren't playing an instrument right now, do it if you can afford it. But just do something musical because it's such an amazing experience and I couldn't imagine anyone missing out on it.**

R: Get a music app and just randomly sing on your phone.

Music app

R: Yes!

randomly
sing on
your
phone

R: Do you have any more questions?

I do. I have a whole bunch. I love listening to you.

R: This is fun.

Appendix K: Full Transcript

97ED746D-4765-48F8-84C6-34AA937D0850

Marci Transcription

3/12/19

Rebecca Schneider

[0:00:00.0]

I: Alright. We're good. It's going to get a lovely view of me right now. So I understand that you guys are enrolled in eight grade choir. Can you tell me about your experience having choir every day? Rather than like once a week...

R: Should we go one at a time?

R: Yeah-

I: Sure let's do it!

R: I really like having choir every day because I feel like I can hone my musical skills better like you know in sixth grade you only had band once a week and I know that even since sixth grade, I have improved exponentially at playing the flute. And so I think that a lot of the reason for that is because now in seventh grade and now in eighth grade, we have band every day. And I notice the same difference in chorus class. I used to sort of just sing and not think much about it but now I definitely feel like I'm consciously thinking when I'm singing a song. "Ok am I having good voice control? Am I staying in tune? Am I having proper vowels?" Things like that. So I definitely think it makes you think more about what's going on rather than just singing just for the sake of singing.

I: Right yeah.

R: I love singing and I love the group. We've all become a kind of chorus family and it's really a fun place to be. We always- like I love singing and getting to sing every day, it just makes my day better and just I love starting my day off by singing and being with a cool group of kids.

I: Awesome!

R: It's nice that we have it first period because we just get to come in every morning and you know like schools like ehh- no one likes school that much but its--.

R: [unintelligible- all talking over each other and laughing]

R: It's fun to get to go to a fun class at the beginning of each day. And it's nice because yeah I can sing at home and stuff, but I don't have someone there telling me how to improve, but when you're in class [teacher 1] can tell you how get that groove.

R: Pretty much the same for me. I just love singing so much and it just gives me a good outlet for creativity and stuff. And then, it really helps me to get better cause I'd like to do something with singing when I grow up, hopefully.

I: Awesome.

[0:02:36.1]

R: Yeah I've always been like a very like artsy person and like the musical theater and singing type of place more than like painting, I don't do that, but I really like having it first period cause I think of it like my first period I can just relax and do something that I really enjoy. Then, the rest of my day I have to do like actual stuff. So it's just more of a breather to prepare myself and it's just really fun cause I just love everyone that's in choir and it's a lot of fun always.

R: So I like, in seventh grade I went from singing twice a day, well once a week for morning choir and then now singing every day and it's like improved my voice so much and I know more things like how to improve my voice when I'm at home. And we're all sort of like a group family

in chorus and it's really great. I love singing every day. Just like when I walk into school and-- or when I don't have school, I'm like "crap I missed chorus first period" because it always makes my day and if I have like a crappy day started off at home, I know I can come to chorus and it's my outlet where I can- there's always positive energy.

R: I think [teacher 1] influences on that positive energy. He always just tries to get us up with spirits moving, that sort of thing. I started singing in sixth grade and its... how do I say this?... It's improved, I guess I could say--.

I: Awesome.

R: So pretty much like yeah... I'm sorry.

I: Am I making a funny face? Is that why you're laughing?

R: No.

I: Sometimes I do that.

R: Yeah. [School 1]'s really improved as like [School 1] has improved me. I guess I could say. From starting in sixth grade having such a high voice to having the voice I do now.

I: Oh the changing voice? Yeah sure.

R: That [unintelligible- clears?] into it but like [teacher 1] is super nice and helpful and supportive.

R: That's the big thing, is I feel like if there's one thing that [teacher 1] does really well. You know he does it for the girls too but one thing that's really nice is he really pushes guys to sing and he gives so many incentives. And I feel like that's a thing that a lot of other schools don't do. They expect "Oh girls are probably going to be the only people who sing anyway. Guys generally have too many more sports going on." But one thing I really like about [teacher 1] is that he works with staff and makes sure we have time to practice as guys, because he understands

that sometimes maybe sports getting in the way or other events and he really tries to make sure guys don't lose that musical aspect in middle school.

R: He also tries to like... what he explained, I think it was last week, "We're not just like any other middle school." Most middle schools just like expect "oh you can sing this at a pretty good volume" he's like, "can we take it up another level?"

R: He has a higher expectation for us.

[0:05:53.3]

R: Without him, we would not be as good as we are and I'm just like really proud of how amazing our choir is and how we can just like try out and try new things and try new songs that he's like... but we learn how to do them and it's just like really nice that he doesn't have low expectations and just settle for less. It's really nice.

R: Yeah but also be really honest with us like after a performance if we don't do the greatest... He won't be just be like "Oh! You did great!" No, he'll tell us if we did something wrong and I truly do appreciate that because we wouldn't really get better if he kept saying that even if we messed up, we did great. Like we tried but we could have obviously done better.

R: He... yeah I like that he gives criticism. It just helps you to know, this is what we—you did wrong, you can improve, here's how to do it.

R: It's like what we did good. Cause we always like had something that we did well.

R: There's always something that we did wrong.

R: Another thing that it does is it sort of builds more of a trust between teacher and student. So rather than thinking "oh I don't really even have to try in this class because he is going to give me a good grade no matter what" no, it feels more like "oh wow. I actually have expectations that I have to live up to" you know cause sometimes it's easy in other music classes like in music

class in elementary school, it was just sort of like can you make a sound with your voice? Good job you get a 4, but here it really is a lot more “can you match pitch? Are you putting actual effort?

