MUSIC EDUCATION IN EARLY CHILDHOOD TEACHER EDUCATION: 
THE IMPACT OF A MUSIC METHODS COURSE ON PRE-SERVICE TEACHERS’ 
PERCEIVED CONFIDENCE AND COMPETENCE TO TEACH MUSIC 

BY 

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DISSEYATION 

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ABSTRACT

This study investigated the impact of a music methods course on pre-service early childhood teachers’ confidence and competence to teach music. Specifically, this investigation sought to determine if there was a significant change in participants’ perceived self-efficacy to teach music following the completion of a 15-week music methods course. This study illuminated environmental and intrapersonal influences on confidence and competence to teach music by examining the sources of self-efficacy (i.e., mastery experience, vicarious experience, verbal persuasion, and physiological and affective states) within the context of a university music methods course for 41 early childhood pre-service teachers in which the researcher was also the course instructor.

This study implemented an exploratory quantitative design, embedded within a teacher research paradigm. Priority was placed on quantitative collection and analysis, and a small narrative component was used to elaborate the quantitative results. Teacher research was employed as an enabling method in the creation, application and review of teaching a music methods course to early childhood pre-service teachers. Data collection instruments were developed and adapted from previous self-efficacy research to reflect the distinctive features of an early childhood music teacher education setting. Both the Music Background Survey and the Music Teaching Self-Efficacy Questionnaire obtained primarily quantitative data, while open-ended comments, student reflections, and focus group interviews elicited narrative data.

Changes in self-efficacy perception were revealed according to each source of self-efficacy. Results revealed a significant overall increase in student self-efficacy scores over time. The most influential source of self-efficacy beliefs was enactive mastery experience, exemplified by prior music experiences as well as independent teaching experiences throughout the semester.
Vicarious experiences included observations of both a music specialist and peers teaching music. Verbal persuasion included feedback from both the course instructor and the children the students taught for their practicum. Finally, physiological and affective states were exemplified by participants’ music anxiety, and to a lesser degree, stress and fatigue.

This research enhances the small base of music teaching self-efficacy research by building upon previous studies through an approach that focused on the sources of self-efficacy. Findings of this research suggest that it is possible to boost pre-service early childhood teachers’ confidence and competence to teach music over a single semester of study. In this sense, the results of the study demonstrate how important it is for pre-service generalists to develop the will (i.e., self-efficacy) and the skill (i.e., competence) to teach music if they are to develop the competencies needed to provide adequate music opportunities for their future students. Enhancing self-efficacy is the first step in helping generalists to develop the right blend of skills, knowledge and understandings necessary to teach music.
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CHAPTER 1

NATURE AND SCOPE OF THE STUDY

Introduction

The starting point in this investigation was my interest in music methods courses for pre-service classroom teachers. From informal observations of my own students enrolled in a music methods course for early childhood education majors, I came to realize that many of my students perceived themselves as unmusical, reluctantly participated in making music, and questioned the merit of enrolling in such a course. I questioned if the attitudes of my pre-service educators reflected similar attitudes of classroom teachers currently teaching in early childhood education settings. Specifically, if pre-service teachers did not perceive themselves as musical or as capable of making music, would they be willing or capable to undertake meaningful activities with their future students? How would these perceptions impact the experiences they offer to future students?

Although schools may employ a music specialist at the elementary school level, music specialists in early childhood education settings are far less common. The early childhood educator is responsible for integrating all curricular areas into their curriculum. To meet the challenge of this teaching responsibility, university accredited teacher education programs include methods courses in which pre-service early childhood teachers enroll. Examples of such courses include music, art, and physical education. Given the complexity and scope of each of these curricular subject areas, it seems self-evident that many pre-service teachers will vary in their confidence and competence to teach these subjects.
Of particular interest to this study is pre-service early childhood teacher preparation in music. The purpose of a music methods course for pre-service classroom teachers is to develop students’ basic music fundamentals and music teaching skills (Gauthier & McCrary, 1999). Historically, teacher training programs offer music instruction to pre-service teachers in two course offerings (Gauthier & McCrary, 1999). One course provides instruction in the fundamentals of music, and a second course provides instruction in content delivery or method. More commonly, the content of both courses is provided in a single course. A large body of research exists in the area of music methods courses for elementary education teachers (e.g., Apfelstadt, 1989; Barry, 1992; Berke & Colwell, 2004; Bowers, 1997; Buckner, 2008; Gauthier & McCrary, 1999; Kretchmer, 2002; Price, 1989; Propst, 2003), but few studies have specifically targeted music methods courses for early childhood teachers (Dees, 2004; Kelly, 1998; Richards, 1999).

Effective teaching is shaped by many complex factors, but of critical importance among them is attitude. Teacher attitudes are constructed of such components as beliefs about the subject area, beliefs about their ability to teach effectively in that area, and beliefs about the effectiveness of teaching having any impact on children’s learning. The process of music-making seems to be a deeply personal one, and the personal nature of this process can sometimes act as a barrier to students’ learning and enjoyment of making and teaching music in an early childhood education setting. One way to address this barrier is to examine the pre-service teachers’ perceived beliefs about their own music competence and their perceived ability to teach music. Beliefs influence decisions we make, thus affecting our behavior (Trent & Dixon, 2004; Silverman, 2007; Weiner, 2003). One line of research into understanding teacher behavior has
drawn upon social behavior research. A major construct emerging from this research is self-efficacy (Bandura, 1977).

Scope of the Study

A limited amount of attention has been devoted to the issue of self-efficacy in teaching music in early childhood settings. Few studies in music methods courses for non-music majors have focused solely on early childhood levels (Dees, 2004; Kelly, 1998; Richards, 1999). Often the focus is mainly upon elementary grade levels with token acknowledgement included for early childhood music. Teacher education programs provide one potential avenue for enhancement of music teaching self-efficacy, yet little research has been completed in this area, especially in the field of early childhood teacher development. The intent of this study is to examine the role of a music methods course in the influence of early childhood teacher belief systems that will ultimately affect the behavior of the teacher. In addition, university early childhood program developers may find this information useful in evaluating the type of music methods course that would best prepare pre-service early childhood generalists to teach music.

Theoretical Rationale

Motivation refers to the process through which goal-directed activity is initiated and sustained. Motivation influences learning of new behaviors and performance of previously learned behaviors (Pintrich & Schunk, 2002). Learning and performance are related in a reciprocal fashion to motivation because what one does and learns influences one’s subsequent task motivation. This study relies on Bandura’s (1977, 1986) social cognitive theory of motivation as a lens through which to view early childhood pre-service teachers’ music competence and confidence.
Of the factors that motivate individuals, perhaps none are more influential than perceived beliefs of competence. Bandura’s theory explains the development of attitudes from a social learning framework in which behavior is theorized to depend on one’s sense of self-efficacy (1977; 1997). Self-efficacy perception, or belief in one’s ability to perform a particular task, differs from other forms of self-belief in its specificity to a defined skill, activity, or domain. Because of its specific focus, it has been shown to be a more consistent predictor of achievement than other more general forms of self-belief. Restated, self-efficacy is the belief in one’s own ability to conduct the behavior in question. Bandura emphasizes that self-efficacy is a situation-specific determinant of an individual’s behavior and not a global personality trait.

Our choices of action, behavior, and pursuits, the amount of effort and level of endurance we devote to an activity, and the level of accomplishment we attain are all influenced by our belief in our personal efficacy (Bandura, 1997). Although music scholars have studied various forms of motivation, a surprising void remains in music education research investigating the topic of self-efficacy, a competence self-belief that has proven to be profoundly powerful in predicting outcomes for a variety of endeavors (Bandura, 1997; McPherson & McCormick, 2006; Pajares, 2006; Zimmerman, 2000). The present research therefore observes self-efficacy perception within the context of a post-secondary music methods course, in order to ascertain the influence of personal competence beliefs upon the development of both music ability and confidence to teach music.

Bandura (1986) noted in his work on teaching processes that self-efficacy is the strongest predictor of motivation and beliefs. The individual’s efficacy beliefs are instrumental in defining tasks and selecting cognitive tools with which to interpret, plan and make decisions that individuals make throughout their lives. The successful implementation of quality music
programs in early childhood settings depends in large measure on teachers’ sense of personal music teaching self-efficacy, that is, their personal beliefs about their ability to teach music and their ability to produce positive outcomes in music for children. Pre-service early childhood educators enter teacher education programs with established attitudes, beliefs, values, and their own sense of personal teaching self-efficacy. A perceived lack of preparation has been shown to produce negative attitudes toward music in repressive teachers and a lack of confidence in their ability to teach music (e.g., Barry, 1992; Gifford, 1993; Jeanneret 1997; Mills, 1989; Seddon & Biasutti, 2008). The consequence is the avoidance of teaching music and/or ineffective teaching.

Statement of the Problem

Teachers who graduate from early childhood education programs are often ultimately responsible for implementation of music in early childhood education settings (Music for All Foundation, 2004; Nardo, Custodero, Persellin, & Fox, 2006). In a situation-specific context such as the teaching of music in early childhood education settings, any concerns that pre-service teachers have about their competence as music educators may eventually result in the implementation of poorly conceptualized and ineffective learning experiences in music that involve little more than a token commitment of effort and time. If people tend to avoid situations they believe exceed their capabilities, but undertake activities they judge themselves capable of handling (Bandura, 1977), it is imperative to find ways to foster pre-service teachers’ self-efficacy to teach music.

Purpose of the Study

Knowledge of early childhood teachers’ beliefs about their capacity to teach music to young children is limited. The purpose of this study therefore was to investigate the impact of a music methods course on pre-service early childhood teachers’ confidence and competence to
teach music. Specifically, this investigation sought to determine if there was a significant change in the perceived self-efficacy of a group of early childhood pre-service teachers to teach music following the completion of four microteachings in an early childhood music methods course.

The following research inquiries were designed to explore and better understand the nature of perceived self-efficacy of pre-service early childhood educators to teach music to young children. Using Bandura’s (1997) theoretical model of self-efficacy, this research:

1. Profiled changes in pre-service early childhood teachers’ efficacy beliefs for teaching music throughout a 15-week music methods course; and
2. Examined the influence of enactive mastery experience, vicarious observations, verbal persuasion, and physiological and affective states on pre-service early childhood teachers’ perceived self-efficacy for teaching music.

Significance of the Study

Early childhood teaching practices provide experiences for young learners to build the vital foundation for life-long music learning (ACEI, 1998; Lin & Spoder, 1991). Issues that threaten the early childhood program quality include the varied educational requirements for early childhood teachers, the teachers’ past educational experiences in music, and the high turnover rates of teachers of young children.

Early childhood teachers who have had less than successful music experiences may doubt their confidence in their own content knowledge and ability to teach music. This study examines the relationship between pre-service early childhood teachers’ beliefs about teaching music and the impact of a music methods course on their confidence and competence to teach music to young children.
Good early educational experiences have the potential to affect later school performance (NRC, 2001). Many factors affect the quality of early education, but the preparedness, competence and commitment of the teacher are crucial. The National Association for the Education of Young Children (1994) considers the teacher’s role in supporting children’s development as one of their top fundamental principles. Children must function in all the developmental domains (i.e., physical, social, emotional, and cognitive) if they are to successfully adapt to school and societal norms. These domains are empirically related and inextricably intertwined in early childhood (NAEYC, 2009). In other words, music goes hand-in-hand with other curricular areas for young children. This study extends the research on self-efficacy and teacher beliefs to new populations, specifically early childhood education contexts, and targets behaviors focused on music instruction.

Limitations and Delimitations

There are some limitations of this study. As is true of other research about self-efficacy, all data collected in this study were self-report data. Responses might be influenced by a social desirability bias, that is, participants tend to report what they believe a researcher wants to hear and in a manner that reflects positively on their abilities (Cook & Campbell, 1979). The ability to generalize to a larger population is also a limitation. The sample was drawn from one early childhood music methods course at one southeastern university. The participants were all females, as are most students enrolled in early childhood education programs, and this limits the ability to compare to a more diverse group of pre-service teachers. The nature, content and requirements of the music methods course, as well as the nature of the course instructor, are specific to this study which limits generalizability.
The delimitations imposed by the researcher in this study were determined by a desire to better gain an understanding of the development of perceived self-efficacy to teach music in the context of an early childhood music methods course. Therefore, the researcher only sought participants in the study who were enrolled in the two sections of *Music for the Young Child* in which the researcher was also the course instructor. The time period for the study was confined to one, 15-week semester. Teacher research was used as an enabling method in this study. The value of teacher research may be questioned because of the personal nature of the issues that are researched within one’s own classroom and because the findings may not be relevant in contexts other the one in which the research takes place. The complexity of the findings may also not provide future directions other than for the participants.

*Definition of Terms*

Terms central to this study are defined as follows:

- **Early childhood.** The period of life from birth to eight years of age.

- **Efficacy beliefs.** A cognitive process in which people construct beliefs about their capacity to perform at a given level of attainment. These beliefs influence how much effort people put forth, how long they will persist in the face of obstacles, and how resilient they are in dealing with failure (Bandura, 1977).

- **Enactive mastery experience.** Prior task-specific achievement.

- **Generalist.** A teacher with broad general knowledge and experience in several disciplines or areas, as opposed to a specialist.

- **Instructor.** The university faculty member whose primary assignment is instruction of Music for the Young Child and, for the purpose of this investigation, is responsible for all course components.
Pre-service teachers. Prospective teachers who have not yet been awarded a teaching certificate signifying they have finished the teacher education program.

Physiological and affective states. Emotional and physical factors.

Music competence. The ability to perform adequately the tasks considered essential for teaching music.

MUED 4670. Music for the Young Child is a 15-week course required for undergraduate early childhood education majors, which covers methods of teaching music in the early childhood setting. The four credit hour course meets twice per week.

Microteaching. Microteaching is an instrument for teacher training. It provides opportunities for teacher trainees to practice teaching activities under controlled circumstances in which the complexity of the real teaching situation is simplified in terms of the amount of teaching time and the amount of teaching activities to which particular attention is given.

Pragmatism. A practical, matter-of-fact way of approaching or assessing situations or of solving problems.

Self-efficacy. The belief in one’s own ability to accomplish a certain level of performance.

Teacher research. A form of systematic, intentional inquiry by teachers conducted with their own students.

Verbal persuasion. Feedback and verbal encouragement.

Vicarious experience. Observation of role and peer models in action.

Chapter Summary

The belief that achievement can be developed through determination and effort has led music researchers and educators to seek out psychological approaches and pedagogical strategies
that enhance motivation. Researchers outside of the domain of music have discovered trends in self-efficacy belief that have shown to powerfully predict persistence and subsequent achievement. Therefore, by considering music motivation through the lens of self-efficacy theory, the findings of this research have the potential to offer new insights that can influence teaching and thereby facilitate the development of competence and confidence.

Research studies in self-efficacy beliefs not only help to explain human behavior, but they may also help empower individuals as they come to recognize the potential control they have over their own beliefs, behaviors, and their abilities (Bandura, 1997). As early childhood pre-service teachers develop a stronger sense of self-efficacy to teach music, their confidence and competence in their ability to teach music to young children simultaneously improve. By observing and mapping out the sources of musical self-efficacy within the context of a music methods course, this study sought to assist early childhood classroom teachers in more fully understanding and shaping their beliefs of competence. Through so doing, this research documents how a music methods course helps equip pre-service early childhood teachers with the confidence and competence to teach music.

*Organization of the Study*

This research study is presented in six chapters. Chapter One included the scope of the study, theoretical framework, statement of the problem, purpose of the study, research questions, significance of the study, limitations, delimitations and definition of terms.

Chapter Two presents a review of the literature on the educational landscape of early childhood education and music teacher education, which includes early childhood education, early childhood music education, and music training for generalists. Chapter Three presents a
review of the literature on self-efficacy and teachers, which includes an overview of self-efficacy theory and self-efficacy of teachers.

Chapter Four outlines the methodology including project development, location and participants, sources of data, data collection procedures, and data analysis procedures. Chapter Five presents the findings of the study and includes the results of the data analyses.

Chapter Six provides a summary of the entire study, discussion of the findings, implications of the findings for theory and practice, recommendations for further research, and conclusions.
CHAPTER 2

THE EDUCATIONAL LANDSCAPE OF EARLY CHILDHOOD EDUCATION AND MUSIC TEACHER EDUCATION

All early childhood teachers possess personal beliefs about their confidence and competence to teach music in their classroom. Because of the complexity of this topic, the literature is organized into two separate chapters. This chapter reviews literature associated with the educational landscape of early childhood education and music teacher education through three major topics. The first topic provides the context for the study and outlines the nature and scope of early childhood education. The second topic covers aspects of early childhood music education with the intention of providing rationales for the importance of teaching music to young children. The third topic provides the context for which classroom teachers receive music training in institutions of higher learning.

Early Childhood Education

Early childhood education (ECE) generally refers to programs appropriate for children ages birth to eight-year-olds. These programs may be housed in various locations, ranging from private facilities (e.g., child care center, nursery schools) to agencies (e.g., Head Start), to public school programs. This definition corresponds with that of major professional organizations such as the National Association for the Education of Young Children (NAEYC) and the Association for Childhood Education International (ACEI). This section seeks to develop a deeper understanding of the field of early childhood education through an exploration of (a) the historical and philosophical foundations of early childhood education; (b) early childhood education as a profession; and (c) early childhood teacher education.
Early childhood education has a long history. The thinking that now influences the decisions teachers make about curriculum choices and teaching strategies can be traced back to Greek and Roman philosophy. However, this brief review begins with Martin Luther and early European origins of the American preschool movement.

Early influences. Dating back to the sixteenth century, Martin Luther proposed universal, compulsory education. Two of Luther’s ideas have continued to influence curriculum. First, he insisted that music and physical education be integral components of the curriculum. Second, he was convinced that the family was the most important unit in the education of young children (Frost & Kissinger, 1976).

The ideological origins of the American preschool movement can be traced to the religious, philosophical, political, industrial, scientific, and technological revolutions that transformed Europe in the seventeenth and eighteenth centuries. New ideas about education emerged, including the notion that young children could benefit from education outside the home and needed to be educated differently from older children. Beginning in the seventeenth century Johann Amos Comenius and later, Jean-Jacques Rousseau wrote treatises advocating more child-centered, naturalistic approaches to education and child rearing. In the late eighteenth century the teaching methods of Johann Heinrich Pestalozzi in particular provided the basis for a nonacademic pedagogy that came to be seen as appropriate for the education of young children.

The first institutionalized extra-familial educational programs for young children grew out of communitarian social reform efforts. In the early nineteenth century the British industrialist and social reformer Robert Owen organized infant schools for the young children of workers in his utopian, socialist communities in New Lanark, Scotland and New Harmony,
Indiana. Americans began experimenting with educating young children outside the home. Pestalozzi’s pedagogy influenced educators in New England; Robert Owen helped organize an infant school as part of a communitarian experiment in Indiana; and women’s groups in major cities along the Eastern seaboard started infant school societies. Some public primary schools enrolled children ages four or younger and used infant school methods.

*Kindergarten movement.* A new pedagogy was developing in Germany during the nineteenth century that would eventually lead to the permanent establishment of programs for young children in American public schools. Friedrich Froebel’s kindergarten involved a comprehensive curriculum of play and handwork activities furnished teachers with a script for what to do with young children instead of teaching them to read, write, and count. Froebel used play as a teaching medium, creating games and songs designed to instill attitudes of cooperation and voluntary self-control.

The kindergarten was linked with political liberalism and with social policies promoting the welfare of mothers and children. Froebel’s female followers made the kindergarten one of the first and most popular of modern women’s movements. Kindergarten teaching and advocacy provided new occupations for women outside the home. The kindergarten became the successor to the domestic education movement that won out over the infant school.

Americanization of the kindergarten began when Elizabeth Peabody, Susan Blow, and other American educators joined the kindergarten cause. In Boston, Peabody meshed Froebelism with transcendentalist philosophy and domestic ideology and promoted kindergarten teaching as a vocation for American women. In St. Louis, the other early center of the kindergarten movement, Susan Blow collaborated with William Torrey Harris, superintendent of the St. Louis schools, to introduce kindergartens to the public system. Additionally, Patty Smith Hill was
instrumental in rationalizing and modernizing kindergarten training and practice, and John Dewey advocated a child-centered curriculum that involved children in active experiences.

Battles ensued for the control of the kindergarten between mostly male politicians and public school administrators and mostly female kindergarten supporters and supervisors. These power struggles began in the 1870s, at which time women’s groups began trying to get women elected to city school boards. In fact, the kindergarten was one of the reasons women fought to gain the vote: they wanted to vote for public kindergartens and other maternalist programs for children, women, and families.

*Nursery schools and preschools.* After their success establishing public kindergartens for five-year-olds, preschool educators began experimenting with schooling outside the home for two-, three-, and four-year-olds in a new kind of institution: the nursery school. After a decade of experimentation, nursery school educators were ready when the Federal Emergency Relief Agency announced in 1933 that it was going to establish public nursery school as part of President Roosevelt’s New Deal to end the Depression. Even though these nursery schools were meant to be temporary, nursery educators saw them as a universal preschool experiment and hoped they might become permanent. The resources for public preschools existed, but people were not willing to allocate them to pay for the education of young children.

World War II refocused public attention on the needs of young children and kept the emergency nursery schools from extinction. The new message that preschool educators communicated to parents during the war years was that young children needed lots of love and the opportunity to express their fears (Beatty, 1995). Almost half of all American women held jobs at some time during the war, and mothers of young children joined the workforce in great
numbers for the first time, increasing by 76% between 1940 and 1944 (Beatty). This rapid entry of mothers into the workplace caused an immediate need for child care.

*Head Start.* Soon after Lyndon Johnson succeeded John F. Kennedy in 1963, he declared a “War on Poverty” to fight poverty with economic, educational, and community action programs. Project Head Start, one of the most popular and lasting of these programs, provided both comprehensive child welfare services and parent education. Head Start was never intended as a universal preschool model; it was intentionally separate from existing educational institutions and from the early childhood education establishment.

Despite periods of federally funded preschool education in the 1930s, 1940s and 1960s, preschools were not universalized in America, in part because of their cost, but also because they were considered to be a temporary response to specific needs and were stigmatized as poverty programs. However, reform during the 1960s and 1970s propelled the idea that earlier starts in school-like settings would improve children’s educational achievement and reduce poverty and its long-term effects. This brought about revisions to the quality of education by prompting curriculum revisions requiring children to do more advanced work at younger ages.

These curricular revisions spurred a movement in early childhood education to become more academic, in ways that were similar to education for older children. To address this problem the NAEYC released a document entitled, *Developmentally Appropriate Practice in Childhood Programs Serving Children from Birth through Age Eight* (Bredekamp, 1987). Programs that were interested in seeking accreditation by NAEYC’s National Academy of Early Childhood Programs also used the principles of practice outlined in this document as a guide to assess their individual programs. The need for this document was evident as many practicing
early education personnel held widely different views on what were appropriate activities for children (Bredekamp, 1993).

Profession of Early Childhood Education

The emerging emphasis on the importance of the early years in human growth and development has prompted a more critical need for professional early childhood educators (Lin & Spoder, 1991). The Association for Childhood Education International (1998) advocated that all early childhood settings should have qualified early childhood teachers that are recognized as professionals. These early childhood settings include child care centers, home care, Head Start programs, nursery schools, kindergartens, public or private primary schools, and the early childhood profession includes anyone who has acquired some professional knowledge and is on a professional development path (NAEYC, 1994).

In recent years early childhood educators have become concerned about the preparation of practitioners, which has prompted a call for increased professional development (Spodek, Saracho, & Peters, 1988). In early childhood education, professional development involves the use of professional knowledge and skills to meet the needs of children and families and collaborate with community agencies and other professional groups (Decker & Decker, 2005). Further, Bredekamp and Willer (1993) proposed that the process of professional development include the improvement of knowledge and competence of practitioners because competent educators who work with young children are essential to ensuring the high quality of early childhood education programs.

Early Childhood Teacher Education

In this investigation the improvement early childhood educators’ knowledge and competence is restricted to pre-service teachers in a university early childhood education
program. Early childhood teacher education refers to the post-secondary training of pre-service teachers to become licensed early childhood educators. Teacher education programs plan experiences designed to allow teacher candidates to acquire the knowledge, skills, and attitudes needed to teach. These experiences are founded on research, theory, and practice (Saracho, 1993). To more fully understand the current educational landscape of early childhood teacher education, a brief overview of early childhood teacher education programs is offered below.

**Early Childhood Teacher Education Programs in the United States**

In 1999, the National Center for Early Development and Learning (NCEDL) conducted a groundbreaking study of early childhood teacher preparation programs that prepare individuals to work with children from birth to age four. That study provided the first nationally representative data on the goals, capacity, supports and challenges of early childhood teacher preparation programs (Early & Winton, 2001).

Times have changed since 1999. Federal legislation like *No Child Left Behind* (NCLB) has emphasized the importance of education for all children. With the growing research on the importance of high quality early experiences for children’s later school success (Peisner-Feinberg et al., 2001; NICHD ECCR, 2005), the federal government also passed *Good Start, Grow Smart* as an early childhood companion to NCLB. Both sets of legislation emphasize quality and have focused national attention on the importance of “highly qualified” teachers in children’s educational success. “Highly qualified” is a specific term defined by NCLB. The law outlines a list of minimum requirements related to content knowledge and teaching skills that a highly qualified teacher would meet. The law, however, also recognizes the importance of state and local control of education and therefore provides the opportunity for each state to develop a definition of highly qualified that is consistent with NCLB as well as with the unique needs of
the state. In general, under NCLB a highly qualified teacher must: (a) hold a bachelor’s degree; (b) have full state certification, as defined by the state; and (c) demonstrate competency, as defined by the state, in each core academic subject he or she teaches (U. S. Department of Education, 2009).

Additionally, due in part to these federal initiatives, the number of state-funded prekindergarten programs has grown. In 2004-2005, 38 states funded prekindergarten, collectively serving about 800,000 children (Barnett, Hustedt, Hawkinson, & Robin, 2005). State and federal funding for prekindergarten in 2004-05 was estimated at about $2.8 billion. States have struggled with defining and recruiting “highly qualified” teachers in their attempts to implement prekindergarten programs and fulfill the legislative requirements (Maxwell, Lim, & Early, 2006).

In 2006, the National Prekindergarten Center (NPC) conducted a national survey of early childhood teacher preparation programs at two- and four-year colleges and universities. Data was collected from over 1,000 early childhood teacher preparation programs representing about 85% of the total population of such programs in the United States. It provided basic descriptive information about programs offering a Child Development Associates (CDA) or other certification, Associate’s degrees, Bachelor’s degrees, and Master’s degrees. Of the 4,539 degree-granting institutions of higher education in the country and its territories, an estimated 1,349 offered an early childhood teacher preparation degree of some type (Maxwell, Lim, & Early, 2006). About 70% of the early childhood programs in the study prepared teachers to work with children across a broad span—from the infant/toddler years to early elementary school. A little less than 20% of the programs covered the age range of three to eight.
Summary

Early childhood education is defined as the education of children from birth through age eight. While this is seen as a single developmental stage, it includes children in a number of different institutions serving a variety of different purposes, including both care and education. In the United States, ECE includes the education of children in infant-toddler programs, child care homes, center-based child care programs, preschools or nursery schools, public school kindergartens and pre-kindergartens, and the lower primary grades of elementary school (grades 1-3).

Recent national policy discussions have focused on issues of teacher quality. Teachers’ education determines “teacher quality,” because it describes the teachers’ characteristics in relation to content, knowledge, classroom behavior, academic ability, advanced education degree work, and teacher education experiences (Saracho & Spodek, 2006). Research suggests that the early childhood teacher’s professional development affects the quality of early childhood programs in which they are employed and predicts the developmental outcomes of the children in their classes (Peisner-Feinberg et al., 2000). Level of education attained by early childhood educators is positively related to the quality of their programs (NICHD ECCR, 1996). Thus, all aspects of a teacher education program must be considered in designing a program to prepare teachers of young children.

Early childhood teachers are increasingly required to improve their level of expertise in early childhood education, knowledge, developmentally appropriate practices, and teaching strategies that provide quality care and education to young children. This suggests that early childhood educators need a knowledge base that includes child development knowledge, pedagogical knowledge, knowledge of learning and teaching styles, and knowledge of how to
foster creativity (Saracho & Spodek, 2006). A rationale for the inclusion of music education as part of an overall early childhood teacher education is offered in the next section.

Early Childhood Music Education

Music-making permeates the life of a young child, from early infant-parent music listening and lullaby singing to the sol-mi chants used by preschoolers to engage their playmates. Music educators widely advocate that children’s healthy start to music learning is dependent upon adults who appreciate and build on these naturally occurring practices and guide the development of a repertoire of skills and understandings that can bring a lifetime of enjoyment and fulfillment. In addition to knowledge about children’s musical development, adults’ beliefs about music ultimately influence their musical actions. Because adults’ actions in a society communicate enduring understandings to the children they teach and nurture (Strauss & Quinn, 1997), this section explores beliefs in music and early childhood education that impact current early childhood music practices. Shared understandings among early childhood and music educators are considered, as well as current music practices in early childhood settings. These topics frame influential factors that can transport adults’ music practices to levels that consistently nurture young children’s musical development.

Rationale for Early Childhood Music Education

There is broad recognition that children are naturally musical. Music engagement is central to the cultural practices and circumstances of many young children’s experience of the “everyday” and has been acknowledged as a powerful force in early development (Barrett, 2009). Young children should be given the opportunity for their musicality to be celebrated and developed. Such is the prime purpose of music education (MENC, 2001). When young children experience high-quality music, it positively affects the quality of their lives (Achilles, 1999).
Both early childhood and music educators agree that music making is a holistic way to enhance young children’s healthy start to learning (Carnegie Task Force, 1994). Young children are fluid and adaptive to new ways of thinking (Gardner, 1981). Institutions and individuals charged with caring for young children need to capitalize on this opportune time in the lives of young children to determine and acquire developmentally appropriate ways of including high-quality music education into their early childhood programs. This section explores a rationale for early childhood music education that is based on research in two areas: (a) music education with infants and toddlers; and (b) music education as a cultural and cognitive practice for young children.

**Music with Infants and Toddlers**

Exposure to a musically rich environment may be crucial to infant development and should therefore be emphasized (Trevarthen & Aitken, 2001). Research has demonstrated that infants and toddlers seek and initiate musical interactions with caregivers and objects in their environments (Custodero, 2002). Maternal singing captures infant attention better than maternal speech (Trehub, 2002), and infants prefer the musical qualities of infant-directed speech to adult-directed speech (Cooper & Aslin, 1990; Werker & McLeod, 1989). The use of music can vary according to the infant’s level of development, first to calm and arouse, and then to provide an opportunity for performance and singing. Young children can explore movement, emotions, and thoughts with others or alone using music (Trevarthen & Malloch, 2002). Furthermore, some researchers have suggested that music may have served an evolutionary purpose in helping parents bond with, and regulate the emotions of, their infants (Trehub, 2002).
Music making is a universal practice. Within that practice, young children demonstrate astonishing musical capacities to express themselves through their musical play behaviors as they sing, move, rhythmically speak, explore sounds, and improvise. Young children also possess unique cognitive abilities to express and interpret their world through music, although they may not readily demonstrate those understandings through words. During the earliest years of life, children begin to form their understandings about music and the world as they respond to unique melodies, meaningful texts, interesting rhythms, and positive social interactions (e.g., Jusczyk & Krumhansl, 1993; Standley, 1998; Trainor, 1996; Trainor & Heinmiller, 1998).

A common relationship exists between music as a cultural practice and cultural practice as an education (Jorgensen, 1997). Jorgensen focuses on music education as an enculturation. This rationale is appropriate for early childhood music education because (a) children naturally and readily interpret their understandings of the world through their musical play; (b) children’s music making involves complex thinking processes, including listening, discriminating, and making decisions about musical sounds; and (c) children learn through hands-on, direct experiences that are inherent in music making experiences.

Enculturation provides a contextual and interdisciplinary approach to music and integrates that knowledge with the rest of life experiences (Jorgensen, 1997). Enculturation plays an important role in early childhood music education because it maps the way young children learn – holistically, directly, and connectedly. Music making is not an isolated event in children’s lives. Music making is a dynamic and spontaneous way in which young children express, interpret, and understand all aspects of their lives. Early childhood music education viewed as music enculturation commits to a more appropriate way in which children learn.
Music enculturation as a rationale for early childhood music education suggests a pluralistic view of music education. Pluralism is a social strategy that encourages the existence of many sources of initiatives, kinds of institutions, and conflicting beliefs (Gardner, 1995). Pluralism applied to early childhood music education implies that there are many ways in which young children experience musical enculturation, and that there are many ways in which adults can contribute to those processes. As opposed to more authoritative systems that have one dominant source of power and initiative, a pluralistic rationale mediates the shared and varied understandings among early childhood and music educators, who are often both responsible for the music education of our youngest children.

Transmission and acculturation. Enculturation includes forces of transmission and acculturation (Jorgensen, 1997). Transmission is the traditional shaping of experiences that contributes to the acquisition of musical skills and understandings. Applied to early childhood music education, transmission involves structuring age-appropriate formal and informal music learning through group circle times, as well as extensions of those experiences to guided exploratory play in music learning centers. Acculturation in early childhood music education may result as adults infuse music making experiences throughout children’s lives through formal, informal, and improvisatory musical play behaviors. However, educators and caregivers are faced with an overwhelming, sometimes contradictory, amount of information on which to base decisions regarding music education for young children.

Rational of teaching music to young children. How do young children learn music? This question motivated Barbara Andress to explore several learning theories (e.g., Piaget, Vygotsky, Bruner, Montessori, Gardner, Katz, Elkind), which she applied to her music teaching and synthesized into her music education program for young children. Synthesizing ideas from psychologists and early childhood educators, Andress developed an early childhood music
curriculum framework. The curriculum design involves the following steps: (a) decide the developmental level of the child; (b) plan developmentally appropriate music activities using the child in acquisition of knowledge, skills, dispositions, and feelings; and (c) deliver the musical understandings in a three-part learning environment (Andress, 1998).

Andress (1991) synthesized the research on early childhood development with research in music education to form a tripartite system for the music learning environment for young children. The three learning environments are permeable learning, special interest areas, and guided group play. Permeable learning refers to learning that happens throughout a child’s day. For instance, a child creates a song while playing with trucks in the sand, or the teacher uses music in giving instructions. The special interest areas are the special music areas or centers that give the children varied musical experiences. Examples include sound centers, creative dance centers, and a singing center. The guided group play consists of teacher-directed group musical activities, such as the singing circle or a singing game. A model for the tripartite music learning environment is presented in Figure 2.1.
Figure 2.1. Early childhood tripartite music learning environment.


Early childhood educators. Early childhood educators traditionally recognize music’s capability to transmit extra-musical meanings that assist children’s overall cognitive, physical, and emotional development. Several research studies demonstrate early childhood educators’ utilitarian goals for the outcomes of children’s music making experiences. In a content analysis of over 200 early childhood textbooks (Draper & Gayle, 1987), 70% of the texts listed self-expression and creative pleasures as justification for music’s inclusion, 67% cited motor rhythmic development, and 46% cited aesthetic response. A study by the National Center for Educational Statistics (Snyder & Hoffman, 1994) reported that 63% of teachers in half-day kindergartens and 66% of teachers in full-day kindergartens included creative activities, such as dramatic play, arts and crafts, and music in their curriculum five days a week. Taken together,
these studies point to early childhood teachers’ recognition that music making is an appropriate
cultural experience within the early childhood curriculum, but there remains the question of
whether or not teachers possess skills to structure musical behaviors for children within a
developmentally appropriate framework.

Although early childhood teachers may readily acknowledge music’s importance in
children’s daily routines, early childhood professional development practices do not
systematically regard the importance of quality developmentally appropriate musical experiences
in young children’s overall development. Teachers may share understandings about the impact of
developmentally appropriate musical experiences in children’s development, but few early
childhood or music teacher education programs include early childhood music in their course
requirements (Fox, 1991; Persellin, 2007). The music education profession consistently
endeavors to bridge early childhood and music educators’ understandings that teacher quality is a
critical determinant in assisting children’s foundational music learning processes.