R: Are you not trying? Are you improving?

R: Yeah it’s amazing.

R: What kinda goes along with that’s that nice, is that he doesn’t- when there’s like- when you can tell there’s a song that supposed to be sang a certain way, he won’t just tell us to sing the pitches or sing the notes, he’ll either teach us or tell us to sing it a certain way and he’ll keep pushing on it, if we don’t get it.

R: One thing that’s so nice, we sang two Latin songs last quarter, one of them was Kyrie and one of them was a song called Ad Astra and you know I have heard so many middle schools and elementary schools- I’ve even heard high school choirs do this. Where they pronounce everything wrong. You know instead of saying “Ad astra per aspera” they say “ad astra per aspera” and one thing that [teacher 1] really pushed us with was form your vowels correctly, pronounce your consonants the right way. And I feel like that immediately took our group from like here to here because most vocal music teachers they just be like “you know, kids don’t like to do that. It makes them feel vulnerable.” But one thing I really like about [teacher 1] is that he... if a song is supposed to be performed a certain way, he performs it that way and if we can’t perform it exactly that way, he does it to the best of our abilities.

I: Well thank you so much for all of this feedback-.

R: I feel like we might have gotten off track.

[0:08:56.2]

I: No. I am- I am in- Yes thank you. Please continue to be candid like this. I really appreciate all this information. What motivated you to sing in middle school?

R: You know and I know! So...

R: I do?

R: Yes you do. Do you know why? Cause in elementary school we had the best music teacher ever!

R: Yes!

R: Yeah we had the greatest!

R: [Teacher 2] was the best teacher ever!

R: Ok so first of all, one thing that I think helped was that she started the same year we started kindergarten. And so the thing was that we had much more of a special bond with her. You know we were her first class, we developed a relationship with her but the other thing is that she really made us feel like she cared.

R: Cause she did!

R: Cause she did! And she really made us you know... she engaged with her class, she didn't just say "oh you know this is a music class. I don't want to be here as much as you don't want to be here." No, she really engaged us, she really taught us how to sing properly. She engaged us in a lot of group activities. And so, for me personally, at that time, elementary school was like the worst home experience that I ever had and so one of the great things about vocal music for me was it was sort of a chance- it was the high point of my day, especially in second grade. I didn't get along with a lot of my teachers and the greatest thing about vocal music was that it was the one class where I had a teacher who just genuinely cared about teaching music and I felt like I could enjoy myself in that class. It was really the highlight of my day, most days and possibly the

only good part of my day, most days and so that's what I just absolutely loved about vocal music.

R: [unintelligible- talking over each other]

R: I love [teacher 2] and she truly did- I wasn't like the best singer ever but like I didn't really enjoy singing as much as I did until I had her and she would just encourage me and she made me love singing and I like have grown so much in that class and its- she's the only teacher that like- I would just sometimes randomly go over to- cause I live close to the elementary school, I'll just go and talk to her for a little bit. I like helped with an after school class with her and it was just- she's such a great teacher to make a student want to go back just to see her is like amazing. And I've like- I love singing and I feel like she's definitely a big part of that and I'm sad that she's retiring next year.

R: She is?

R: She's retiring- I know!

R: She's only been teaching for like-.

[0:11:50.7]

R: Well she taught at a different school before.

R: Ok well, I didn't go there but I had a really good music teacher too. None of you guys went to my elementary school. This is sad. Her name was [teacher 3] but so we had our fourth and fifth grade choir there. It wasn't very good because it was an elementary school choir but... I remember my brother was in middle school and so my parents would make me go see his concerts here cause he went to [School 1] and then I'd be like "Woah. Woah that was good" so I think that encouraged me that when I came here I was like- and it was also kind of the same where my parents always talked about how good my brother was and I was like "my turn!"

R: And now you're at this place and now you're like "Woah that's [unintelligible]"

R: Pretty accurate. But I think that was what really did it.

R: So [teacher 2] definitely impacted me a lot like- when I think back to elementary school, one of the first things I think about is [teacher 2]'s music class. And whenever I go back, I always want to go in there and I just like remember everything and it's so great. So that definitely made me want to go do choir here and I mean like I didn't really have an older sibling that did choir. I had an older sibling but she just doesn't like singing so- but I didn't really have that experience but I just knew from elementary school, I just knew that I wanted to do choir cause it just sounded like so much fun and I love singing so yeah.

R: Now I wanna go see her.

R: I know I do too. Can we just like skip school and go see [teacher 2]?

I: I do not condone that.

R: Well for me, like I said, I've always loved music and choir has always been something where usually kids would be like "ew I have to get up and go sing?" I'd be like "I get to get up and go sing!" Like I am so excited and it's just like I said, it's always been something I've loved and just one of my biggest passions and something that I really enjoy doing and it just makes my day always and in sixth grade, I got here and [teacher 1], like we said, was so supportive and amazing and he was like- he would always tell us- I just really like getting criticism because I can get better so he's really good at that and... and I think I answered the question but-.

I: Yeah! You sure did yeah.

R: So what motivates me to sing is probably my family because both my mom and my dad's side, they're super musical and so they've always encouraged me to sing and since I'm the oldest in my family and have no one to look up to, I want my sisters to keep singing cause I have two

younger sisters. And I want them to keep singing and they're like- I influence them more than my mom does so I just want them to keep singing and so I keep singing and when I was little, I went to this preschool that had a bunch of music stuff. It had xylophones and shakers and everything that we- we would just be able to play around with it when we had outside time and I loved doing that with all my friends and with all the musical instruments and we would always have circle time where we would always sit down and just sing songs and I just loved that feeling of singing and then I would- my mom would take me to- cause I had- my cousin went to [School 2] so we would always go see her performances and I would be like "Whoa I

[0:15:45.1]

want to do that" so lead me to keep singing and then in middle school, I love singing in middle school. [Teacher 1] is just so supportive of everything that we do so yeah.