Music Practices in Early Childhood Settings

In 1915, only 12% of children aged five or younger attended an early childhood program
in the United States, yet by 2005, 57% of all three- to six-year-old children attended center-based
programs (Hallquist, 2000; National Center for Education Statistics, 2006). Although music
making and music education may occur in a variety of ways for young children, American
children are often solely dependent on adults in early childhood settings as their primary music
facilitators. Despite educators’ shared understandings that music is important in young children’s
lives, investigations of early childhood settings indicate inconsistencies in the quality, frequency,
and nature of musical experiences that early childhood teachers provide children in those
settings.
The collaborations between early childhood and music education professionals have been both practice- and researched-based. Annual daylong early childhood conferences have been held in conjunction with state and national meetings of MENC since 1988 (Nardo et al., 2006). The music education research leading to such collaborations has focused primarily on identifying needs in early childhood educational settings.

State and regional preschool music studies completed over the past 20 years confirmed that music serves many functions in preschool programs (Daniels, 1992; Golden, 1989; Kelly, 1998; McDonald, 1984; Nardo, 1995; Tarnoski & Barrett, 1992). McDonald (1984) investigated the perceptions of university-based preschool teachers related to creative arts instruction and teacher preparation in 25 states. When these teachers were asked about the inclusion of instruction in music, visual arts, rhythmic movement, and creative dramatics in these preschools, 69% responded affirmatively. Seventy-eight percent of centers reported that music activities occurred several times per week. Teachers articulated the following needs: (a) preschool-specific methods courses that emphasized more rhythmic movement training; and (b) functional music skills for the teachers.

A subsequent survey of 500 child care centers in Ohio revealed that classroom teachers were primary music facilitators for young children (Golden, 1992). Although 79.6% of the centers reported that children were engaged in music-related activities on a daily basis, only 9% of teachers and 7.4% of administrators indicated the importance of fostering musical skills and understandings as a basis for music in the curriculum. Many teachers (58%) viewed music as a source of enjoyment and recreation. Apparent in Golden’s study is the gap that exists between research-based knowledge of children’s early musical development and early childhood teachers’ access to and application of that knowledge. This study demonstrated the need for early
childhood professional development processes to stress the importance of (a) appropriately structured musical experiences for children; (b) the role of early musical experiences in children’s’ foundational music learning; and (c) music as a natural means for children to express, interpret, and understand their world.

On a smaller scale with similar results, Daniels (1992) investigation of 143 preschools in Alabama, Georgia, Mississippi, and Tennessee reported that 44% of the settings employed music teachers. However, teachers and program directors responsible for decisions about when, what, and how music was implemented in children’s routines often indicated the following: (a) no special music training was necessary at this level; (b) music activities could be implemented adequately through the use of records and tapes; and (c) singing should come naturally to someone who loves children. This study demonstrated a general lack of understanding along decision makers about the critical role of appropriate musical experiences in young children’s lives, and the necessity for classroom teachers and caregivers to possess exemplary musical skills. The study also raised questions about the musical goals an objectives of early childhood music courses in teacher education as well as collaborative efforts that need to occur between teacher education programs and early childhood professionals.

In accord with research undertaken by Golden (1992), Wisconsin researchers (Tarnowski & Barrett, 1992) undertook a comprehensive survey of current musical practices in their state’s early childhood programs. Classroom teachers and caregivers were the primary music facilitators in 96% of the classrooms. Of the 686 reporting teachers, only 75 had experienced prior music instruction in their educational history. Teachers indicated that they chose music as a tool to enhance other areas of the children’s learning. The development of children’s musical skills and understandings was identified as the lowest priority for music’s inclusion in the early childhood
curriculum. Collaborative intervention programs are needed to assist in the musical development of teachers who are responsible for the music education of children (Tarnowski & Barrett, 1997; MENC, 1994).

Next, to address the need for instructional improvement in higher education, Nardo (1996) investigated the music education needs of California early childhood education (ECE) centers in relation to community college music courses offered to ECE majors. Results revealed that 64% of the teachers in 265 preschool centers in California designed their own curriculum and 68% led music making experiences. Of the reporting teachers, 33% had prior music training in their preparation for teacher, and 58% had prior private music lessons. Teachers indicated that they engaged children in music four or five times a week for an average of 15 minutes each. Musical exploration was indicated as the most important music objective. Nardo’s study further pointed to the need for the inclusion of appropriate music training practices in all teacher education programs.

Summary

The idea that very early education provides long-term benefits is now well recognized by theorists, practitioners, and researchers. Research in developmental psychology and commonsense observation underscore both the importance and the wisdom of making music an integral and overt part of the earliest education of young children. Children are natural musicians, and exposure to music during the early years enhances the learning process by promoting language development, creativity, coordination, and social interaction. Teachers play an important role in incorporating music and movement into a child’s life.

A view of music education as enculturation is appropriate to early childhood music education because young children do not make music in isolation from the rest of their
understandings of the world. As the Greeks viewed music as an integral and interrelated part of the arts, young children also incorporate music making as an integrated and essential part of their lives. Children naturally and spontaneously engage in musical behaviors and singing, moving, playing, and creating throughout their daily routines. Children may engage in more formal music making episodes, or they may individually and casually interact with persons and materials in their environment. As a contextual practice, music making occurs wherever children may be.

The importance of music in young children’s lives as a source of enjoyment and recreation was acknowledged by educators in preschool settings. Common practices included the classroom teacher as planner and leader of musical activities, but the content of the planned music-making varied across studies. In terms of preschool teacher musical education, study revealed that teachers continually seek ways to further develop their own skills for song-leading, playing instruments, leading creative movement, and conducting drama activities.

The early childhood profession is becoming increasingly aware of the importance of music education. A keyword search for music in back issues of Young Children, the NAEYC journal, resulted in four articles from 1985–95 and twenty-two articles from 1995–2004 (Nardo et al., 2006). Often, the musical education of young children falls on the shoulders of early childhood educators in primary school settings. The issues surrounding music training for general classroom teachers (i.e., “generalists”) are presented in the next section.

Music Training for Generalists

Generalist teachers are the only teachers of music in primary schools in many parts of the world (Wiggins & Wiggins, 2008). Almost 20 years ago, Mills (1991) supported generalists teaching music and suggested that, just as music should be for all children, it should also be for all teachers. Yet, at about the same time, interviews of 50 generalist teachers in five English
primary schools revealed that the teachers rated their teaching competence lowest in music. Almost half wanted to be relieved of all responsibility for teaching music (Barnes & Shinn-Taylor, 1988). The issues surrounding the musical training of generalists in the United States are framed according to two topics: (a) early childhood and primary music instruction in the United States; and (b) music training courses for generalists in higher education.

Music Education in the United States: Generalists versus Specialists

The issue of music instruction by generalists versus specialists may be gaining importance in the U.S. In 1995, generalists taught 30% of elementary school music in the United States, which contrasted with the general perception that music was taught by specialists in American schools (Byo, 1999). More recently, Indiana declared all certified elementary classroom teachers qualified to teach music. This may be a reflection of the negative effect that economic issues are having on overall school funding and arts education in particular. There is evidence to suggest changing trends in the instruction of music and the other arts. Despite increasing student enrollment between 1999 and 2004, the number of music teachers in California declined 26.7% (Music for All Foundation, 2004).

Another study reported that 25% of 956 school principals in Illinois, Maryland, New Mexico and New York had seen a decline in instruction in the arts, and 33% expected further cuts (Manzo, 2004). In 2007, data from a survey of 491 nationally representative and randomly selected school districts, along with case studies of 13 of those districts, showed a 16% decline in instructional time in art and music, which computes to an average decrease of 57 minutes per week (CEP, 2007).

Taken together, these studies imply a trend toward the hiring of fewer music specialists in the United States, suggesting that if general music remains in the curriculum in schools where
music positions are cut, it likely will be taught by generalists rather than music specialists. Childhood music experiences have a powerful influence on the development of future adult attitudes about music and are predictive of musical involvement later in life (Asmus, 1986; Bowles, 1991; Kritzmire, 1992; Price & Swanson, 1990). The general teacher is an important source for these early music experiences and has the potential to affect students’ opinions about music. The growing body of literature targeting the music teacher education of generalists reveals insightful evidence regarding appropriate and effective music training.

Music Training Courses for Generalists

This section deals with the ways in which pre-service general teachers receive training in music education. A music education course for pre-service generalists is often mandated by teacher certification agencies (Berke & Colwell, 2004; Price & Burnsed, 1989). This section is organized according to four themes: (a) music training devoted specifically to pre-service early childhood educators; (b) music course content for pre-service generalists; (c) generalists’ attitudes and beliefs about music; and (d) relevance and nature of music training courses for generalists.

Music Training for Pre-service Early Childhood Educators

Early childhood music researchers and music teacher educators have noted the lack of research specific to the musical training of early childhood classroom teachers (Fox, 1991; Gharavi, 1993; Nichols, 1994; Scott-Kassner, 1991; Van Rysselberghe, 1993). In the past, effective practice in the musical training of generalists has been derived from studies done with elementary education majors (Apfelstadt, 1989; Barry, 1992; Berke & Colwell, 2004; Gauthier & McCrory, 1999; Price & Burnsed, 1989; Propst, 2003; Saunders & Baker, 1991). Although some researchers have indicated that elementary generalist music training may not be applicable
to preschool teachers (Gifford, 1993), others have taken the position that a broader perspective is gained through combining levels of students (Flowers & Coddington, 1990). Therefore, further discussion regarding the music training of generalists will stem from the literature rooted in both early childhood and elementary education teachers.

Course Content

The traditional model for providing music instruction to pre-service generalists in the United States includes a course in music fundamentals followed by a separate music methods course (Berke & Colwell, 2004; Gauthier & McCrary, 1999; Propst, 2003; Saunders & Baker, 1991). Good fundamentals courses foster skills in creating, performing, and evaluating music. The fundamentals course is designed to develop these musical skills and provide a foundation for pre-service generalists prior to a methods course. A methods course then builds on the music skills and prepares generalists to teach music. These course offerings are based on the assumption that the students will use the course content when they become classroom teachers.

The purpose of these courses is to prepare generalists with musical skills and understandings so that they can integrate musical activities into their classes or, in certain situations, provide music instruction for students (Barry, 1992; Berke & Colwell, 2004; Byo, 1999; Gauthier & McCrary, 1999; Propst, 2003). This course provides several challenges. First, the students enrolled in this course exhibit a vast spectrum of musical skills. Some students have had no musical experience; others read and perform music fluently. This discrepancy in skill level leads to the second challenge of striking the balance between teaching music fundamentals and providing students with practical musical activities that could be integrated into daily teaching. In many universities, requiring students without prior musical background to complete a musical fundamentals course as a prerequisite solves this problem; however, in most curricula
already bulging at the seams with requirements, one course has to suffice for providing both fundamentals and methods (Saunders & Baker, 1991).

Beliefs and Attitudes toward Music

Attitudes and beliefs are important concepts in understanding teachers’ thought process, classroom practices, change, and learning to teach. Teachers’ beliefs about the role of music in the classroom are significantly related to their practice (Bresler, 1993; Goodman; 1985; Moore, 1991). The attitudes of generalists towards music teaching, as well as confidence levels have also been identified as factors connected to their music teaching practices (Barry, 1992; Gifford, 1993; Kvet & Watkins, 1993; Lewis, 1991; Mills, 1989). Music methods courses have been found to positively influence attitudes, perceived confidence, and competence (Goodman, 1985; Morin, 1995; Russell, 1996; Vandenberg, 1993; Walker, 2000).

Unfortunately, many generalists harbor negative self-perceptions regarding their ability to make music or teach music effectively (Apfelstadt, 1989; Austin, 1995; Bresler, 1993; Krehbiehl, 1990; Saunders & Baker, 1991). In a study examining this population for self-perceptions of music ability, Austin (1995) indicated that students who have limited or negative prior experiences may find it difficult to acquire the range of skills that they perceive would equip them with sufficient proficiency within a single semester. For these students, methods courses serve to introduce music skills and understandings, which develop further as they practice teaching.

Several issues surface regarding the music training for generalists. Teacher educators seem to disagree about the fundamental values of music teacher education courses for these pre-service generalists. Some researchers claim that these courses in their present form may even do
more harm than good (Austin, 1995; Gifford, 1993). These and other issues are addressed in the sections that follow.

Relevance and Nature of Music Training Courses

There seems to be a mismatch between the content of most music fundamentals and methods courses and the types of activities and skills that classroom teachers perceive as useful or actually use in the classroom (Gifford, 1993; Kelly, 1998; Kinder, 1988; Morin, 2004; Price & Burnsed, 1989; Saunders & Baker, 1991). Many methods course instructors spend a great deal of time teaching music theory, notation, and developing performance skills on piano, recorder, and other classroom instruments. Generalists become overwhelmed with content that is too theoretical and teacher directed and, as a result, find this type of course content and structure too difficult to master (Gifford, 1993; Temmerman, 1997). When classroom teachers are asked to identify activities they are using or are willing to implement, they mention teaching activities based on singing, listening, moving, and integrating music with other subjects (Bresler, 1993; Propst, 1993; Saunders & Baker, 1991).

Developing generalists’ confidence to teach music. Studies have revealed that both pre-service and in-service generalists lack the confidence to teach music (Auh, 2004; 2006; Bresler, 1993; Gifford, 1993; Jeanneret, 1997; Kane, 2005; Mills, 1989; Wiggins & Wiggins, 2008). The lack of confidence in teaching music stems from students’ life experiences, school experiences, and their lack of music teaching skills and strategies (Richards, 1999). Others attribute the lack of confidence in teaching music solely to a lack of musical skills and knowledge (Jeanneret, 1997; Kane, 2002). Many of these studies suggest that musical training and experiences for pre-service generalists should allow for the exploration of the student’s own musicality as well as provide basic skills and knowledge.
Other studies reveal that a generalist music teaching course can make a significant difference in pre-service teachers’ confidence to teach music (Auh, 2004; Jeanneret, 1997). For example, (Auh, 2006) revealed that pre-service teachers cited individual teaching presentations in front of their peers as most effective in developing their confidence to teach music. In another study using a pretest/posttest design, Jeanneret (1997) revealed a significant change in pre-service generalists’ perceived confidence to teach music as a result of a music fundamentals course. The music fundamentals course was designed primarily to develop music skills and knowledge and, secondly, to develop the students’ confidence to teach music by focusing on general teaching strategies. Based on her research, Jeanneret advocated a music curriculum for pre-service generalists that promotes curriculum, competencies, and teaching strategies as a three-pronged model, whereby each component emphasized the instructor as the model. Jeanneret’s (1997) model is presented in Figure 2.2.

Figure 2.2. Music curriculum model for pre-service primary teachers (Jeanneret, 1997).

Music is often cited as the subject in which generalists perceive the least confidence (Hennessy, 2000; Mills, 1989). A longitudinal study by Hennessy (2000) revealed three primary factors bear heavily on pre-service generalists’ growth as confident and competent music teachers: (a) prior experience and beliefs; (b) university course training; and (c) school-based experience. More specifically, findings indicated the following: (a) the more counterproductive experience students had, the less successful the music course was in instilling confidence in the students; (b) music training courses provide students with new-found understanding and enthusiasm as well as teaching ideas they feel confident to try in school; and (c) students provided ample evidence of the central importance of observing and teaching children in classroom settings with knowledgeable and supportive teachers.

**Summary**

Taken together, these studies reveal two major components that contribute to more effective music training for generalist pre-service teachers. First, available evidence suggests that when teacher educators provide opportunities for students to create, perform, and respond to music, they are better positioned to provide meaningful, enriching musical experiences for their students. When training courses focus on teaching music theory, literacy, and traditional skills, pre-service generalists may foster attitudes that are counter-productive to positive involvement in music after graduation (Gifford, 1993; Temmerman, 1997). Second, the literature suggests that teacher educators use the music training courses as vehicles through which to foster pre-service teachers’ competence and confidence to teach music. These traits are enhanced through a process of acquiring music skills and understandings, observing examples of good music teaching, and teaching music to peers and children.
When college instructors emphasize skill proficiency (music literacy, theoretical concepts, playing piano/recorder) over musical activities for the classroom teacher (creating, performing, and responding), the course may serve to exacerbate negative attitudes toward music. In a situation where the classroom teacher is solely responsible for teaching music, this negative attitude will not benefit the musical skills of his or her students. Skill acquisition is important; however, it is imperative that music educators keep the larger goal of advocacy in mind (Berke & Colwell, 2004). Classroom teachers’ perceptions of the usefulness of the experiences obtained in music methods courses may also have a direct effect on the type of music concepts and activities included in the classroom and the time spent engaging in these activities (Bresler, 1993).

Chapter Summary

Early childhood education encompasses young children through their middle elementary years. The quality of learning that young children experience is of crucial importance. In guiding young children’s learning and development, evidence suggests that early childhood teachers possess the knowledge, skills, and sensitivity to interact successfully with not only the young child, but also parents, guardians, paraprofessionals, community organizations and others whose actions affect children. Additional recommendations include accommodating the breadth of young children’s interests and needs in a diverse society.

Music is a natural and important part of young children’s growth and development. Early interaction with music positively affects the quality of all children’s lives through creative expression in song, rhythmic movement, and listening experiences. Exposure to music during the early years further enhances the learning process by promoting language development, coordination, and social interaction. Music in early childhood creates a foundation upon which
future music learning is built. These experiences should be integrated within the daily routine and play of children. In this way, enduring attitudes regarding the joy of music making and sharing are developed.

The responsibility for providing these early music experiences for young children in much of the world lays with early childhood and primary classroom teachers. Generalists can make a valuable contribution to a child's musical development, both through their attitude and through direct involvement. In the U.S. these generalists who pursue positions as prekindergarten (pre-K) through third grade teachers in public schools complete 4- and 5-year undergraduate programs and receive teacher licensure. Of the teacher education programs that require music education as part of the degree curriculum, this is all too often a one-short course, which balances music fundamentals with methods in how to teach music.