R: Like the others, I am influenced by [Teacher 2] also.

R: Yes of course.

R: Of course. I don't know, there's something that I just liked about her the first day that I met her. I'm just like "She's so cool!" So I don't remember. I think I was in fifth grade, she said "Hey [respondent] can you come after school?" So I went after school to her classroom- I walked in and she said "there's this summer camp for incoming sixth grades, seventh graders, and eighth graders at [School 1] middle school" and she liked to go. So that's where I met [teacher 1].

That's where [teacher 1] came into my life, for that summer camp cause I sang there. But it was like, we had four weeks to sing I think...

R: Yeah something like that.

R: I remember that he was like the greatest and it was like really refreshing.

R: And then, he's just like- I don't know, he's just like super cool about everything that we did, even if we made a mistake, he was like "here's what you can do better" So [teacher 2] influenced my singing obviously and then she introduced me to [teacher 1] at [school 1] so then I just came here in sixth grade and I'm just like- I remember the summer classes and I was just like "I want to sing so..." That's where it's come from.

R: Why do I have the feeling by the end of this we'll be crying?

R: Yeah definitely.

R: Remember on the last day of fifth grade, everyone came up and hugged [teacher 2]!

R: Except for [student 1] and [student 2].

R: Except yeah-.

R: I feel like singing-.

R: I was singing and crying and laughing all at the same-.

R: I know! Yeah-.

R: On the choir concert I'm going to be bawling-.

R: I know! At the last choir- I'm going to be-.

R: No you remember that girl last year- That girl last year that came up to the microphone and was like-.

R: I'm just going to be sitting around like I don't know what to do everyone's crying-.

R: Should we-.

R: [Unintelligible- all talking over each other]

[0:17:56.2]

I: From what you guys are saying, it sounds like you-.

R: We have a really close emotional bond.

I: Yeah-.

R: With [teacher 1] and singing choir.

R: And [teacher 2].

I: Do you guys mind if I ask you a couple more questions?

R: Yeah!

R: Yeah of course!

R: Sorry!

I: No no we have- I'm so glad that you guys are able to express this so eloquently so I appreciate all of your comments here. So tell me using lots of detail, which I know that you're good at, about the kinds of things you've done outside of class to improve your vocal music education. So what did you do first, what did you do after you enrolled in vocal music? Can you give me examples? Do you go to like a website? Do you go to YouTube? So what do you do outside? I know some of you mentioned that you went to concerts outside of class but what I'm looking for is how you improve your voice outside of class.

R: I guess one thing that I do-. I do two. One thing on a daily basis. Which is I'm very religious so on a regular basis, I just have to sight read hymns. So that's been really good for my sight reading skills.

R: Aren't you trying to memorize the [book 1]?

R: Yep! And so I actually have a bible camp at home and so modal music especially, I feel like is really good for learning how to sight read and so that and also just regular hymns having to sight read those once a day has been really good for learning sight reading skills. And then another thing is that I try to at least every two weeks, take the choir songs that we are singing in choir

presently and play the recording, sing my part and record myself singing so that then I can play that back and listen for what I can improve on.

I: And then when you say play the recording is that something that you find yourself?

R: They have recordings- like part tapes on the google class group and so yeah. And then I just make sure how strong is this? Do I need to take it back a little bit at some points? Are the dynamics good? Is articulation good? Stuff like that. Can I hear all the words? So that really helps, especially as its getting close to concert time just being like “ok what can I improve on?”

I: Excellent.

R: I am like constantly singing. I’ll just go home and I play my ukulele all the time and I even brought it to class today. I’ll just- sometimes I like to even make up my own songs and stuff and I’m like just constantly singing and blaring music in my room and screaming the words. Like [respondent] I do like to

[0:21:02.9]

sometimes- like when we get closer to a concert, then, I like to practice sometimes and see what can I improve on. Sometimes I’ll ask my parents- like talk to them and see what they think I can improve on and stuff.

R: I don’t know how to start this. One way that I do is like [respondent] I play the ukulele and I mess around on it. I haven’t as much recently cause I play guitar even though I’m not the best at it. But I still mess around on it a lot. I’m pretty sure my parents don’t like it that much because I’m constantly in my room like a little angsty teenager just playing my guitar. Me and my dad like to jam out on the harmonicas every once in a while. My grandpa is really into music so every time I go see him we always play guitar and I play ukulele sometimes. I watch my- well I

call him my baby brother but he's four now- His name's [brother's name] and I have to watch him and stay home a lot. Alone with him a lot. So I'll just turn on karaoke and sing together.

R: Same. Except my brother is three.

R: They should be friends.

R: My sister is five.

R: We should put them all together!

R: My brother is sixteen!

R: So yeah it's pretty great.

I: So you have to take care of him a lot then?

R: Yeah. No like I'm not even joking. I actually have to. My brother and your brother used to be friends.

R: Yeah.

R: And then my brother has done many things that are really questionable. He broke my plate that I painted in like second grade because he put in the microwave for like two minutes and he was like "oh it's not going to be too hot. I'll just use coffee filters to hold it." Yeah he's not the brightest.

I: I have a brother too. I understand. What about you? Can you tell me some things that you do outside of class to-?

R: So I'm in theater so I- there's- so whatever I can get into a show I always just practice that all the time and then for a while, I had a voice coach but then she moved so I couldn't do that anymore. Anyway, sorry, yeah I just like to randomly listen to music on my phone and sing so. Not a lot of other people in my family are musical so I kinda just have to do it on my own but yeah.

R: Do you play [organization 1] or go to [organization 2]?

R: [Organization 1].

R: So for me I took piano when I was like five, which I hated but it helped me learn how to read music and with that if I didn't take piano, I wouldn't know how to sight read as well as I do. I've taken voice lessons since I was probably seven or eight and that's definitely trained my voice into knowing how to

[0:24:31.3]

hold notes and sing correctly and sing like loud and quiet and high and low and it's just like- my range is a lot better than it probably would be if I didn't have my voice lessons teacher. It's something I don't necessarily look forward to going to but after I leave I'm like "thank goodness I go to this" because for a year I didn't go and I could tell that my voice definitely didn't sound as good as it did when I did go so I obviously went back and it definitely helped a lot.

I: Awesome.

R: My family is very musical so me and my mom and sometimes my sisters. But me and my mom will just constantly just break out into song. We'll just be singing. We'll like play- cause we're super into musicals so we'll just play musicals and the songs that we know super well and we'll just break out into song and just sing them. Or like anybody in my house, if you walk into my house, there's always somebody singing. It's usually me but sometimes it's my mom. So I did piano and that helped me sight read a lot better but I hated piano so much. And then I had- then I did voice lessons in sixth grade and then I didn't do it in seventh grade and I was like "Why am I not doing this? I sound horrible." So then I went back and I'm doing voice lessons now and I can just tell- I'm sick right now- but I can tell my voice has improved so much and so

I'm very thankful for that and then like [student] says, sometimes I do go home and practice when its gets to concert time and music and stuff so once in a while I'll do that.

R: So I did the [organization 3] from- I started in fifth grade. Which the [organization 3] is a choir group that have three stages. I forgot what the stages are. I've been out of it for a while. Because I came to middle school and I thought I wouldn't have anytime cause we met once twice a week so I thought I wouldn't have any time to get homework done, study that sort of thing.

R: Middle school's so easy.

R: Yeah I'm not ready for high school.

R: So I did that for a while and that definitely improved, helped me a lot. I played the violin. I played the piano. I still often play it sometimes. Oftenly, I pick up a book and play music out of it. My parents- I don't know- my mom played the clarinet and my dad played the saxophone.

[Phone rings]

R: Should we answer that?

R: Yeah should we answer that?

R: It's right behind you.

I: Hello? No she's not here. Ok thanks! Bye.

R: So my mom played the clarinet in high school and my dad played the saxophone and since then they fell in love with a band called the Avett brothers. So they will not stop singing to Amazon Alexa.

I: The what brothers?

R: The Avett A-V-E-T-T brothers.

[0:27:58.5]

I: A-V-E-T-T

R: So I've been to a couple of their concerts, they're actually pretty good. So yeah, I'll come home and my mom's like cooking dinner and I'm like "But you're just singing to the Avett Brothers and cooking" I'm just like "Ok that's nice"

R: Ok I forgot one kind of major thing. I kinda forgot that I played viola for five years of my life and then I looked over there in this room and was like "Oh yeah!" but I quit.

R: Oh yeah I played cello for five or six years, so I kinda forgot that too.

R: Also, like I'm pretty sure I'm actually addicted to music cause I'm constantly listening to it and the way I get through school is I'll just sing a song in my head the whole day but like we're going on a trip- well I am- I don't know if-

R: Yeah I am!

R: Some people here are going on the [location 1] trip-.

R: Yeah [location 1]!

R: I remember there's this Bonafide app or whatever for music and I didn't have Spotify premium so I was like "Ok mom I need to get this free months subscription because if I don't have music on the plane, I don't even want to go".

R: There's a legal Spotify premium.

R: I know I tried to get it but it-.

R: how do you get it-?

R: Ok let's not talk about this now-.

R: Ok subject change! If any like fifth graders or like fourth graders are like reading this research paper, and they're like "man I don't want to play music anymore. I'm not going to have time in middle school. Don't they give you like a bunch more homework?" And it's like no!

R: NO!

R: No they don't.

R: They give you less homework!

R: Please please please do music. If you're doing music right now, do it because I actually know kids who are like "yeah I quit music entirely and I'm kinda sad". And I know people in my family who are like "Yeah I quit music in middle school and I kinda wished I would have stayed" and I know other adults who are outside my family who are like "man I quit music in middle school. I really wish I would've kept doing it".

R: Stay in it!

[0:30:15.3]

R: You have to stay in it. It will impact you so much.

R: Middle school is so easy like choir does not get in the way.

R: Yeah choir does not get in the way but I just like gives you a breather from all the other school work.

R: There are times when choir might actually save your life. Just stay in it cause it makes such a big impact on your life and it doesn't even matter if you're not a musical person, just try it. If you don't like it, you can quit but seriously just try it. If you aren't in choir right now, join. If you aren't playing an instrument right now, do it if you can afford it. But just do something musical because it's such an amazing experience and I couldn't imagine anyone missing out on it.

R: Get a music app and just randomly sing on your phone.

R: Yes!

R: Do you have any more questions?

I: I do. I have a whole bunch. I love listening to you.

R: This is fun.

R: Oh we have ten minutes. Whoops.

R: Can we just be late for second period?

I: I know it. You guys get out at 50?

R: 2. 52.

I: 52. Ok.

R: But so we probably need to be done by 50.

R: We're taking a test today so we don't really need to be in [teacher 4]'s class.

I: This- You're taking a test in your next period?

R: I am.

R: I'm not.

R: We're not.

R: We have a fun period next period, so...

R: Hey you're in my class!

I: So let me ask you this: this might be- let me ask you this, so what kinds of things have changed about your voice since you've been in middle school?