The music fundamentals/methods course for pre-service generalists is vital to the continued existence of music education in the schools, and its importance must not be diminished. The literature suggests that more effective music training for generalist includes a combination of enhancing musical skills and understandings through meaningful music-making experiences (e.g., exploring, creating, performing, responding) while simultaneously providing experiences to enhance generalists’ confidence to teach music to children. Confidence is boosted, not only from acquiring music skills, but also from experiences in (a) observing, then reflecting on quality music teaching; (b) teaching music lessons to peers; and (c) teaching children in a practicum setting. Of utmost importance is for teacher educators to help pre-service generalists develop their music skills and confidence in a way that does not diminish their musical enjoyment.
A basic premise of this dissertation is that an overall goal of producing generalists who are more competent and confident to plan and lead musical experiences with young children is best achieved through the lens of self-efficacy theory, which is discussed in detail in the next chapter.
CHAPTER 3
SELF-EFFICACY AND TEACHERS

This chapter reviews literature relevant to self-efficacy in education through two major topics. The first offers an overview of self-efficacy theory, framing it within the theoretical and historical background. Self-efficacy belief is compared and contrasted with self-concept. The second discusses teacher self-efficacy, including a discussion of pre-service teachers’ beliefs and measurement of those beliefs.

Self-Efficacy Theory: An Overview

Most of the important models of human learning, cognition, emotion, personality, and social interaction have tried to account for the individual’s capacity for adaptively responding to environmental changes, often referred to as competence (Maddux, 1995). The study of beliefs about personal competence and the role of such beliefs in human adaptation and adjustment have a long history in clinical, personality, and social psychology. Self-efficacy theory (Bandura, 1977, 1982, 1986) maintains that the initiation of and persistence at behaviors and courses of action are determined primarily by judgments and expectations concerning behavioral skills and capabilities and the likelihood of being able to successfully cope with environmental demands and challenges. In the sections that follow, this construct is explored through its theoretical foundations. Self-efficacy and its sources are defined.

Theoretical Foundations

Social Learning Theory

Pioneers in the field of psychology laid the groundwork for social learning theory in the 1800s. Social learning theory questioned the behaviorist view of a stimulus-response-
reinforcement approach. This explanation of human behavior was influenced by individual differences and centered on an individual’s perception of events as being personally or externally determined. The ongoing debate was whether there was a mediating factor between the stimulus and the response to regulate behavior. Mill and Dollard published *Social Learning and Imitation* (1941) and suggested that behaviors could be learned through observation and imitation. They claimed that individuals did not have to directly experience a stimulus-response-reinforcement chain. This expanded social learning theory to include the relation between environment and behavior. The unidirectional approach of the behaviorist was expanded to assert that there is a mediator (human cognition) that puts the individual in control of behavioral responses. The introduction to human cognition as a mediator expanded the knowledge of cognitive theory (Bandura, 1982).

In 1963, Albert Bandura and Richard Walters put forth a theory of social learning that broadened the frontiers of learning theories with the now familiar principles of observational learning and vicarious reinforcement. Subsequently, Rotter’s Social Learning Theory (1966) explained that the probability of a given behavior in a particular situation was determined by two variables: (a) expectancy (probability); and (b) reinforcer (behavior). These variables accepted the existence of a hierarchy of responses that occurred in different situations with varied probability based on how reinforcing the consequences were to individuals. Rotter (1966) explained behavior in a bi-directional manner, placing more emphasis on the influence of the environment than on learning experiences. Much of this research was concerned with how behavior was influenced by individual differences in experience and how events were perceived as being internally or externally determined. Rotter’s conceptual scheme was more focused on causal beliefs about the relation between action and outcomes rather than with personal efficacy.
Social cognitive theory resulted from the social learning principles that began with Rotter’s work, but more emphasis is devoted to cognitive variables.

**Social Cognitive Theory**

Bandura later proposed a view of human functioning that granted a central role to cognitive, vicarious, self-regulatory, and self-reflective processes in human adaptation and change. By the mid-1970s, Bandura identified a missing element to the earlier theory: that individuals create and develop self-perceptions of capability that become instrumental to the goals they pursue and to the control they are able to exercise over their environments. He led efforts on cognitive social learning theory development in his book *Social Foundations of Thought and Action: A Social Cognitive Theory* (1986). Bandura’s social cognitive theory defined human behavior as a triadic interaction of personal factors, behaviors, and the environment (1977, 1986). Social cognitive theory upheld the behaviorist view that the individual’s assessment of the event can mediate the occurrence of behavior. However, social cognitive theory added that one’s mind is an active force that influences actions. Bandura did not view all sources of influence as having equal strength. The contributions of personal factors, behaviors, and environment differed based on (a) the individual, (b) what behaviors were in the individual’s repertoire, and (c) the situation in which the behavior occurred. The individual’s responses involved their system of self regulation, an internal control that directs what behavior is performed and the self-imposed consequences of that behavior.

Social cognitive theory promotes the idea of human agency. Individuals have some type of proactive involvement with their own development, and their actions are capable of producing desired results. In effect, humans can make things happen both in themselves and in their environment. Further, human agency is governed by an individual’s self-beliefs which enable
them to exercise a certain measure of control over their thoughts, feelings, and actions. People behave in ways that reflect what they think, believe, and feel. Thus, the beliefs of individuals, particularly what they believe of themselves, are a critical component to how they behave (Pajares, 2003).

Bandura’s socio-cognitive perspective advocated the individual as self-organizing, proactive, and self-regulating rather than as reactive and controlled by biological or environmental forces. It is through individuals’ reflective practices and self-beliefs that they are able to exercise a measure of control over their thoughts, feelings, and actions. In all, Bandura’s theoretical portrait is one in which the beliefs that people have about their capabilities are critical elements. According to Bandura, how people behave is more often predicted by their self-efficacy beliefs rather than by what they are actually capable of accomplishing. These self-perceptions help determine what individuals do with the knowledge and skills they have.

**Self-Efficacy Defined**

A key element of Bandura’s social cognitive theory is self-efficacy belief. Self-efficacy is the belief in one’s own ability to accomplish a certain level of performance. Bandura states, Perceived self-efficacy is defined as people’s judgments of their capabilities to organize and execute courses of action required to attain designated types of performances. It is concerned not with the skills one has but the judgments of what one can do with whatever skills one possesses. (1986, p. 391)

Self-efficacy perception differs from other types of self belief in its reference to particular accomplishments and to the achievement of specific outcomes, and it involves the belief in one’s ability to systematize and implement a designated system of behaviors in order to achieve those outcomes (Bandura, 1977; Pajares, 1996; Schunk, 1989; Zimmerman, 1995).
Self-efficacy beliefs affect behavior in several ways. They influence the choices people make and the courses of action they pursue. Individuals engage in tasks in which they feel competent and confident and avoid those in which they do not. Efficacy beliefs help determine how much effort people will expend on an activity, how long they will persevere when confronting obstacles, and how resilient they will be in the face of adverse situations. Efficacy beliefs also influence the amount of stress and anxiety individuals experience as they engage in a task. As a consequence, self-efficacy beliefs can powerfully influence the level of accomplishment that individuals ultimately realize. Perceived self-efficacy focuses on one’s belief in the personal capability to accomplish a task rather than on belief in mere cause and effect due to circumstance. The assessment of self-efficacy perception, or an individual’s belief in capability, is therefore more predictive of individual performance (Bandura, 1993).

Sources of Self-Efficacy

The many benefits of a sense of personal efficacy do not arise simply from capability. Saying something should not be confused with believing it to be so. Simply saying that one is capable is not necessarily self-convincing. Self-efficacy beliefs are the product of a complex process of self-persuasion that relies on cognitive processing of diverse sources of efficacy information conveyed enactively, vicariously, socially, and physiologically (Bandura, 1986). Once formed, efficacy beliefs contribute significantly to the level and quality of human functioning.

Enactive mastery experiences. One’s prior experiences with the tasks in question provide the most reliable source of information for efficacy beliefs. Successes strengthen self-efficacy, whereas repeated failures undermine it. A firm sense of efficacy built on the basis of past successes is believed to withstand temporary failures.
Vicarious experience. People also establish their self-efficacy beliefs on the basis of similar others’ performance on the tasks. Modeling thus serves as another effective source of efficacy information. Vicarious experience exerts greater influence on self-efficacy formation when there are no absolute measures of adequacy and when people perceive similarity between the model and themselves (Schunk, Hanson, & Cox, 1987).

Verbal persuasion. Persuasive communication and evaluative feedback from significant others also influence one’s judgment of self-efficacy. Verbal persuasion is most effective when people who convey the efficacy information are viewed knowledgeable and credible and when the information is viewed realistic. However, disconfirming mastery experience easily outweighs self-efficacy beliefs created solely on the basis of verbal persuasion.

Physiological reactions. Heightened physiological arousals such as sweating, heartbeats, fatigue, aches, pain, and mood changes also send a signal to people that affects their efficacy appraisal. Recognition of these symptoms leads to self-efficacy adjustments through their effects on cognitive processing.

Information acquired from these sources does not automatically influence self-efficacy; rather, it is cognitively appraised (Bandura, 1986). In appraising efficacy, individuals weigh and combine their perceptions of their ability, the difficulty of the task, the amount of effort expended, the amount of external assistance received, the number and pattern of successes and failures, the perceived similarity to models, and persuader credibility (Schunk, 1989).

Self-Concept versus Self-Efficacy

A strong belief held by both researchers and practitioners in the field of education is that self perceptions provide a basic foundation of behavior and motivation. There are multiple research traditions in the study of self-perception. However, there have been two primary
research traditions in the study of academic self-perception: (a) self-concept tradition and (b) self-efficacy tradition.

Self-concept is informally defined as a composite view of oneself. Formal definitions of self-concept include (a) an individual’s thoughts and feelings in reference to himself as object (Rosenberg, 1979); (b) a person’s perception of himself, which is formed through experiences with the environment (Shavelson, Hubner, & Stanton, 1976); and (c) a person’s self-evaluative judgments about his ability to accomplish a certain task (Harter, 1985). Self-concept research in the past tended to involve a global construct such as global self-esteem (Bong & Skaalvik, 2003). However, based largely on the work of Herbert Marsh and his associates (e.g., Marsh, 1993), the field has come to recognize that any sound understanding of self-concept and its impact must take into account the multidimensional nature of the construct.

Notable Differences

Past versus future orientations. Self-concept focuses on general ability perceptions, whereas self-efficacy focuses on expectations of being able to execute specific actions. Most academic self-concept items begin with phrases that read, “I am good,” “I am hopeless,” or I have done well” (Byrne, 1996). Self-efficacy items usually start with “How confident are you that you can…?” “How well can you…?” or “I am confident that I will be able to…” (Bandura, 2006). The examples show that the wording of self-concept items tends to direct the attention of respondents toward their past accomplishments asking them to answer the question, “Am I good at it?” Self-efficacy items prompt the respondents to focus on their future expectancies by answering the question, “Can I do it?”

Level of specificity. Traditional measures of self-concept and self-efficacy also differ with respect to the level of generality of the self-judgments (Pajares, 1996). Academic self-concept,
even when assessed in reference to particular domains has been measured at more general levels. Students typically report their general feelings of doing well or poorly in given subject areas. Beliefs of self-efficacy have been examined at more specific levels. Because efficacy questions correspond directly to target performance, important features of tasks are clearly spelled out (Bandura, 1997).

Similarities

*Perceived competence.* Perceived competence in well-defined domains or activities comprises the single most critical element in both self-concept and self-efficacy (Bong & Skaalvik, 2003). Perceptions of competence comprise the key element in most contemporary theorizing of academic self-concept (e.g., Harter, 1982; Wigfield et al., 1997). Perceived capability in reference to specific tasks and domains is also the principal component of academic self-efficacy judgments.

*Content-specificity.* In his critique of self-concept research, Bandura (1981) contended that the global nature of self-concept detracts from its power to explain behavior. However, modern research in self-concept acknowledges the multidimensional nature of the construct and the need for domain specific measures of self-concept (e.g., Marsh, Byrne, & Shavelson, 1988; Skaalvik & Rankin, 1995). Self-efficacy belief is also specific to a domain or context; an individual may recognize capability in music education, for instance, while recognizing lack of ability in other academic domains (McPherson & McCormick, 2006; Pintrich & Schunk, 2002; Schunk & Pajares, 2001).

Confidence and Competence

Self-efficacy has to do with *perceived* competence as opposed to *actual* competence. A capability is only as good as its execution. The self-assurance with which people approach and
manage difficult tasks determines whether they make good or poor use of their capabilities (Bandura, 1997). Whether an individual will initiate or persevere in a particular course of action is determined by the level of confidence in their judgment of their capability. Competence beliefs affect behavior by influencing a person’s task choice, effort, and determination. At the same time, behavior reciprocally affects an individual’s perception of self-efficacy, because success or failure on a particular task will lead a person to develop certain beliefs, attitudes, or cognitive strategies regarding future behavior.

The Causal Centrality of Belief Mechanisms

Despite adherence to the principle of triadic reciprocal determination, which states that causal relationships can be developed and reinforced through any of internal, behavioral, or environmental sources, the impact of each of these sources in causal relationships is not given equal weighting in social cognitive theory.

Self-regulatory systems lie at the very heart of causal processes. They not only mediate the effects of most external influences, but provide the very basis for purposeful action. Most human behavior, being purposive, is regulated by forethought. (Bandura, 1991, p. 248)

Bandura’s contention is that through self-regulatory cognitive processes, individuals initiate behavior, perceive and regulate its expression, and observe its product. While environmental forces can influence behavioral choices and provide incentives to act, individuals make the decision to carry out actions through self-regulatory processes. A crucial component in self-regulation is an individual’s self-efficacy belief.

Bandura contends that belief constructs are causally central to behavioral expression and that self-efficacy beliefs are predominant amongst the constructs that influence behavior. He
argues that self-efficacy influences the activities chosen, the goals and difficulty level set, effort and enthusiasm applied, level of persistence in the face of difficulty, and affective self-reactions (Bandura, 1977, 1982, 1986, 1991, 1997). Through these influences, self-efficacy plays a determining role in most behavioral choices.

Summary

Self-efficacy perception is a cognitive awareness of one’s capability to perform designated tasks and can vary from domain to domain. Individuals form their self-efficacy beliefs by interpreting information from four sources: mastery experience, vicarious experience, social persuasions, and physiological or affective states. Self-efficacy’s operational specificity to particular tasks leads to more achievement predictability than is observed in other forms of self-belief inquiry (Bandura, 1997; Bong & Clark, 1999). In addition, self-efficacy perception is a fundamental catalyst for human action, as individuals act or persist based on their belief in their ability to accomplish the tasks that lie before them.

In addition, the substantial body of research on the diverse effects of perceived personal efficacy can be summarized as follows. People who have a low sense of efficacy in a given domain shy away from difficult tasks, which they perceive as personal threats. They have low aspirations and weak commitment to the goals they choose to pursue. They maintain a self-diagnostic focus rather than concentrate on how to perform successfully. When faced with difficult tasks, they dwell on their personal deficiencies, on the obstacles they will encounter, and on all kinds of adverse outcomes. They slacken their efforts and give up quickly in the face of difficulties. They are slow to recover their sense of efficacy following failure or setbacks. Because they diagnose insufficient performance as deficient aptitude, it does not require much failure for them to lose faith in their capabilities.
A strong sense of efficacy enhances personal accomplishments in many ways. People with high efficacy approach difficult tasks as challenges to be mastered rather than as threats to be avoided. Such an efficacious outlook fosters interest and deep engrossment in activities. Efficacious people set themselves challenging goals and maintain strong commitment to them. They maintain a task-diagnostic focus that guides effective performance. They heighten and sustain their efforts in the face of failure. They attribute failure to insufficient effort or deficient knowledge and skills that are acquirable. They quickly recover their sense of efficacy after failures or setbacks. They approach threatening situations with assurance that they can exercise control over them.

Self-Efficacy of Teachers

Bandura’s theory of self-efficacy can be applied to teachers. Teachers’ efficacy beliefs are defined as “contextual judgments of their capability to succeed in particular instructional endeavors” (Brownell & Pajares, 1999, p.154). Ashton and Webb (1986) defined teacher sense of efficacy as “teachers’ situation-specific perceptions of their own teaching abilities” (p. 3).

Teachers’ beliefs in their personal efficacy affect their general orientation toward the educational process as well as their specific instructional activities (Bandura, 1995). For instance, self-efficacy is related to the amount of effort that teachers put into their performance and their perseverence in challenging tasks (Pajares, 1996). Bandura suggests that self-efficacy thinking is the strongest predictor of motivation and beliefs. He found that teachers with strong self-efficacy felt competent to persist longer whereas those with weaker self-efficacy did not feel as competent (Bandura, 1977, 1986). This section offers an overview of teacher efficacy research and its measurement.
Teacher Efficacy: Overview of Research

Extensive research using the construct of teacher efficacy has been conducted over the last three decades. This research has consistently identified that teachers’ beliefs about their own competence in performing the tasks that teaching requires are major contributing factors to almost all aspects of teaching behavior, attitudes, and outcomes (Bandura, 1997; Pajares, 1996; Ross, 1998; Smylie, 1990; Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998). Teacher behavior, rather than the program taught, has long been associated with the behavior and achievement of children in schools (Berliner, 1984; Brophy, 1987; Brophy & Good, 1986; Weinstein & Mignano, 1993). Since the advent of research into teacher self-efficacy (Armor et al., 1976; Ashton, Webb, & Doda, 1983), this belief construct has consistently shown a close relationship with the teaching behaviors identified to promote positive classroom behavior and advance student achievement (Bandura, 1997; Pajares, 1997; Ross, 1998; Tschannen-Moran et al., 1998; Zimmerman, 1995).

Generally these findings indicate that teachers who evaluate their own teaching competence highly and thus hold strong self-efficacy beliefs for the tasks of teaching, set higher teaching goals (Allinder, 1995), elicit higher achievement from their students (Ashton & Webb, 1986), and encourage positive self-referent beliefs in their students (Schunk & Zimmerman, 1997). Teachers with high teaching self-efficacy are more likely to use innovative teaching practices (Moeller & Ishii-Jordan, 1996), are more student-centered in their classroom practice (Dembo & Gibson, 1985; Gibson & Dembo, 1984), and use more effective behavior management strategies (Agne, Greenwood, & Miller, 1994; Woolfolk & Hoy, 1990).

Such teachers tend to apply appropriate problem-solving processes in novel circumstances (Moeller & Ishii-Jordan, 1996), including collaborative approaches (Stein &
Wang, 1988), are more accepting of children who are difficult to teach or who have special needs (Podell & Soodak, 1993; Soodak & Podell, 1993), and adopt collaborative approaches with parents (Hoover-Dempsey, Bassler, & Brissie, 1992; Stein & Wang, 1988). They exhibit lower levels of stress and burnout (Greenwood, Olejnik, & Parkay, 1990; Smilansky, 1984) and report a greater long-term commitment to the teaching profession (Evans & Tribble, 1986; Soodak & Podell, 1997). Teaching self-efficacy has been described as a powerful construct which distinguishes variability in teaching competence amongst teachers more consistently than any other measure (Ross, 1998; Smylie, 1990; Tschannen-Moran et al., 1998).

Measuring Teacher Efficacy

The research in teacher efficacy has been a subject of debate in regard to the meaning of teacher efficacy and the optimal methods of measuring the construct. Unfortunately, researchers’ interpretations of the Bandura (1977) and Rotter (1966) theories have significantly muddied the efficacy waters concerning the theoretical formulation of teacher efficacy and the psychometric attempts to measure the construct (Henson, 2002). Even with the measurement challenges, teacher efficacy has still emerged as a worthy construct in educational research. Teachers’ self-beliefs as determinants of teaching behavior are a simple, yet powerful phenomenon to investigate.

Several psychological measures of teacher efficacy have grown out of Bandura’s work. More recent research has focused on (a) measurements of teachers’ self-beliefs as determinants of teaching behaviors (Ashton, Webb, & Doda, 1983; Bandura, 1997; Gibson & Dembo, 1984; Guskey & Pasaro, 1994; Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998); (b) measurements of context specific teacher self-efficacy (Bandura, 1997; Riggs & Enochs, 1990; Soodak & Podell, 1996; Tschannen-Moran & Woolfolk Hoy, 2001); and (c) measurements of teacher self-efficacy
with factor analysis (Henson, Kogan, & Vacha-Haase, 2001; Pontius, 1998). Because self-efficacy is easily applicable to educational settings and due to the impact of teacher efficacy levels on students, different instruments have been developed to measure teacher self-efficacy.

Opposing views exist on what key elements best represent teacher efficacy. Two strands of research examining the construct and measurement of teacher efficacy exist in the literature (Tschannen-Moran et al., 1998). The first strand is grounded in Rotter’s (1966) social learning theory of internal versus external control. The RAND Corporation, who first conducted research on teacher efficacy, developed two items to measure a teacher’s locus of control (Armor et al., 1976). RAND researchers defined efficacy as the extent to which a teacher believes he/she has the capacity to affect students’ performance (Dembo & Gibson, 1985).

The other strand of teacher efficacy attempts to apply Bandura’s (1977) social cognitive theory and his construct of self-efficacy to teachers (Ashton & Webb, 1986; Gibson & Dembo, 1984). Gibson and Dembo (1984) built on the RAND studies and applied Bandura’s theory to the construct of teacher efficacy when developing their Teacher Efficacy Scale (TES). When their 30-item measure yielded two factors, Gibson and Dembo assumed these factors represented the two expectancies (i.e., self-efficacy and outcome expectancy) of Bandura’s social cognitive theory (Tschannen-Moran & Woolfolk Hoy, 2001). Gibson and Dembo labeled the first factor personal teaching efficacy, representing Bandura’s self efficacy. It was assumed that this factor would measure teachers’ evaluation of their abilities to bring about positive student change (Gibson & Dembo, 1984). The second factor was labeled teaching efficacy, representing Bandura’s outcome expectancy. It was assumed that this factor would measure the degree to which teachers believed students can be taught given such factors as family background, IQ, and school conditions (Gibson & Dembo, 1984).
Bandura believes the key to measurement exists in the creation of domain specific instruments designed to look at one part of an individual’s personal efficacy. Because efficacy can be different within one person depending on the area being measured, specification is the key to successful measurement (Bandura, 2006). Bandura identified the importance of domain-specific behaviors and suggested a continuum by which participants determine at what point something is too difficult or is not worth the reward (Bandura, 2006). Therefore, recent literature has discouraged the use of Gibson and Dembo’s scale for measuring teacher efficacy due to the lack of specificity of the scale, the two factor structure, and the reliability and validity of the scores (Henson et al., 2001; Wheatley, 2005). The following sections describe these concerns.

**Construct Validity and Reliability**

After investigating the reliability of the Teacher Efficacy Scale and other efficacy measures, Henson et al. (2001) concluded that the teaching efficacy subscale of Gibson and Dembo’s (1984) measurement was questionable and should be abandoned. These authors encouraged efforts to develop a scale that more reliably measures the outcome expectancy dimension of Bandura’s theory. Tschannen-Moran et al. (1998) and Woolfolk and Hoy (1990) explained that the items used to measure the second factor cannot be considered outcome expectancy.

Brouwers and Tomic (2003) studied several factor models from the Teacher Efficacy Scale that were proposed in the literature including Gibson and Dembo’s (1984) two-factor model, Woolfolk and Hoy’s (1990) three-factor model, and Soodak and Podell’s (1996) three-factor model. Findings revealed that all authors studying the factorial validity of the Teacher Efficacy Scale used only a principal component analysis, which provides no information regarding the overall fit of the factorial models. When a confirmatory and exploratory factor
analysis were employed, these authors identified a four-factor model that was significantly better than the proposed models, yet the four-factor model did not achieve the recommended criterion of adequately fitted models and was therefore rejected.

*Level of Specificity*

There is concern regarding the lack of specificity of Gibson and Dembo’s (1984) scale (Brouwers & Tomic, 2003). Teacher efficacy is both context and subject-matter specific (Tschannen-Moran et al., 1998). For instance, a teacher may feel confident in one subject matter or when working with one type of student, but feel less able in teaching other subjects or with different students (Tschannen-Moran et al., 1998). Thus, when developing measurements of teacher efficacy, it is difficult to determine the appropriate level of specificity. When measures have limited the scope of efficacy beliefs, significant results have been identified (Tschannen-Moran et al., 1998). The disadvantage of narrowing the scope of efficacy measures is the difficulty of determining the predictive value and generalizability of these measures (Tschannen-Moran et al., 1998).

For instance, researchers have modified the Gibson and Dembo instrument to investigate teachers’ sense of efficacy in the following areas: science teaching (Riggs & Enochs, 1990), classroom management (Emmer, 1990), special education (Meijer and Foster, 1988), and early intervention (Lamorey & Wilcox, 2005). Brouwers and Tomic (2003) argue that teacher efficacy measurements should assess belief in the ability to perform domain-specific behaviors. With global teacher efficacy scales, it is difficult to identify teaching tasks for which teachers feel more or less efficacious (Wheatley, 2005). In order for efficacy measurements to be useful and generalizable, teachers need to be assessed on their competence across a wide range of activities.
and tasks they are required to perform for global teacher efficacy (Tschannen-Moran & Woolfolk Hoy, 2001).

Implications

Given the potential value of teacher self-efficacy as a construct and in light of the current controversy over how to best measure teacher efficacy, this study will focus on the perceived self-efficacy of pre-service teachers’ beliefs about music and teaching music. Traditional measures of teacher efficacy (e.g., Ashton & Webb, 1986; Gibson & Dembo, 1984) focus on teachers’ perceptions about their own capabilities to foster students’ learning and engagement. However, the present study is more concerned with pre-service teacher’s music self-efficacy and with the sources that form music teaching self-efficacy.

Sources of Efficacy: Implications for Teachers

As noted earlier, Bandura (1986, 1997) postulated four sources of self-efficacy information: mastery experiences, vicarious experience, physiological and emotional arousal, and social persuasion. These four sources contribute to both the analysis of the teaching task and to self-perceptions of teaching competence, but in different ways. For example, observing a teacher can provide information about the nature of a teaching task, but it also contributes to self-perceptions of teaching competence, as the viewer compares self with model. Mastery or enactive experiences are a powerful source of knowledge about one’s own capabilities as a teacher but also supply information about the complexity of the teaching task. The differential impact of each of these sources depends on cognitive processing – what is attended to, what is remembered, and how the teacher thinks about each of the experiences.
Mastery Experiences

Mastery or enactive experiences are the most powerful source of efficacy information. The perception that a performance has been successful raises efficacy beliefs, which contributes to the expectation of proficient performance in the future. Efficacy beliefs are strengthened substantially when success is achieved on difficult tasks with little assistance or when success is achieved early in learning with few setbacks; however, not all successful experiences encourage efficacy. For example, efficacy is not enhanced when success is achieved through extensive external assistance or on an easy and/or unimportant task. The perception that one’s performance has been a failure lowers efficacy beliefs, which contributes to the expectation that future performances will also be inept. This assault on efficacy is likely when the failure occurs early in learning and cannot be attributed to a lack of effort or events outside the person’s control (Bandura, 1986, 1997).

Self-perception of teaching competence is affected by all four sources identified by Bandura, but it is most directly influenced by mastery experiences and the physiological arousal associated with those experiences. Only in a situation of actual teaching can an individual assess the capabilities he or she brings to the task and experience the consequence of those capabilities. In situations of actual teaching, teachers gain information about how their strengths and weaknesses play out in managing, instructing, and evaluating a group of students. One may learn, for example, that enthusiasm is an asset when working with a group of particularly active children but is not enough to compensate for a lack of organization or planning.

Vicarious Experiences

Watching others teach provides impressions about the nature of the teaching task. Models of successful teachers are the bases for deciding that the teaching task is manageable and that
situational and personal resources are adequate. Watching others teach in skillful and adept ways – especially observing admired, credible, and similar models – can affect the observer’s personal teaching competence. Comparisons to others can lead observers, particularly beginning teachers, to believe that they also have the capabilities to be successful teachers under similar circumstances (Bandura, 1977, 1986; Schunk, 1987). Likewise, observing other teachers’ failures despite strong effort erodes efficacy beliefs by leading to the conclusion that the task is unmanageable, unless the observer believes that he or she is more skillful than the model.

**Physiological and Emotional States**

The level of emotional and physiological arousal a person experiences in a teaching situation adds to self-perceptions of teaching competence. Feelings of relaxation and positive emotions signal self-assurance and the anticipation of future success (Bandura, 1996). Arousal, such as increased heart and respiratory rate, “butterflies,” increased perspiration, or trembling hands, can be read either positively as excitement or negatively as stress and anxiety, depending on the circumstances, the person’s history, and the overall level of arousal (Bandura, 1997). Moderate levels of arousal can improve performance by focusing attention and energy on the task. However, high levels of arousal can impair functioning and interfere with making the best use of one’s skills and capabilities. In order for physiological states to have an effect, they must be attended to. If the task itself requires all of a person’s attentional resources, then affective states may contribute little to a sense of personal teaching competence (Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998).

**Verbal Persuasion**

Verbal persuasion can provide information about the nature of teaching, give encouragement and strategies for overcoming situational obstacles, and provide specific
feedback about a teacher’s performance. Coursework and professional development workshops give teachers information about the task of teaching. These experiences also provide strategies and methods that can contribute to a teacher’s arsenal of skills. But these new skills may not have an impact on self-perceptions of teaching competence until they are used successfully to enhance student learning. Although a pep talk alone may be limited in strengthening personal teaching competence, such persuasion can counter occasional setbacks that might otherwise instill self-doubt and interrupt persistence (Schunk, 1989). The potency of the persuasion depends on the credibility, trustworthiness, and expertise of the persuader (Bandura, 1986). Social persuasion can contribute to successful performances to the extent that a persuasive boost leads a person to attempt new strategies or to try hard enough to succeed (Bandura, 1982). However, when individuals do not have the skills to perform well on a particular task, exhortations to work harder are likely to exacerbate low self-efficacy (Gist & Mitchell, 1992).

Specific performance feedback from supervisors, other teachers, and even students can be a potent source of information about how a teacher’s skills and strategies match the demands of a particular teaching task. Specific performance feedback provides social comparison information, that is, information about whether the teaching performance and outcomes are adequate, inferior to those of others teaching in similar situations, or superior to those of others teaching in similar situations. Social persuasion may lower self-perceptions of personal teaching competence if the feedback is overly harsh and global rather than focused and constructive. In response to critical feedback, teachers may adopt the self-protective strategy of concluding that under the particular set of circumstances achieving the hoped-for results was impossible.
Cognitive Processes

Although all four sources of information play roles in the creation of efficacy beliefs, it is the interpretation of this information that is critical. Cognitive processing determines how the sources of information will be weighed and how they will influence the analysis of the teaching task and the assessment of personal teaching competence. The interaction of task analysis and competence, in turn, shapes teacher efficacy.

The Development and Maintenance of Teacher Self-Efficacy

At an operational level efficacy beliefs must be matched by appropriate skill levels. Beliefs alone cannot produce skilled behavior (Bandura, 1997). The skills involved in teaching however, are multifaceted and often require the teacher to devise solutions to problems in novel circumstances. While much teaching behavior may eventually develop to a level of automaticity requiring little conscious cognitive processing (Ashton & Webb, 1986; Bandura, 1997), considerable planning, skilled execution and persistent effort will be required in novel circumstances.

Recent calls in the literature have identified the need for research to examine the development of teacher self-efficacy in teacher preparation programs (Pajares, 1996, 1997; Tschannen-Moran et al., 1998). The early years of teaching impose many threats to the developing efficacy of beginning teachers. Modifications to teacher education programs, which strive to develop high efficacy and provide some measure of protection against the threats to efficacy in the early years of teaching, may assist teachers to maintain high efficacy beliefs leading to improved teaching and learning in schools (Pajares, 1996; Tschannen-Moran et al., 1998; Wideen et al., 1998).
Tschannen-Moran et al. (1998) described the development and maintenance of teacher self-efficacy beliefs diagrammatically (see Figure 3.1). They identified initial sources of efficacy information in accordance with Bandura’s (1986, 1997) view that they develop mainly from mastery experience, but also from the observation of others, verbal persuasion and the personal physiological effects of behavioral performance. In this model, these sources of evidence of personal competence from past experience are weighed in terms of current goals and task requirements to produce a prediction of likely efficacy in the current setting. Behavioral components are chosen in the manner described earlier and the performance outcomes are perceived and incorporated as new sources of efficacy information, which after accommodation with prior beliefs, influence future predictions of self-efficacy.

Figure 3.1. The cyclical nature of teacher efficacy.

This cycle of action and reaction has a tendency toward stability after repeated experience with similar tasks under similar conditions. Thus it would be predicted by social cognitive theory that teachers’ efficacy beliefs, the teaching tasks in which they readily engage, the teaching methods they typically choose, their relative persistence with children who have difficulty learning, and the pattern of learning outcomes they attain, would be reasonably stable and resistant to change after an initial developmental period (Ross, 1998; Tschannen-Moran et al., 1998).

**Pre-service Teacher Self-Efficacy**

Efficacy information available to pre-service teachers is limited (Tschannen-Moran et al., 1998). For the most part during coursework, it would take the form of verbal persuasion and vicarious experience. Bandura (1997) contends that these are weaker sources from which individuals may build their personal efficacy expectations. They may be tentative at best, and be open to confirmation or modification from the more powerful source of mastery experience. Verbal persuasion and modeling effects can contribute to pre-service teachers’ views about the degree of impact teachers are able to make, but only by inference would they inform pre-service teachers’ views about their own competencies.

Peer teaching and practicum experiences for teacher trainees can provide the primary sources of information from a mastery perspective, and according to Bandura’s (1997) formulation, this should provide the most powerful information to pre-service teachers about their teaching self-efficacy. A number of studies have examined the impact of teaching practice on teacher preparation and the development of efficacy beliefs (DeMoulin, 1994; Dunkin et al., 1994; Ghaith & Yaghi, 1997; Gorrell & Hwang, 1995; Woolfolk & Hoy, 1990). From a variety of perspectives, these studies have repeatedly demonstrated the superior power of practicum
experiences to influence pre-service teachers’ beliefs about their preparedness and competence as teachers.

Practicum experiences of pre-service teachers are however limited in the amount and length of time continuously spent in the role of teacher, and in the degree of responsibility the student teacher would feel, or could assume, for learning outcomes. They are also usually intended as supported environments with mentoring provided by an experienced teacher who may assume final responsibility for classroom management and provide formative and summative feedback on a regular basis (Dunshea et al., 1995), though this ideal is not always provided by supervising teachers (Coladarci & Brenton, 1991).

Although the experience of reality shock for beginning teachers is well documented, the research is conflicting about the level of confidence exhibited by pre-service teachers. Some studies indicate that pre-service teachers report high levels self-efficacy due to overconfidence (Soodak & Podell, 1997; Walker, 1992). They suggest that this overconfidence is based on an ill-informed view of the demands of the teaching profession that in turn makes beginning teachers susceptible to efficacy threats in their early years in the profession. Other research suggests that the efficacy expectations of pre-service teachers are similar or somewhat lower than those of practicing teachers (Herbert, Lee, & Williamson, 1998).

Some studies have identified that pre-service and practicing teachers differ in their efficacy expectations about different aspects of teaching and suggest that global measures may not identify these differences (Benz et al., 1992; Evans & Tribble, 1986; Ginns, Tulip, Watters, & Lucas, 1995; Herbert et al., 1998). For example, pre-service teachers may view highly their ability to motivate students using innovative methods, but have concerns about their classroom management and assessment skills (Benz et al., 1992; Woolfolk & Hoy, 1990).
Studies that have compared perceptions of pre-service teacher self-efficacy with teaching behaviors indicate that students’ perceptions may be accurate predictors of their teaching competence (Saklofske, Michayluk, & Randhawa, 1988; Wood & Eicher, 1989). For example Wood and Eicher (1989) found a close match between students’ efficacy ratings following practicum experience compared with their supervisors’ ratings of their performance.

Though the evidence is unclear about the accuracy of students’ assessments of their competence in teaching tasks, their teaching behaviors do differ in tandem with their efficacy expectations, in similar ways to practicing teachers (Gorrell & Trentham, 1992; Woolfolk & Hoy, 1990). Those who hold high efficacy beliefs therefore, should engage in the teaching process more readily, apply more effort to their teaching and persist longer in the face of difficulty (Bandura, 1997). According to self-efficacy theory, such behavior is likely to bring about positive outcomes that should strengthen the original efficacious belief by providing beginning teachers with early mastery experiences.