R: I have the weirdest thing. So like in sixth grade, I could sing like a low F on the piano and I could only sing up to maybe a C in the middle of the bass clef. Like my voice just went down and now I can't sing

[0:32:11.7]

that F anymore, like my lowest note is maybe like the A at the bottom of the bass clef that still sounds nice, that I can sing effectively. And then, my highest note is like an E above the bass

clef. So my voice just sort of shot way down and I think now it's started coming back up and sort of settling into what my permanent voice is going to be really. I hope so. Cause this has really been a sort of roller coaster cause like in fifth grade, I could sing like to the top of the scale and out of the treble clef and all of a sudden in sixth grade, it just dropped all the way down and now were in seventh grade, we're starting to get to that middle ground.

R: We're in eighth grade, [respondent].

R: Yeah, we're in eighth grade.

R: You said seventh.

R: My life is a blur. Middle school has just been like "what's even going on?"

R: I don't know. I definitely used to be able to sing a little bit higher but my voice wasn't as good. It was just like a kid voice, you know, they're never perfect. I mean sometimes but like... I think after choir and like working hard to get better, my voice has definitely gotten better. It's not perfect but it's getting up there.

R: You just insulted my little brother. I'm going to have to beat you up.

R: You could have been Emily Bear. You could have gone on the Ellen show and written a new song for Ellen DeGeneres.

R: I'm down.

R: You learn ukulele earlier and you could have written that song and been on the Ellen show.

R: Ugh now I can't be on Ellen!

I: What about you? What kinds of things have changed about your voice since-?

R: Well, I know that I don't remember much, I just remember singing. I don't remember much from when I was a kid and what I sounded like because I probably thought I sounded like the best person in the world so I mean, if you're going from my mind perspective, when I was a kid

and I was singing, then my voice has probably gotten worse. But if you're thinking about it from a reality perspective, it's definitely gotten higher, but it's also gotten lower and I think that's- the lower part, I think that's cause I like songs for guys to sing a lot more than a girls thing so I always try to sing them but it's too low half the time so I'll just be like... but I think that's helped my voice get a lot lower.

R: In my head, my voice sounds a lot lower than it actually is so I know- I'm pretty sure my range has gotten bigger, like since elementary school especially. Which is great. But I don't really know how it's changed, like if it's gotten lower. I feel like in my head it's gotten lower but maybe I'm saying that cause I'm sick right now. I don't know.

R: You know it could be that you're just letting more space down here and so you associate that with a lower sound but it's actually just the ear quality.

[0:35:33.2]

R: I don't know but when I listen to a recording of myself, it's like way higher than I actually think it is. I think my range has gotten bigger so that's good. Or longer or whatever.

R: This is going to sound like I'm full of myself but I've always been a pretty good singer, but there's always room for improvement so I've always worked on improving it to the best of my ability and I've always worked as hard as I can on it. And I'm really proud of how I sing and I think it's like pretty good. And so yeah but he's just helped me make it better and my range is like- I think it's decent, it could probably be better. I can't sing that low. I think it's like an F or a D below the middle C and then like a high C or something like that. Somewhere in there. That's all.

R: I've been a pretty decent singer but my quality has improved a lot since I was in third grade. My quality has improved a lot better and my range has improved because in third grade, I really

couldn't sing that high, I was always in alto, or what you would consider an alto. But now, I can sing pretty decently high and I can also sing low so like my range, I'm going to say is pretty low. So my voice has changed a lot so yeah.

R: Real quick- I feel like one of the reasons that all of our ranges have gotten pretty big is because [teacher 1] doesn't pin point us on one section. He'll like say "ok you're going to be an alto this semester and then the next semester you have to be a soprano" because it really opens us up.

R: Like if you're in morning choir and you're an alto or soprano, I know this is some case for most people, but if you're an alto in morning choir you will probably most likely be a soprano in class, if you're in the class so he just tries to even it out. Because he said like in high school you get a lot more opportunities and a lot more chances getting into the group if you can sing both. When you say "oh I'm only a soprano or I'm only an alto, they're probably going to choose a person that can sing both over a person thinks that they can only sing soprano or alto.

R: I can sing both tenor and bass. Like [student] said, my voice has been like from super high in fifth grade to like lower, I can still sing pretty high notes in tenor, cause I'm a tenor but I can also sing the alto page, I guess. What was the other question? I forgot.

I: Oh yeah! Just how has your voice changed in middle school?

R: I don't know it just has.

R: You know one thing that I've noticed and this isn't a thing for me personally but for other people, a lot of guys, especially in middle school- you know a couple girls had this problem just because of range issues. A lot of guys struggle to match pitch in middle school.

R: That's very true. I cannot match pitch sometimes. It's kinda hard for me to match pitch.

R: When there's only a baritone line, so many guys, I think, try to hit the note and don't use quite as much air as they should and they really really try but they're embarrassed I think to put forth that extra air and to actually sing high. I don't know if it's like a masculinity thing or if it's just not wanting to maybe show themselves to be capable of singing cause they think they're too cool for singing or maybe it's just a physical incapability to put forth that much air to reproduce that sound. But a lot of guys really struggle to reproduce a given pitch. And so a lot of times, especially in the tenor section, we have about

[0:39:29.7]

one maybe two singers who sing the actual part and then everyone else is just sort of giving this little murmur underneath and it really hurts the quality of our sound and I think we maybe need to either move more tenors into the bass part so they can sing a part that they can actually sing or encourage tenors to sing because they have the capability to sing that high and not too hide it because they think they're too cool for choir or because they're embarrassed.

R: We're we supposed to sing for you?

I: Yeah so, what I was going to ask you guys. Who are those that have to do the test next period and who has a free period? Ok so who are the test people?