It is important that these early experiences are ones of mastery and not ones that threaten the beginning teacher’s sense of efficacy. Since it is during teacher training and the early years of teaching that efficacy beliefs are malleable (DeMoulin, 1994; Ross, 1998; Tschannen-Moran et al., 1998), sustained high efficacy is likely to be achieved where teacher education programs build a high level of skill, and induction into the teaching profession is conducted in a supportive way (Dunshea et al., 1995). These circumstances may make mastery in early experience more likely.

As previously indicated, it is not sufficient for pre-service teachers to have confidence in their ability to teach. They must also have the ability to teach; otherwise their confidence may be quickly exposed to the threats to efficacy identified by Ashton et al. (1983). These researchers...
suggested that teaching exposes teachers to efficacy threats for a number of reasons. The absence of benchmarks makes it difficult for teachers to know if their performance is competent and if their efforts result in lasting change in their students. Because teachers work in relative isolation from one another and there exists a culture of non-interference, teachers receive few collegial supports. Ashton et al. (1983) also suggested that teachers feel largely disempowered by decisions emanating from administrators and perceive little support from their school-based superiors. They are often the subject of public criticism and receive little public reward or recognition for their efforts (Ashton et al., 1983).

In light of pre-service teacher self-efficacy research, recommendations for the modification of teacher education programs have been made to enhance beginning teachers’ resilience in the face of threats to their efficacy (Ashton, 1984; Ashton & Webb, 1986; Tschannen-Moran et al., 1998; Woolfolk & Hoy, 1990). Personal goal setting and monitoring of the teacher’s own cognitive and emotional reactions to difficult students are considered necessary outcomes of teacher education programs (Ashton, 1984). It is suggested that these outcomes could best be achieved in programs that foster the development of reflective analytical thinking skills, by providing considerable exposure to self and peer assessment and the development of collegial learning methods (Ashton, 1984) in supported context-based programs (DeMoulin, 1994; Tschannen-Moran et al., 1998).

**Music Teaching Self-efficacy**

Little research has examined the role self-efficacy might play in the development of perceived confidence and competence among pre-service generalists to teach music. Kretchmer (2002) studied the efficacy beliefs of elementary education majors enrolled in a music methods course as part of their teacher preparation program. The purpose of this study was to measure the
changes in participants’ beliefs and attitudes about the place of music in an elementary curriculum. In addition, the study measured participants’ self-perceived ability to include music in their classroom instruction.

Results of Kretchmer (2002) indicated significant gains in participants’ self-efficacy beliefs regarding music skill and knowledge and ability to teach music successfully. These gains in participants’ self-efficacy beliefs followed participation in a four-week program designed to promote increases in self-efficacy through participation in model lessons and vicarious experiences (e.g., watching a video lesson of a music teacher teaching young students). Kretchmer advocated that conducting research with an instructor’s own college students would likely provide more opportunities to engage in dialogue about broad educational matters specifically related to issues in music teaching and learning that arise from vicarious and participatory experiences.

Another more recent study (Buckner, 2008) examined changes in self-efficacy of elementary education majors upon completing a course in music teaching methods. Even though results of this study revealed that elementary education majors’ responses increased in confidence to teach music after participation in the music methods course, generalists still rated their confidence on the low end of the 6-point Likert scale (3.29-pre to 3.78-post). These results suggested a negative belief in confidence to make music through singing and playing an instrument. Buckner called for future research that examines ways to increase generalists’ confidence to a positive belief, especially with regard to self-efficacy beliefs through mastery experiences of personally making music.

Although research exists that investigates the complexities of elementary classroom teacher training in music, relatively little research has explored the issue by examining students’
self-efficacy beliefs regarding making and teaching music within the construct of teacher self-efficacy. Specifically, little research has attempted to identify the sources of pre-service generalists’ self-efficacy beliefs in music. With so much existing research in the construct of self-efficacy and its related construct, teacher efficacy, it seems reasonable that an examination of music teaching self-efficacy beliefs among pre-service generalists within the larger context of self-efficacy may bring clarity to this complex research problem.

Chapter Summary

Self-efficacy beliefs influence the activities in which an individual will choose to engage, the behaviors used, the level of effort applied, and an individual’s relative persistence in the face of difficulty. According to social cognitive theory, self-efficacy is developed and maintained through processes of reciprocal determinism. Through this principle Bandura argues that belief systems have a predominant effect in the production of behavior and that self-efficacy beliefs are paramount in this effect.

Teacher self-efficacy has been the subject of continuing research over the last three decades. From this research teacher self-efficacy has emerged as a major characteristic distinguishing competent teaching behaviors and student outcomes. The research direction has evolved from initially describing the characteristics of teachers with varying efficacy beliefs, to more recently investigating methods of developing and maintaining high levels of teaching self-efficacy.

Cross-sectional research has provided an unclear picture about the efficacy levels of pre-service teachers with some research indicating unrealistically high efficacy, others indicating little difference between student teachers and practicing teachers, and some research indicating qualitative differences in the tasks about which student and practicing teachers feel efficacious.
Few studies have been reported that track the development of teaching self-efficacy constructs in pre-service teachers or course-based interventions aimed at improving teaching efficacy outcomes, and fewer still have explored music teaching self-efficacy of pre-service generalists.

Teacher educators can foster musical competence and confidence in pre-service generalists by considering the four sources of self-efficacy: (a) enactive mastery experience, (b) vicarious experience, (c) verbal persuasion, and (d) physiological and affective states. These four categories can be a starting point from which teachers may consider providing their students with practical teaching experience, peer and adult models, timely and constructive feedback, and stress-reducing methods. Then, as these thoughts become action through a variety of classroom strategies, pre-service generalists can gain independence and increased determination as they learn how to work more effectively and with confidence in their ability to teach music to children.
CHAPTER 4
METHODOLOGY

This study sought to balance past research in self-efficacy theory with an approach suitable for study in a music methods course for early childhood education (ECE) pre-service teachers. The research employed an exploratory quantitative design embedded within a teacher research paradigm. Narrative data was also collected from participants to help explain and elaborate on the quantitative results. ECE pre-service teachers’ personal perceptions about music and of their own musical ability, as well as their perceived self-efficacy for teaching music were surveyed at pre-determined intervals throughout their 15-week music methods course.

An embedded teacher research paradigm was used to develop, implement, and evaluate teaching approaches and overall course design. As such, the researcher studied her own students enrolled in two sections of the course. An explanation of the research methodology follows, including a discussion of the project development, location and participants, sources of data, development and validation of data collection techniques, and data collection and analysis procedures.

Project Development

The project began in 2008 following the intersection of two independent developments. The first involved the researcher’s personal challenges in continuing to develop and teach music methods courses for ECE pre-service teachers. The second involved the researcher’s consolidation of the research for her doctoral studies, relating self-efficacy to pre-service teachers’ confidence and competence to teach music through the context of a music methods course.
This study integrated past self-efficacy research with a customized approach suitable for study in an undergraduate music methods course for ECE pre-service teachers. Extra attention was devoted to ensuring that the study was appropriate to self-efficacy theory as well as to the domain of music education. These considerations were taken into account in the preparation of the study as discussed below. Theoretical underpinnings of the methodology are also explained.

Preparing for the Study

Several initial steps were taken in preparation for this research. These included (a) gaining approval from the Institutional Review Board (IRB) and gatekeeper, (b) developing consent forms and data collection instruments, and (c) piloting the questionnaires. This section outlines these preliminary steps and closes with a discussion of how the pre-study preparation informed the overall research design.

IRB and Gatekeeper Approval

Since this study involved research with human subjects and was conducted with the approval of two universities, the researcher went through the application process with the Institutional Review Boards (IRBs) at both universities: (a) the University of Illinois at Urbana-Champaign where the researcher was a doctoral student; and (b) the university in which the researcher taught and conducted the study. The IRB process occurred concurrently with official communication with the Director of the School of Music at the university where the research was conducted. The researcher prepared a letter to the Director as the gatekeeper of the School of Music and met personally with him to explain the research and its purposes. The Director gave his approval for the study by signing and dating the letter. The IRB subsequently gave official approval to conduct the study.
Development of Information Letters and Consent Forms

Information letters and consent forms (see Appendix A) went through several revisions. Subsequent revisions resulted from feedback by the investigator’s research adviser, as well as comments from both IRBs. Information letters and consent forms were finalized to include subjects selecting an eight-character identifier, which they used in place of their name on the questionnaires. Bandura (2006) recommends that self-efficacy judgments be recorded privately without personal identification to reduce social evaluative concerns. He suggests that a self-efficacy scale be identified by code number rather than by name. Consequently, an eight-character identifier was used in this study to link subjects’ initial questionnaire to their final questionnaire.

Developing and Piloting Questionnaires

The researcher developed both the Music Background Survey and Music Teaching Self-Efficacy Questionnaire (see Appendix B) based on Bandura’s (2006) guidelines for developing self-efficacy measures as well as from measures employed in the self-efficacy literature. In order to reduce response fatigue, only one survey was administered at a time. In an effort to address validity, reliability, comprehensibility, and efficiency, the surveys were piloted with the ECE pre-service teachers (N = 22) enrolled in the researcher’s music methods course during the spring 2009 semester. The validity and reliability of these measures are described later in this chapter.

The Evolving Research Design

The researcher served the role as both the researcher and the instructor of the students participating in the study. She did not conduct research that was beyond normal course expectations, as requested by the IRB. To guard against coercion or bias in the teacher-student relationship, another faculty member in the School of Music, who was not in a supervisory
position with the students, distributed and collected the consent forms and kept them in a secure filing cabinet in her office until after the final grades were submitted by the researcher. After the researcher submitted final grades, she obtained the signed consent forms and subsequently analyzed the data. The students were informed of these procedures prior to giving their consent. The researcher did not know who had chosen to participate or not until after grades had been submitted and the participants were no longer her students. As a result, no research activities, beyond what was normally expected in the class syllabus, occurred until after the term was completed.

The above impacted the design of the study. The researcher was limited to confidential questionnaire responses, some of which were completed by students who had not consented to participate in the study. However, the researcher used these as a regular part of her course as a pre-test and post-test, so every student completed the questionnaires, regardless of whether or not they consented to the study. The researcher was also restricted to conducting focus group interviews until after course grades were submitted.

**Theoretical Underpinnings**

With the emerging diversity in methodologies and research paradigms, it has become increasingly important for researchers to clarify the theoretical position from which their chosen methodology is based (Burnard, 2006; Genishi, Ryan, Ochsner, & Yarnall, 2001). An understanding of the researcher’s paradigmatic stance can assist the reader in understanding how to approach and interpret the data presentation itself (Greene, 2007; Greene & Caracelli, 2003). For these reasons, this section presents the theoretical underpinnings for the present research study in order to clarify its particular paradigmatic stance and also provides a rationale for using teacher research as an embedded paradigm for this study.
Paradigmatic Stance and Rationale

This study applies pragmatism as an orientation to this research because it is regarded as the best paradigm for justifying the use of multiple methods of inquiry (Datta, 1997; Howe, 2003; Teddlie & Tashakkori, 2003). Pragmatists link the choice of approach directly to the purpose of and the nature of the research questions posed (Creswell 2003). The pragmatic approach is based on the view that a combination of quantitative and narrative data, situated within a teacher research framework provides richness to the data that likely would not have emerged using a single method. Research is often multi-purpose and a “what works” tactic will allow the researcher to address questions that do not sit comfortably within a wholly quantitative or qualitative approach to design and methodology (Armitage & Keeble-Allen, 2007). Pragmatism both emphasizes the practical function of knowledge as an instrument for adapting to reality and prioritizes experience over a priori reasoning.

The pragmatic paradigm has what Tashakkori and Teddlie (1998) and Creswell (2003) see as intuitive appeal, permission to study areas that are of interest, embracing methods that are appropriate and using findings in a positive manner in harmony with the value system held by the researcher (Creswell 2003). For these reasons it can be argued that the pragmatic paradigm can be adopted for the purpose of social research endeavors as this is congruent with the combined quantitative and narrative approach taken within the predisposition of teacher research. Teacher Research as an Embedded Paradigm

Teacher research was chosen as an enabling method in the creation, application and review of teaching a music methods course to early childhood education (ECE) pre-service teachers. Teacher research specifies who conducts the research and indicates the unique context (i.e., research conducted simultaneously with teaching) and environment (i.e., the classroom) in
which research occurs. Teacher-researchers raise questions about what they think and observe about their teaching and their students’ learning. They collect student work in order to evaluate performance, but they also see student work as data to analyze in order to examine the teaching and learning that produced it (MacLean & Mohr, 1999). According to Dewey (1910/1997), education is best practiced as inquiry, and teacher research employs the “scientific approach” to inquiry. What distinguishes teacher research from teaching reflectively is the commitment to a disciplined method for gathering and analyzing data, and the fact that the research can be publicly shared (Borko, Liston, & Whitcomb 2007).

**Benefits of teachers as researchers.** At its core, teacher research shares with other forms of educational research an emphasis on developing and deepening the understanding of educational practice (Zeichner & Noffke, 2001). One of the many benefits of teachers researching their own practices is that the teacher has a sense of ownership and control of the research because what is being researched occurs in that teacher’s own classroom (Lytle & Cochran-Smith, 1992). Research done with the teacher’s students, in a setting with which the teacher is familiar, helps to confer relevance and validity to a disciplined study (Ferrance, 2000). The real value of engaging in teacher research at any level is that it may lead to rethinking and reconstructing what it means to be a teacher or teacher educator and, consequently, the way teachers relate to children and students (Stremmel, 2007). The primary impetus for using teacher research as an embedded paradigm for this study was the researcher’s desire to better understand and improve her own teaching and the context in which the teaching is delivered.

**Limitations of teachers as researchers.** Teacher research can often be messy and logically non-linear, with the outcomes of the research not always immediately obvious, but taking some time to unfold (Mitchell, 2002; Gregson, 2004). This potential limitation was countered in this
study because the teacher was present at every stage of data collection; the data collection schedule was also pre-determined by the teacher-researcher. The value of teacher research may be questioned because of the personal nature of the issues that are researched within one’s own classroom and because the findings may not be relevant in contexts other than the one in which the research takes place. The complexity of the findings may also not provide future directions other than for the participants. These drawbacks are acknowledged as limitations to the study as presented in Chapter 1.

*Music Curriculum Model*

As described in Chapter 2, an additional underpinning used to ground this study is the music curriculum model for pre-service primary teachers proposed by Jeanneret (1997). Based on her research with pre-service generalists, Jeanneret advocated a music methods course that promotes curriculum, competencies, and teaching strategies as a three-pronged model, whereby each component emphasizes the instructor as the model. This model was chosen to underpin the current study because it is the only curriculum model in the literature that addresses generalists’ confidence to teach music. Jeanneret’s (1997) model is presented in Figure 4.1.
Location and Participants

This study investigated the impact of a music methods course on ECE pre-service teachers’ confidence and competence to teach music. Since the study was embedded within an teacher research paradigm, the participants in the study were the researcher’s students in a music methods course at one university. The location and participants, including a detailed description of the ECE degree curriculum, are described in detail in the sections that follow.
**Location**

The study took place in a large public university in the southeastern United States with an enrollment of approximately 22,500 students. *Music for the Young Child* (MUED 4670) is a music methods course designed for ECE pre-service teachers. ECE majors take this course during their third year of a four-year curriculum geared toward a Bachelor of Science degree in Early Childhood. The overwhelming majority of these students are female.

**Participants**

The participants in the study consisted of the 41 students enrolled in two sections of MUED 4670 during the fall 2009 semester. The students attended the course for two hours twice a week (i.e., four hours per week) for 15 weeks. MUED 4670 is the only required music course in the degree program. A complete description of the ECE program and where MUED 4670 falls within their undergraduate coursework is described in detail in the next section.

**Major in Early Childhood Education**

The major in Early Childhood Education is offered by the Department of Human Sciences. The curriculum for the major in Early Childhood Education is designed to prepare teachers in the area of early childhood education and to meet the state requirements for licensure to teach pre-kindergarten, kindergarten, and first through third grades. Emphasis is placed on the development of the young child within the context of the family and on integrating developmentally appropriate practice within educational settings. Method courses, including *Music for the Young Child*, are completed in the junior year. The recommended course of study for an early childhood education degree is presented in Table 4.1.
Table 4.1

**Recommended Curriculum for the ECE Degree**

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<th>Year</th>
<th>Code</th>
<th>Required Hours</th>
<th>Subject Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman</td>
<td>ENGL 1010</td>
<td>3</td>
<td>Expository writing</td>
</tr>
<tr>
<td></td>
<td>ENGL 1020</td>
<td>3</td>
<td>Research and argumentative writing</td>
</tr>
<tr>
<td></td>
<td>MATH 1010</td>
<td>3</td>
<td>Mathematics for general studies</td>
</tr>
<tr>
<td></td>
<td>MATH 1410</td>
<td>3</td>
<td>Concepts and structure of elementary mathematics</td>
</tr>
<tr>
<td></td>
<td>FOED 1110</td>
<td>3</td>
<td>Education as a Profession</td>
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</tr>
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</table>

**TOTAL HOURS REQUIRED FOR DEGREE COMPLETION = 116**
MUED 4670: Music for the Young Child

This is the only music course required for ECE pre-service teachers throughout their degree program. MUED 4670 balances music fundamentals with music methods appropriate for children ages preschool through grade three. Through a variety of in-class activities and outside assignments, the students strive to (a) develop musical sensitivity; (b) increase musical skills and understanding; (c) establish a foundation for continued development of music skills (e.g., singing, playing instruments, listening, moving to music); (d) become aware of the musical characteristics of children at various developmental stages; (e) select music and plan lessons appropriate for young children; (f) increase skills needed for leading musical experiences with children; (g) teach music lessons; and (h) reflect on their teaching. Music for Young Children (Andress, 1998) is the required textbook for the course. The researcher/instructor uses Andress’ early childhood tripartite music learning environment (see Chapter 2) to guide instruction for ECE pre-service teachers.

Sources of Data

Principal sources of data for the study consisted of student responses to the Music Background Survey (MBS), the Music Teaching Self-Efficacy Questionnaire (MTSEQ), and the microteaching self-efficacy measures. Additional data was obtained from focus groups conducted with the students at the end of the course, as well as student remarks from reflective writings and open-ended comments on the questionnaires. These data sources are described in the sections that follow. As mentioned earlier, both the MBS and MTSEQ were piloted with a group of pre-service ECE students (N = 22). Further discussion of the development and validation of the questionnaires is offered below.
**Music Background Survey**

The Music Background Survey (MBS) was created by the researcher to gather both quantitative and narrative data on students’ current musical habits, as well as previous music experiences prior to enrollment in the music methods course. This measure assessed students in four categories: (a) *Music Profile* ascertained their current musical habits of listening to music and singing; (b) *Role of Music* addressed what role music currently played in the students’ lives; (c) *Music Activities as an Adolescent* prompted students about their music activities, both in and out of school time, from age 12 on; and (d) *Music Activities in Early Childhood and Elementary School* prompted students about their music experiences, both in and out of school, from birth to age 11.

The quantitative responses were presented on a 7-point Likert-type scale, and students were also given space to openly respond to questions that inquired about their earliest recollection of being involved in a musical activity, activities in which they participated, and any prior experiences that influenced their confidence to teach music. Of Bandura’s (1977, 1995) four sources that influence efficacy beliefs, two of the four are associated with past experiences (i.e., mastery and vicarious experiences). Therefore, students reflected on their music experiences during their school years, as well as how music was a part of their lives currently.

Participants offered responses to two open-ended sections on the MBS: (a) they described the earliest experiences they could recall of being involved in a musical activity; and (b) they listed their three most important prior music experiences that most influenced their current level of confidence to teach music. These open-ended responses provided narrative information into participants’ music background.
The Music Teaching Self-Efficacy Questionnaire (MTSEQ) was created by the researcher to measure students’ perceived self-efficacy for teaching music. Bandura’s (2006) recommendations for constructing self-efficacy scales were adhered to in the design of the questionnaire. The researcher designed the MTSEQ based on other scales in the self-efficacy literature (e.g., Hendricks, 2009; McPherson & McCormick, 2006). The MTSEQ was preceded by two practice ratings in which students rated their percentage of confidence that they could lift (a) 10 pounds and (b) 150 pounds. This practice rating helped familiarize respondents with the scale gauging strength of efficacy belief and revealed any misunderstanding about how to use it (Bandura, 2006). Students then recorded the strength of their efficacy beliefs for each microteaching on an 11-point scale, ranging in 10-unit intervals from 0% (no confidence) to 100% (complete confidence).

Bandura (2006) suggests that individuals tend to avoid extreme answers on survey responses and therefore recommends the use of 11-point scales for measuring self-efficacy. An 11-point scale is considered to better predict performance than a 5-point or 7-point scale because it provides a broader level of detail (Bandura, 2006; Pajares, Hartley, & Valiante, 2001). The MTSEQ therefore measured perceptions of self-efficacy through 11-point scales that were presented as a delineated percentage rank from 0% to 100%. Percentages were used here to align the measures with previous self-efficacy research in music (Hendricks, 2009; McPherson & McCormick, 2006) and to allow participants to imagine their personal range of task-based confidence according to an estimate ranging from 0% to 100%. In addition to the quantitative data, narrative data was also collected on the MTSEQ. Participants were prompted to add a
comment that would help the researcher understand their level of confidence to teach young children to (a) play instruments; (b) listen to music; and (c) sing.

The questions on the MTSEQ were organized into five sections: the first four measured perceived self-efficacy to teach four different music mini-lessons, and the last section measured overall confidence to teach music. The MTSEQ sections are described below, accompanied by a description of the goals and objectives for each of the four in-class microteachings.

Microteachings

Microteaching is an instrument for teacher training. It offers the students the opportunity to practice teaching activities under controlled circumstances in which the complexity of the real teaching situation is simplified in terms of the amount of teaching time and the amount of teaching activities to which particular attention is given. Microteaching offers control over practicing teaching activities because many factors can easily be manipulated to attain a greater degree of control in the training program. The feedback dimension of microteaching is expanded considerably because the student receives meaningful feedback immediately after his or her performance.

One of the requirements for MUED 4670 was for students to teach four music micro-lessons throughout the 15-week semester. The process for each microteaching included: (a) developing an understanding of the music fundamentals incorporated in the microteaching; (b) observing the instructor model the microteaching; (c) cooperating with a group to design a lesson plan for each microteaching; and (d) independently planning and executing the microteaching to the class. After students taught their micro-lessons to their college peers, they taught the same lessons to a group of young children in a practicum setting.
Four microteachings were designed by the researcher for use in the music methods course as guided group lessons (Andress, 1998). Each microteaching involved learning and refining music competencies with the guidance of a music specialist (i.e., course instructor), who facilitated the development of these competencies. It was the philosophy of the researcher that generalists could structure permeable learning and special interest groups (Andress) without as much guidance from the course instructor. Therefore, the microteachings were guided group lessons in which pre-service teachers practiced and refined their skills to teach music. What follows is a brief description of each of the four microteaching assignments throughout the semester. For each lesson, the purpose and objectives are stated, and when feasible, an example is given. These are presented in the order they were assigned throughout the semester.

*Language arts embellishment.* The purpose of this microteaching was to integrate instruments (i.e., non-pitched classroom instruments, found sounds, body percussion) with language arts. The objectives for pre-service teachers were to (a) select a short poem or nursery rhyme appropriate for four- to eight-year-olds; (b) choose special words and embellish with instruments; (c) create a visual aid with a key; and (d) lead peers in “reading” (performing) the poem.

To prepare the students for the language arts embellishment microteaching, the instructor provided many opportunities and activities for students to play and experiment with non-pitched percussion instruments. The students also explored making sounds with their bodies (i.e., body percussion) and voices, as well as with found sounds, in which sounds were created from everyday objects. As a class, the students embellished various nursery rhymes and poems with non-pitched instruments, vocal and found sounds, and body percussion. The instructor modeled
the language arts embellishment in Figure 4.2 to provide a clear example for this microteaching assignment.

<table>
<thead>
<tr>
<th>Example: Tony Baloney (Words: Dennis Lee from <em>Alligator Pie</em>)</th>
<th>KEY:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tony Baloney is fibbing again.</td>
<td>= vibraslap</td>
</tr>
<tr>
<td>Look at him wiggle and try to pretend!</td>
<td>= flexitone</td>
</tr>
<tr>
<td>Tony Baloney is telling a lie</td>
<td>= hanging cymbal</td>
</tr>
<tr>
<td>Phony old Tony Baloney, goodbye</td>
<td>= cowbell</td>
</tr>
<tr>
<td></td>
<td>= big hand drum or bongo</td>
</tr>
</tbody>
</table>

*Figure 4.2. Example of visual for language arts embellishment.*

*Sound story big book.* The purpose of this microteaching was to integrate vocal exploration with language arts. The objectives for pre-service teachers were to (a) select a Mother Goose rhyme or children’s poem appropriate for three- to six-year-olds; (b) embellish with vocal exploration; (c) compile in a hand-made Big Book; and (d) lead peers in “reading” their book and exploring students’ voices.

The preparation for the sound story big book microteaching began with the exploration of the voice as a “sound maker” at the beginning of the semester. The instructor also provided many opportunities and activities for students to explore their voices. The instructor modeled the sound story big book in Figure 4.3 to provide an example for this microteaching assignment. Each box represents one “page” of the big book. The vocal exploration occurs after each phrase of text.
Figure 4.3. Example of sound story big book visual using the nursery rhyme *Jack and Jill*. Each box represents one page of the big book.

Jack and Jill went up the hill

```
GULP
```

To fetch a pail of water.

Jack fell down and broke his crown

```
GULP
```

“oh”

And Jill came tumbling after.
Steady beat and rhythm icon cards. The purpose of this microteaching was to move to the steady beat of a piece of music and prepare iconic representations of rhythmic durations for students ages four to six years old. The objectives for pre-service teachers were to (a) select a quality piece of music; (b) create simple movements to accompany the song; (c) lead students in the steady beat activity; (d) make a set of iconic flash cards (8 in a set); (e) use a combination of quarter and eighth notes; and (f) lead peers in reading the cards.

For the steady beat component, music was considered “quality” if it was any of these styles: classical, ethnic, folk, bluegrass, children’s songs, or popular/contemporary. The recording could not be a medley of tunes; it was a one- to two-minute segment of one piece of music with a fast tempo. Depending on the tempo and phrasing of the piece, students were encouraged to change steady beat movements every eight or sixteen beats.

For the rhythm icon component, students chose a pictorial icon that was one syllable with a two-syllable descriptor/modifier. They used the one-syllable word for the quarter note value and the modifying, two-syllable word for the eighth notes. For the two-syllable words, the icons were vertically or diagonally cut in half. Only one icon was used for the entire set of cards. Each card contained a combination of quarter and eighth note values.

To prepare the students for the steady beat and rhythm icon card microteaching, the instructor laid a strong foundation of listening for and moving to the steady beat in music. The instructor then provided many opportunities and activities for students to identify and read simple rhythms with quarter and eighth notes. The students read both iconic (pictorial) and symbolic rhythms (i.e., traditional notation). The students also improvised simple four-beat rhythms using quarter and eighth notes. The instructor modeled the steady beat/rhythm icon card
microteaching to provide a clear example for this microteaching assignment. An example of the instructor’s rhythm icon card is given in Figure 4.4.

![Rhythm Icon Card](image)

*Figure 4.4. Iconic rhythm for quarter, quarter, eighth-eighth, quarter (“ghost, ghost, scary ghost”).*

*Teach a rote song.* The rote-song procedure is situated within the whole-part-whole learning process. A rote song is taught without reliance on musical notation, which is of utmost importance with pre-service early childhood teachers with little to no experience in formal music training. The teacher sings the whole song and then breaks down the parts for the students to sing, culminating with the students singing the whole song. This procedure is unique because it allows the students to listen to the whole song many times. It gives students an opportunity to listen critically to the song and allows them to become independent musicians.

The purpose of this microteaching was to teach a simple rote song. The objectives for pre-service teachers were to (a) select a simple song that was age-appropriate and that they felt comfortable singing; (b) sing the song from memory; and (c) teach the song to their peers. Considerations for a song to be age appropriate included the melodic range, difficulty of the melody and rhythms, and the simplicity of the text.

The preparation for the rote song microteaching occurred throughout the semester, as singing was a major component of each class session. Students participated in group singing on a daily basis, thereby increasing their repertoire of appropriate children’s songs and improving
their competence and confidence to sing in their head voice. The instructor taught every song by rote throughout the semester and provided many examples of rote teaching using the echo, chime-in and caught methods of teaching a rote song.

Although the MBS and MTSEQ measured ECE pre-service teachers’ music background and confidence and competence to teach music, these two measures were not adequate in and of themselves to fully address all the research questions. Data was also obtained from the students’ responses to the music self-efficacy measures administered in conjunction with the microteachings, as well as from narrative responses from participants’ reflective writings and focus group interviews to gain deeper insight into the phenomena being studied.

**Microteaching Self-Efficacy Measures**

In an effort to gather additional data for students’ music self-efficacy, the instructor administered a small set of efficacy statements, which the students completed with pencil and paper right before each microteaching. Self-efficacy measurement is maximized when evaluation occurs closest to the event at which the skill is demonstrated (Bandura, 1997, 2006; Pajares, 1996). Each set of questions were repeated from the MTSEQ section pertaining to that particular microteaching. In other words, immediately before each in-class microteaching, the students recorded the strength of their efficacy beliefs on an 11-point scale, ranging in 10-unit intervals from 0% (no confidence) to 100% (complete confidence) for each of the microteachings: language arts embellishments, sound story big book, steady beat/rhythm icon cards, and rote song teaching.

**Student Focus Group Interviews**

The researcher interviewed students at the end of the course in a focus group setting, after which all other sources of data had been collected. The group interviews provided narrative data
primarily regarding the sources of self-efficacy. The instructor led two different focus groups and scheduled them during the regular final exam times for the two sections of the music methods course. Because the instructor administered a take-home exam due on the last day of class, the final exam time of two hours was devoted to each focus group session. The focus group protocol consisted of open-ended questions in which students responded about their confidence to teach music (see Appendix C).

Rationale for Focus Groups

The researcher conducted focus groups as a way to collect shared understandings from participants as well as to get views from specific people. The researcher also served as the moderator because her extensive knowledge of self-efficacy theory allowed for unscripted, probing questions which led to richer and more in-depth conversation. At the beginning of each group interview, the researcher displayed a focus group protocol consisting of four open-ended items for discussion. The open-ended questions allowed students to voice their experiences unconstrained by any perspectives of the researcher or past research findings (Creswell, 2008). Conducting two focus groups versus numerous one-on-one interviews was more efficient, and because the students had participated in the music class for 15 weeks, they felt comfortable with each other to speak and respond freely in a focus group setting.

Focus groups have increasingly been implemented in the context of teacher research, where participants share their stories and suggest strategies for change (Kieffer et al., 2005). Focus groups can be effectively used in already existing groups (Elrod, 1981); the notion that focus groups must consist of strangers is a myth (Morgan & Krueger, 1993). The advantages of discussions involving pre-existing social groups both on practical and epistemological levels have increasingly been recognized (Bloor, Frankland, Thomas, & Robson, 2001). By utilizing
friendship groups, the researcher was able to tap into the interaction which approximates to naturally occurring data, such as may be collected through participant observation (Kitzinger, 1994).

The hallmark of focus groups is their explicit use of group interaction to produce data and insights that would be less accessible without the interaction found in a group (Morgan, 1997). Focus groups work because attitudes and perceptions are developed in part by interaction with others (Krueger, 1988). The use of focus groups for this study allowed good interpretive validity and was useful for exploring ideas. The researcher also obtained in-depth information about exactly how participants thought and felt about certain issues that emerged from discussing the protocol items. The researcher was able to probe for clearer or deeper understanding and tap into the content discussed.

A disadvantage to using focus groups can result from the researcher having less interviewer control in a group setting. This disadvantage was minimized for this study because the moderator had established herself as an authority figure throughout the 15-week semester and could easily and respectfully moderate the discussion with her students. The rapport the researcher had built with her students throughout the semester also proved beneficial in minimizing group domination by excessive talkers and bringing the quieter members into the discussion. An additional disadvantage to the focus group method of inquiry for this study was having an authority figure (i.e., the course instructor) moderate the group interviews. However, this disadvantage was minimized with both the rapport that had been established with the students throughout the prior 15 weeks and the timing of the focus group interviews (i.e., at the end of the semester, after course grades had been assigned).
**Focus group protocol.** The focus group protocol was the list of questions that the researcher explored during the focus group. The researcher prepared the focus group protocol to target trends in music teaching self-efficacy and explore the sources of students’ perceived level of music teaching self-efficacy. The interview protocol for this study provided students with an opportunity to further reflect on their learning experiences in *Music for the Young Child* (see Appendix C).

**Recording data.** For this study the researcher used a tape recorder for the focus group sessions. The researcher audio taped interviews for an unpublished case study she conducted as a graduate student and found it useful and necessary for the accurate transcription of the interview data. Recordings have the advantage of capturing data more faithfully than hurriedly written notes might and can make it easier for the researcher to focus on the interview (Hoepfl, 1997). Even though the participants consented to the audio taped interview prior to the study, the researcher reminded the students of the tape recorder and of maintaining confidentiality at the start of each focus group session.

**Data Collection Procedures**

This dissertation reports the research conducted with a group of pre-service, early childhood teacher education students. The researcher taught *Music for the Young Child* during the previous two semesters, which both guided the selection of suitable procedures to be undertaken in this study and signaled difficulties that needed to be overcome prior to implementation of the procedures in the study. Before any data was collected, the researcher obtained voluntary informed consent. Subsequently, two primary data collection techniques were used in the study: questionnaires and focus groups. Because teacher research was an embedded design for the study, additional data was collected from participants’ reflective writings that were
required as part of the course. The data collection procedures are described in detail below, including the time table for collecting data.

Voluntary Informed Consent

During the first class session of MUED 4670, a letter describing the purpose of the study, providing a guarantee of confidentiality and information concerning complaints, was distributed and read to the students in accordance with ethical requirements (see Appendix A). Students marked either “accept” or “decline” for each of the research activities on the consent form: (a) questionnaires, and (b) audio taped interviews. To minimize bias and coercion in the teacher-student relationship, another faculty member in the School of Music collected the consent forms and stored them in a lockable filing cabinet throughout the fall semester.

Questionnaires

All students completed the questionnaires as a regular part of the course, regardless of whether or not the students consented to the study. The data was collected in two ways: web survey and paper format. The data from the Music Background Survey (MBS) and pre- and post-Music Teaching Self-Efficacy Questionnaires (MTSEQ) were collected using a web interface. The questionnaire data from the four self-efficacy measures were collected on paper right before each microteaching. All questionnaires were keyed in Times New Roman, and the font size ranged from a 10- to 16-point font. Each data collection procedure is described in the sections that follow.

Web Questionnaires

A web interface was used to collect the questionnaire data from the Music Background Survey (MBS) and Music Teaching Self-Efficacy Questionnaire (MTSEQ) at the beginning and end of the semester. Using the Internet, students were prompted to respond to each question
before moving to the next, and responses could be automatically verified to reduce errors. Additionally, electronic data collection ensured that manual data entry and processing errors were minimized compared with paper forms.

Several options were considered for administering the web survey. Commercially available online software, dedicated especially to developing and publishing surveys, was chosen above creating the interface from scratch, which would require learning the relevant programming skills. Survey Monkey was chosen, as it offered the ability to create many types of questions (e.g., multiple choice, open-ended responses, rating scales, drop-down menus) and delivered the raw data to the researcher in a useable format that was easily transferred to statistical analysis software.

Music background survey. Students completed the Music Background Survey (MBS) during the second class session. The researcher had previously explained the study and sought consent during the first class. The instructor was also able to effectively communicate to the students that they would meet in a computer lab for the second class session. Students completed the MBS within 25 minutes in the computer lab where every student had access to her own computer. The instructor was also available to address any survey items for which students needed clarification.