R: I have a quiz but I can come back.

I: Ok so you three, let's do your singing test right now. You four, can I write you a pass?

R: Yes. Yes please.

R: I mean we're not going to start the test immediately when we get into class so we can probably have a pass. If we have a pass we'll be fine.

R: Cause [teacher 4] is pretty chill.

R: Yeah she's so chill.

I: So while we're doing the singing tests, I just think that it might be a little bit more comfortable for everybody if I just did it one on one. Is that cool with you guys?

R: Yeah.

R: I could care less.

I: I know. I know you guys sing in front of each other all the time so if I could just maybe have you stand out here maybe in the stairs or something. I know it's not the most convenient-.

R: Wait who's starting?

I: Yeah whoever has a test first, just go ahead and say in here and-. You wanna go first, [respondent]?

R: Sure.

I: Ok. So can you just count backwards from 20 for me?

R: 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 -1...

I: So what I was testing for right there was your fundamental speaking pitch and its middle C. I'm going to start by going up from middle C. So we're just going to go [sings]

R: [sings]

I: Excellent! And now we're going to go down.

R: [sings]

[0:42:33.7]

I: Ok. Here's your range right here!

R: Yay!

I: Yeah well done. Ok thank you so much for participating today. I appreciate it very much.

R: So now what? Do I just go out-.

I: Yep go back to class. Do you think that you need a pass?

R: Possibly yeah.

I: Ok.

...

I: You guys got me thinking about the Trolls movie.

R: Why?

I: Harmony. Harmony. You're [respondent] right?

R: Yeah.

I: Ok I just wanted to make sure.

R: I mean there was only one guy left.

I: Sorry! I know. Ok so what I need you to do it count backwards from 20. So just 20 19 just like that.

R: From what?

I: Just in your speaking voice.

R: Ok 20 19 18 17 16 15 14 13 12 11 8 7 6 5 4 3 2 1

I: So what we're going to do is we're going to start from your fundamental speaking pitch.

R: I have asked people about this and nobody has been able to tell me about it! What is that? Cause I want to know so much about this!

I: Oh so your fundamental speaking pitch is where you feel comfortable saying things and so it's just a really good place to start vocalizing.

R: Ok thank you. Cause like I was trying to research this this summer. I was like "what pitches do people use when they talk?" and like hello, I mean that's a third when you talk to somebody.

So yeah I just wanted to know that cause I was researching this summer and even asking the band teacher and my vocal music teacher and nobody could tell me. Thank you so much.

I: You're welcome. So your fundamental speaking pitch is the D above middle C so we're going to start right there and just go and we're going to go up [sings]

R: [sings]

[0:46:40.6]

I: So start right here at this pitch [sings] right here [sings]

R: [sings]

I: There you go.

R: [sings]

I: Very good!

R: [sings]

I: Very good thank you. Now let's switch to go down.

R: [sings] That's my lowest note.

I: Holy cow!

R: If you try to ask me to sing the beat, it'll just be a vocal fret.

I: Holy cow wow! That's quite a range, sir. Especially with a fundamental speaking pitch of

D. Ok so I can tell that you go and practice... so yeah for sure. So if you are interested actually, mapping your voice or keeping track of your fundamental speaking pitch, go to

Praat P-R-A-A-T that's a computer program that'll measure it for you.

R: Ok cool.

I: We'll see you. Oh you need a pass sorry.

R: I do need a pass. Thank you for remembering. Thank you, have a good day.

I: You too.

...

I: Can you tell me your first name?

R: [respondent]

I: Here we go. Ok [student], can you count backwards from 20 for me? 20 19 like that.

R: 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

I: Ok so let's start here. D sharp is your fundamental speaking pitch so let's go [sings] we'll go up from there. Ok?

R: [sings]

I: Very good thank you. And let's go down from there.

R: [sings]

I: Ok perfect thank you so much. And you need a pass. There you go dear. Thank you.

[0:51:00.0]

...

I: And what's your first name sweetheart?

R: [respondent]

I: [respondent] OK.

R: I did not take an allergy pill this morning so that probably wasn't the best idea.

I: I get it. It's that time of year, I'll tell you what.

R: And I snuggled with my [pet] last night and so I woke up with really puffy eyes.

I: Oh no!

R: And I still didn't take an allergy pill, cause I'm not the brightest person in the world.

I: No you're fine. Can you just count backwards from 20 for me? Just 20 19 just like that.

R: 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

I: Your fundamental speaking pitch is F. F above middle C. So we're going to start there and you're gonna go [sings] Can you do that with me? Good now you.

R: [sings]

I: Awesome you sound great.

R: [sings]

I: Ok then we'll go down from there. Ok? And [sings]

R: [sings]

I: There you go thank you. And you are all good. There you go.

R: Thank you.

...

R: Hello.

I: Hi. How are you?

R: I'm good.

I: Good thanks for doing this. And you are [respondent] right? I love that. Just count backwards from 20 for me. 20 19 like that.

R: 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

I: Your fundamental speaking pitch is F. There you go. We're going to go up from there.

[sings]

[0:54:37.9]

R: [sings]

I: Ok and then let's go back down. From your fundamental speaking pitch.

R: [sings]

I: Thank you. Appreciate your help today that was awesome. Your range is F below middle C to a high A.

R: I was right!

I: Yeah! And your fundamental speaking pitch is F. So when you do warmups, if you start at F it'll make you feel more comfortable.

R: Ok can I have a pass?

I: Nope I want you to be late. No of course you can. Thank you.

R: Thank you.

...

I: Hi.

R: Do you want us to stay in a do more questions?

I: No actually I have two more people coming from second period.

R: Who's coming from second period?

I: I don't know. And can you tell me your first name again dear?

R: [respondent]

I: [respondent] I loved your comments about "we're always singing in my house" because that's the way it is in my house too.

R: Yep! Always singing. Always singing. My dad gets so annoyed because he doesn't sing so he's like "stop!" and we're like "no!" OK I'm sick so I'm sorry, I probably will voice crack like ten times.

I: It's totally fine, I'm sick too. I get it. So can you count backwards from 20 for me?

R: 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

I: Thanks, [respondent]! Your fundamental speaking pitch is D sharp. So when you're warming up if you start at D sharp, it might feel more comfortable for you, OK? So we're just going to go down from here. We're actually going to go up from here. [sings]

R: [sings]

I: Thank you! And then- I am... And then we're going to go down from D sharp.

R: [sings]

[0:59:11.7]

I: That was the last, yeah. So awesome! D to C. D right here to C right here, is your range.

R: OK that's pretty good!

I: Yeah. I'll see you later, [student]. Thanks so much for participating today.

R: A pass?

R: Oh sorry yes! I don't know why I keep forgetting that. There you go.

R: Thank you.

I: Thank you. Hi there! Are you my next interview?

R: Yeah.

I: Hi I'm [interviewer]. I'm going to be down in just- probably like five minutes. OK?

Come on in. How are you?

R: I'm good.

I: OK let's see here.

R: Just so you know, I won't sound very good because I'm sick.

I: Oh you know what? I think it's gonna be great. I just have to find your sheet here.

Here's your sheet! [Student] right?

R: M-hmm.

I: OK. [Student last name], are you related to [Person 1]?

R: I don't think so.

I: No? OK. Can you count backwards from 20? Like 20 19 like that.

R: 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

I: Your fundamental speaking pitch is F. So we're going to start there and we're going to go up. [sings]

R: [sings]

I: You sound great thank you. OK that's good! That was an A, so awesome. So I said fundamental speaking pitch was F and highest note is A. Alright we're going to go down.

R: [sings]

I: Excellent. Thank you so much for doing this today. I really appreciate it. You're all done and you need a pass. OK. There you go dear. Thank you.

R: Thank you.

[1:02:29.1] [End of Recording]

Appendix L: Spreadsheets for Codes and Themes

STAGE IIB	STAGE III F	STAGE III M	STAGE IV
Makes my day better	get better	teacher positive energy	skill improvement
cool group of kids	outlet for creative stuff	school have improved me	vocal technique
First period	singing as future career	voice change	I love singing
singing with peers	Love singing	high voice to voice I do now	teacher pushes guys to sing
begin day with a fun class	first period	not like other middle schools	guys have too many sports going on
ensemble as family	peers	trying and improving	trust between teacher and student
improved my voice	it's a lot of fun	take it up another level	form vowels correctly
higher expectations	elementary teacher	elementary school teacher	pronounce your consonants
criticisms	love singing	summer camp	Best teacher ever in Elementary school
teacher feedback	singing is biggest passion	super cool teacher	special bond (elementary teacher)
keep pushing on it	criticisms		feel like she cared
supposed to be sang a certain way	crying		worst home experience
amazing choir	close emotional bond		music high point of my day
proud of choir	music on my phone		sight reading skills
visit former elementary teacher			record myself
makes me love singing (elem)			bible chant - in transcript Bible camp, changed after member check
grown so much (elem teacher)			modal music
parents took me to older sibling concerts in MS			part tapes on Google classroom
family motivates me to sing			choir might actually save your life
want younger siblings to keep singing			do it if you can afford it (band)
music during outside time			Stay in choir
love singing			
supportive of everything that we do			
crying			
hate piano lessons			
constantly singing			
ukulele			
practice choir music close to concert			
make ups my own songs			
guitar			

Appendix M: Full Integration Table

Table 17

Data convergence table by quantitative category and frequency

SI	Code/Theme	Alignment
I like to sing by myself in music class. (Not True, n=322, 53.9%)	Love Singing	Contradict
When I hear songs on the radio, I enjoy singing along. (True, n=364, 61%)	My Phone	Confirm
It is fun to sing with a few friends or people in my family. (True, n=274, 45.9)	Parents Sing	Confirm
I never seek out opportunities to sing in middle school (True, n=243, 40.7)	Stay in choir	Contradict
I like to sing when I am all by myself. (True, n=341, 57.1%)	My Phone/ Make Up My Own Songs	Confirm
I think that everyone should sing, not just the singers on radio, TV, or itunes. (Not True, n=171, 28.6%)	Stay in Choir	Contradict
I think that when a boy's voice starts to change and get lower, he should continue to sing. (True, n=360, 60.3%)	Range/Voice Change	Confirm
I think that when a girl's voice starts to change, she should continue to sing (True, n=382, 64.0%)	Range/Voice Change	Confirm
I always seek to find opportunities to sing in middle school (Not True, n=322, 53.9%)	Love Singing/ Makes my day better	Contradict
I can't sing all the notes my teacher wants me to sing because they are too low (Not True, n=282, 47.2%)	Range/Voice Change	Mixed
I think that singing is 1) mostly for boys, 2) mostly for girls, or 3) just as much for girls as for boys (boys & girls, n=495, 82.9%)	Stay in choir	Confirm
CP		
Some adults in my family sing in a choir. (Not True, n=454, 76%)	Parents Sing	Mixed
I belong to a choir. (Not True, n=361, 60.5%)	Stay in Choir	Contradict
In choir, it is important for the choir teacher to explain all about the notes of a song before everyone starts to sing. (Sometimes, n=229, 38.4%)	Pushes Us to Sing/ High Expectations	Enhance
I would want to be in choir in high school even if I didn't plan to have a job as a singer or musician when I grow up. (Not True, n=268, 44.9%)	Stay in choir	Contradict
As one of my after school or Saturday activities, I might choose to sing in a choir. (Not True, n=375, 62.8%)	Makes my day better	Contradict
Choir is as important as other classes like science, math, or reading. (Not True, n=244, 40.9%)	Stay in choir	Enhance
I want to be in choir because my family wants me to sing in choir. (Not True, n=464, 77.7%)	Parents sing/ Concerts	Contradict
I don't want to be in choir because it's a problem for me to get to choir practice. (Not True, n=449, 75.2%)	First Period	Confirm
It is important for people in choir to like the choir teacher. (True, n=307, 51.4%)	Teacher	Confirm
I don't want to be in choir because I don't like to sing. (Not True, n=321, 53.8%)	Love Singing	Confirm
I want to be in choir because my friends are in it. (Not True, n=363, 60.8%)	Singing with Peers	Contradict
Do you want to sing in a choir, or, if you do sing in a choir, do you want to keep on singing in choir? (No, n=375, 62.8%)	Stay in choir	Contradict
I don't want to be in choir because I don't know anyone in choir. (Not True, n=432, 72.4%)	Singing with peers	Confirm
I don't want to be in choir because I don't know the choir teacher or don't like the choir teacher. (Not True, n=438, 73.4%)	Teacher	Confirm
I don't want to be in choir because my friends think choir is dumb. (Not True, n=490, 82.1%)	Singing with peers	Confirm
I don't want to be in choir because my family doesn't like for me to be in choir. (Not True, n=530, 88.8%)	Parents sing/Concerts	Confirm
I want to be in choir because I love to sing. (Not True, n=246, 41.2%)	Love Singing	Contradict

OSE

Someone in my family likes for me to sing songs. (True, n=167, 28%)	Parents sing	Confirm
Someone in my family thinks that I'm a good singer. (True, n=274, 45.9%)	Parents sing	Confirm
When I'm at home, someone in my family likes to listen to me sing songs. (Not True, n=271, 45.4%)	At home	Mixed
Someone in my family sang to me when I was younger. (Yes, n=412, 69%)	Parents sing	Enhance
I sing songs with some of my family. (No, n=309, 51.8%)	Parents sing	Contradict

SP

I'm a good singer. (Not True, n=179, 30%)	Love singing	Mixed
I'm as good a singer as most people in my class. (Not True, n=197, 33%)	Love singing	Mixed
I sing as well as most people in my family. (True, n=192, 32.2%)	At home	Enhance
Various voice changes cause my voice to feel "tired" or uncomfortable (Sometimes, n=169, 28.3%)	Range/ voice change	Enhance
Various voice changes have not affected my ability to sing (Not True, n=170, 28.5%)	Range/ voice change	Confirm
I do not experience any vocal discomfort because of my voice changing (True, n=214, 35.8%)	Range/ voice change	Enhance
There are times when I can't sing high because of my voice changing (True, n=252, 42.2%)	Range/ voice change	Confirm
I can't sing all the notes my teacher wants me to sing because they are too high (True, n=172, 28.8%)	Range/ voice change	Mixed
I am able to sing all the notes my teacher wants me to sing without difficulty or voice cracking (Not True, n=200, 33.5%)	Range/ voice change	Mixed
I don't want to sing because my voice is changing (Not True, n=440, 73.7%)	Range/ voice change	Confirm
I'm a good singer even though I am going through some voice changes (Not True, n=200, 33.5%)	Range/ voice change	Contradict
My voice sounds "breathy" or "hoarse" sometimes when I sing (Not True, n=185, 31%)	Range/ voice change	Enhance
All the notes my teacher asks me to sing are comfortable to sing (Not True, n=186, 31.2%)	Range/ voice change	Enhance
I'm a good singer, but singing has become to feel different than it did in elementary school (Not True, n=205, 34.3%)	Range/ voice change	Contradict

CSA

I like it when we listen to the music teacher tell us all about the notes of a song before we start to sing. (Not True, n=222, 37.2%)	Teacher	Enhance
In music class, I like to clap the rhythm of the words while we sing a song. (Not True, n=312, 52.3%)	Teacher	Enhance
I get bored when the teacher explains to us all about the notes of the songs we sing. (Sometimes, n=230, 38.5%)	Teacher	Enhance
In music class, I like it when we sing songs from the song books. (Not True, n=220, 36.9%)	Singing	Enhance
In music class, I like it most when 1) we sing songs with the piano, 2) we sing songs with CD tracks, or 3) we sing songs without piano or CD tracks. (Piano, n=313, 52.4%)	Teacher/At home	Enhance
In music class, I like it most when 1) I get to play guitar and sing, 2) I get to play ukulele and sing, or 3) I get to play drums and sing. (Drums, n=279, 46.7%)	Ukulele/Guitar	Enhance
The singing games I like best in music class are 1) the ones where we get up and sing dance and move around the room or 2) the ones where we sit or stand at our places and sing and do motions. (Motions, n=336, 56.3%)	Teacher/First Period	Enhance
The songs in our song books are 1) too high and hard to sing, 2) too low and hard to sing, or 3) just right and comfortable to sing. (Just right, n=442, 74%)	Switch Parts	Enhance
I learn a song better when 1) I sing each little part after the teacher, like an echo, or 2) I sing along with the whole song over and over. (Over & Over, n=419, 70.2%)	Teacher	Enhance

FQ***

Do you go to music class every day of the week? (Yes, n=428, 71.7%)	Makes my day better	Enhance
Do you like to sing? (Yes, n=404, 67.7%)	Love singing	Confirm

CP**

We have school lunch at nine o'clock in the morning. (Not True, n=562, 94.1%)