Music teaching self-efficacy questionnaire. The Music Teaching Self-Efficacy Questionnaire (MTSEQ) was administered twice in its entirety throughout the 15-week course. The students completed the initial MTSEQ online as part of their assignment during the first week of class. Because the researcher did not have access to the consent forms and 8-character identifiers, a graduate student checked for completed questionnaires.
The students completed the final MTSEQ online during week 15 as part of their final exam for the course. The final MTSEQ was identical to the initial MTSEQ in content. Because the researcher still did not have access to the consent forms and 8-character identifiers, a graduate student checked for completed questionnaires. It was only after the researcher submitted final grades for the students enrolled in MUED 4670 that she obtained the consent forms and began data analysis.

**Paper Questionnaires**

The instructor administered the microteaching self-efficacy measures right before each of the four microteachings. This data was collected on paper because there was not ample time to access a computer lab on the day of teaching. It was imperative for the students to teach in the music education classroom so they had access to instruments and materials and ample space in which to teach their lessons. Students took no longer than three minutes to complete each microteaching self-efficacy measure. The instructor was able to check that all questions had been answered as the students turned in questionnaires.

**Focus Groups**

Student participants were asked to participate in audio-taped focus group interviews after they completed MUED 4670. Before the focus groups were conducted, the researcher verified the students who had given consent for an interview. Because the researcher had already graded final exams and submitted final course grades, she could access and view the consent forms to form the focus groups. Only students who agreed to an audio-taped interview on their consent form participated in the focus group (n = 25). The focus group participants consisted of 13 from one class and 12 from the other class. These numbers fit within the acceptable number of participants for focus groups (Johnson & Turner, 2003; Morgan, 1997; Pugsley, 1996).
The instructor reminded the students that their responses would remain confidential. The researcher used an interview protocol as a guide to focus the group discussion (see Appendix C). The focus groups were tape recorded with the students’ consent and later transcribed. No notes were taken during the focus groups in order to enable the development of a conversational atmosphere.

The timing of the questionnaire and focus group data collection is summarized in Table 4.2. Initial questionnaires were administered in early September of 2009. The administration of the initial questionnaires occurred prior to any music methods instruction and music teaching experiences. The four self-efficacy measures occurred in conjunction with the four required peer teachings, spread throughout the semester. The final questionnaire was administered at the end of the course, after students had completed all required assignments and teaching experiences. Finally, the focus groups were conducted at the end of the semester during the week of final exams.

Table 4.2

Schedule of Data Collection

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<th>September</th>
<th>October</th>
<th>November</th>
<th>December</th>
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<td>MBS</td>
<td>Self-efficacy measures</td>
<td>Self-efficacy measures</td>
<td>MTSEQ</td>
</tr>
<tr>
<td>Self-efficacy measures</td>
<td>MTSEQ</td>
<td>Reflections</td>
<td>Reflections</td>
<td>Reflections</td>
</tr>
<tr>
<td>Reflections</td>
<td>Reflections</td>
<td>Reflections</td>
<td>Reflections</td>
<td>Focus groups</td>
</tr>
</tbody>
</table>

*Note:* MBS: Music Background Survey; MTSEQ: Music Teaching Self-Efficacy Questionnaire.
Development and Validation of Data Collection Techniques

A distinctive feature of self-efficacy research is that each domain of functioning has its own particular issues. Therefore, each study should reflect an element of customized measurement techniques (Bandura, 2006). However, self-efficacy research must also adhere to certain theoretical principles and previously-tested research procedures. This section describes the development of the various data collection methods that were adapted and refined for use in this study, followed by a discussion of the validation of data collection techniques.

*Questionnaire Conceptualization and Early Feedback*

An objective of this research was to provide a customized methodology that fits within the context of a music methods course for early childhood education pre-service teachers. In order to maintain construct validity, two features common to general self-efficacy research also require adherence: (a) measurement directly before a performance, and (b) task-specific questions (Bandura, 2006; Bong, 2006; Pajares, 1996b; Zimmerman, 1995). This section describes the procedures used in the development and validation of the quantitative data collection techniques designed for this particular study. The MTSEQ was designed to address task-specific issues regarding a music methods course for ECE pre-service teachers. The questionnaire included specific abilities required to perform each music microteaching.

*Piloting the MTSEQ*

The Music Teaching Self-Efficacy Questionnaire (MTSEQ) was piloted with the ECE pre-service teachers \( N = 22 \) enrolled in the researcher’s music methods course during the spring 2009 semester. Students were invited to practice filling out the surveys and to provide feedback about their clarity and comprehensibility. Students were told that participation in this
activity was completely voluntary, and that their opinions would be used to help design questionnaires for a research study the following semester.

The pilot questionnaire included 26 items and was divided into two sections: music skills (13 items) and teaching music (13 items). For all items students recorded the strength of their efficacy beliefs on an 11-point scale, ranging in 10-unit intervals from 0% (no confidence) to 100% (complete confidence). Each item also contained a box for students to tick if the question was unclear. The pilot questionnaire included two practice ratings to familiarize respondents with the rating scale for the questionnaire.

**Findings and Modifications**

None of the 22 students in the pilot checked that any question was unclear. The test for internal consistency reliability yielded an alpha coefficient of $\alpha = .95$, which indicates excellent internal consistency of the items in the scale (George & Mallery, 2003). The final draft of the MTSEQ was organized according to the goals and requirements for four in-class microteachings, plus a final section that assessed overall confidence to teach music. Questions in each section measured students’ level of confidence or competence according to how confident the students were in their own music ability (i.e., their music competence) and how confident the students were in their ability to teach music to young children.

**Validation**

**Content Validity**

Content validity was addressed by piloting the questionnaires; the content areas and the level of difficulty of the questions were addressed by piloting the questions. The questionnaire items were also worded in terms of *can do* rather than *will do*, which strengthens content validity.
for self-efficacy measures (Bandura, 2006). According to Bandura, *can* is a judgment of capability; *will* is a statement of intention.

**Construct Validity**

Self-efficacy scales should measure what they purport to measure, that is perceived capability to produce given attainments (Bandura, 2006). The construct of self-efficacy is embedded in a theory that explains a network of relationships among various factors. Construct validation is a process of hypothesis testing. Verifications of predicted effects increase evidence for the construct’s validity. Because perceived self-efficacy can have diverse effects on motivation, thought, affect and action, there are many verifiable consequences that can be tested. There is no single validity coefficient (Bandura, 2006). Construct validation is an ongoing process in which both the validity of the postulated causal structure in the conceptual scheme and the self-efficacy measures are being assessed.

**Data Analysis Procedures**

In this study an exploratory quantitative design was embedded within a teacher research paradigm. Narrative data was used to elaborate and reinforce the quantitative findings. Because the researcher was also the participants’ instructor, analysis for any source of data did not occur until final grades had been submitted by the researcher and the participants were no longer her students. Subsequently, analysis procedures took on quantitative and narrative forms, with the narrative data explaining or elaborating on the quantitative data. Using narrative data to complement the quantitative data provided an opportunity to generate more meaning, thereby enhancing the quality of data interpretation. A description of the specific stages of data analysis for this study is presented in the next section.
Data Collection Stage

Data was collected over a 16-week period; which encompasses the 15-week music methods course plus the week of final exams to conduct focus group interviews. As stated earlier, analysis for any source of data did not occur until final grades had been submitted by the researcher and the participants were no longer her students. The Music Background Survey (MBS) and initial Music Teaching Self-Efficacy Questionnaire (MTSEQ) were collected during the first week of MUED 4670, followed by microteaching self-efficacy measures, the final MTSEQ, and focus group interviews. Students’ reflective writings occurred throughout the semester as a regular part of the course.

Analysis Stage

The researcher utilized independent quantitative analysis techniques in order to provide contextual observations that could be illustrated and elucidated with data from open-ended responses, reflective writings, and focus groups. The questionnaires solicited primarily quantitative responses, while the focus group interviews, open-ended comments, and reflections elicited purely narrative responses. The narrative data sources were critical in providing a complete representation of students’ music teaching self-efficacy in the present context. Descriptions of analytic procedures used in this study are provided below.

Independent Quantitative Analyses

Quantitative data was analyzed in order to validate survey instruments and observe trends across the semester in the students’ perceived levels of self-efficacy. Both parametric and non-parametric statistical tests were used to measure changes in self-efficacy perception. All statistical analyses were computed using SPSS 18.0, a statistical analysis software package. As stated above, statistical analyses were complemented with narrative data.
Rationale for parametric and non-parametric analysis. Robust statistical tests (i.e., $t$ tests and ANOVA $F$ tests) operate well across a wide variety of distributions. A test can be robust for validity, meaning that it provides $p$ values close to the true ones in the presence of slight departures from its assumptions. It may also be robust for efficiency, meaning that it maintains its statistical power in the presence of those departures. The $F$ and $t$ tests are fairly robust for validity against non-normality, but they may not be the most powerful tests available for a given non-normal distribution.

The presence of outliers and an increase in skewness became obvious on subsequent administrations of the self-efficacy measure (i.e., mid- and post-measures). This in turn prompted the use of non-parametric methods for the handling of data which was not normally distributed. Outliers reduce the probability of Type I errors of the parametric test and, at the same time, substantially increase the probability of Type II errors, so that power declines. Although outliers do not modify the probability of Type I errors of the non-parametric tests, they nevertheless increase the probability of Type II errors and reduce power. The effect in the non-parametric tests depends largely on the probability of occurrence and not the extremity. Because deviant scores influence parametric tests to a relatively greater extent, the non-parametric method acquires an advantage for outlier-prone densities despite its loss of power. The statistical corresponding parametric and non-parametric tests that were performed for analyzing the quantitative data are presented in Table 4.3.

Table 4.3

<table>
<thead>
<tr>
<th>Corresponding Parametric and Non-Parametric Tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parametric</td>
</tr>
<tr>
<td>Paired samples $t$ test</td>
</tr>
<tr>
<td>Analysis of variance (ANOVA)</td>
</tr>
</tbody>
</table>
Independent Narrative Analyses

The narrative analysis used in this study served to elaborate and to expand understanding regarding students’ music teaching self-efficacy beliefs. Narrative data gathered from focus group sessions, open-ended comments on the MBS and MTSEQ, and students’ reflective writing provided support and enriched the quantitative findings. The researcher pre-determined categories prior to data collection, and narrative comments were transcribed and categorized in an Excel spreadsheet. Categories included the four microteachings and the four sources self-efficacy. The researcher also recorded all comments regarding confidence and competence to teach music. The narrative findings were used to provide richer descriptions of students’ perceived music teaching self-efficacy.

Chapter Summary

This chapter detailed the use of an exploratory quantitative design to determine the impact of a music methods course on students’ perceived music teaching self-efficacy. Narrative data was collected and analyzed to reinforce and explain the quantitative findings. The use of an embedded teacher research paradigm was argued as an appropriate method through which to develop, implement, and evaluate teaching approaches and overall course design. Analytic procedures were balanced with pragmatic approaches in order to observe the sources of music teaching self-efficacy from several viewpoints. Quantitative and narrative data were collected through questionnaires, focus groups, and open-ended comments using forms and protocols created specifically for this study. Students’ reflective writings were a requirement of the course and provided additional narrative data for the study.

In order to ensure the validity of this study both in the realm of self-efficacy research as well as in the field of music teacher education, the researcher designed the self-efficacy
questionnaires based on both the guidelines set forth by Bandura (2006) and recent self-efficacy research in the fields of education and psychology. The procedure for instrument creation therefore included (a) investigating past self-efficacy research both within and beyond the field of music education, and (b) piloting the questionnaires for clarity and comprehensiveness.

Statistical data was analyzed in order to determine trends in, and influences upon, music teaching self-efficacy beliefs. Narrative data clarified and enhanced the quantitative findings and provided additional insights into the influences upon self-efficacy perception on a more personal and localized basis. A presentation and analysis of data is offered in the next chapter.
CHAPTER 5
PRESENTATION AND ANALYSIS OF DATA

The purpose of this study was to (a) investigate the impact of a music methods course on pre-service early childhood teachers’ confidence and competence to teach music, and (b) determine if there was a significant change in the perceived self-efficacy of the early childhood pre-service teachers to teach music following the completion of four microteachings in an early childhood music methods course. This chapter presents the results of the data analysis for the two stated research inquiries and includes the presentation of narrative data to support the quantitative findings.

Descriptive Statistics of the Sample

A total of 41 female early childhood pre-service teachers participated in the study, out of the pool of 49 students [47 female, 2 male] who enrolled in Music for the Young Child. Of the 49 students who enrolled in the course, 46 consented to participate. However, of the 46 who consented, three students dropped out of the class for personal reasons, and two students were majoring in programs of study other than early childhood education: one was an instrumental music education major, and the other was majoring in child development and family studies, a non-teaching degree. Therefore, the final sample included 41 early childhood pre-service teachers enrolled in a music methods course. There was 100% response rate for all participants throughout the 15-week semester. Therefore, the number of participants for analysis was \( N = 41 \).

Music Background Survey

The Music Background Survey (MBS) served the function of obtaining a broad snapshot of various aspects of the musical beliefs and behaviors in the participants’ lives and therefore an
overall profile of the participants’ musical development leading up to their college years. The MBS began with questions about music in respondents’ lives currently, and then posed questions regarding their values and beliefs about music throughout their adolescent and elementary years, respectively. In other words, the survey ascertained information about participants’ musical background chronologically from their most recent to their least recent experiences in music.

The MBS was administered during the first week of class. The researcher used an online survey software and questionnaire tool to design and collect responses for the survey. The students completed the MBS during regular class time in an on-campus computer lab, whereby each student had access to his or her own computer station to independently answer the questions. Due to the controlled nature of the environment, the response rate for the MBS was 41 out of 41 students (100%). The survey began with questions that ascertained the frequency of participants’ current musical habits of listening to music and singing.

**Current Music Listening**

The initial question asked participants how many days of the week they actively listened to music, excluding background music out of their control. A majority of the participants (95%) claimed they actively listened to music seven days a week. Participants reported listening to music in all of the environments listed on the survey, with each listening environment receiving different patterns of responses. The upper end of the scale was the most popular area for the item “while traveling,” as 95% responded they listened to music while traveling seven days per week. The results are shown in Figure 5.1.
Figure 5.1. Boxplot of reported frequencies of where participants listen to music, 1 (never) to 7 (all the time). Dark horizontal lines indicate median, boxes indicate inter-quartile range, vertical lines indicate range, and circles indicate outliers.

Current Singing

Participants reported how frequently they sang. The mean rating score was 4.5 with a standard deviation of 1.61. Participants also reported singing in all of the environments listed on the questionnaire, with each listening environment receiving different patterns of responses. The results are shown in Figures 5.2 and 5.3, respectively.

Figure 5.2: Distributions of how frequently students sing, 1 (never) to 7 (all the time).
Music Activities as an Adolescent

Questions about music activities were asked to gain descriptive information about the nature of music activities that the participants engaged in throughout their adolescence, which encompassed their middle school and high school years. Participants responded to questions in this section if they selected “Yes” to the following:

Look back on your adolescence (age 12 to now) and think about your music activities. Consider all of the activities you did, whether you were in a rock band, the school orchestra, a church choir, or if you learned an instrument just on your own. This could include activities in school or outside of school time.

You may have been involved in different musical activities at different times throughout your adolescence. If this is the case, think about the 12 months when you were most musically active and answer the following questions about that year.

Did you do any music activities as an adolescent besides music class at school? (They could have been in-school or out-of-school activities, like playing guitar, musical theater, orchestra or band, a rock group, church choir, etc.)
Thirty of 41 participants selected ‘Yes’ and continued to answer questions in this section. All statistics in this section are based on the group of respondents who answered ‘Yes’ to participating in music activities during their adolescent years ($n = 30$).

Participants indicated whether they participated in a range of in-school and out-of-school music activities. Responses from this question indicate the activities most participants engaged in, as well as diversity of activities for each participant. This data will then be used for comparisons between participants who engaged in, for example, few activities and many activities.

Table 5.1 shows the number of students who participated in each activity throughout middle and high school. School and church choir were the most represented activities.

A majority of the students (77%) were involved in more than one music activity during their adolescence. The activities are categorical, so these data do not reflect the level of workload or time invested in each activity. The number of activities however, does represent the diversity of participants’ musical involvement during adolescence.

Table 5.1

<table>
<thead>
<tr>
<th>Activity</th>
<th>$n$</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>School band (concert band) or orchestra</td>
<td>9</td>
<td>30%</td>
</tr>
<tr>
<td>School choir</td>
<td>20</td>
<td>67%</td>
</tr>
<tr>
<td>Stage or jazz band at school</td>
<td>2</td>
<td>7%</td>
</tr>
<tr>
<td>Stage or jazz band outside of school</td>
<td>1</td>
<td>3%</td>
</tr>
<tr>
<td>Community band or orchestra</td>
<td>1</td>
<td>3%</td>
</tr>
<tr>
<td>Church choir</td>
<td>17</td>
<td>57%</td>
</tr>
<tr>
<td>Private lessons on primary instrument (including voice)</td>
<td>9</td>
<td>30%</td>
</tr>
<tr>
<td>Musicals</td>
<td>7</td>
<td>23%</td>
</tr>
<tr>
<td>Playing for fun on my own</td>
<td>8</td>
<td>27%</td>
</tr>
<tr>
<td>Playing music with friends</td>
<td>5</td>
<td>17%</td>
</tr>
</tbody>
</table>

*Note. $n = 30$ students who participated in music activities during their adolescent years.
Music Compared to Other Activities and School Subjects

This section ascertained the importance of music compared to other activities in which the participants were involved throughout adolescence. The participants were given clear directions, followed by three examples before responding:

List all of your activities (up to 7) in order of importance, with 1 as the most important and 7 as the least important. Only include structured activities (i.e. things you do with other people specifically for the sake of the activity), not unstructured activities like hanging out with friends, or passive leisure activities.

Examples:


B) 1. Playing guitar in a band with people I met at school, 2. Student council, 3. Church choir

C) 1. School newspaper, 2. School band

All forty-one participants gave an answer as their most important activity (1), and then responses increasingly dwindled to their least important activity (7). The number of total activities reported was 169. All activities were coded by the researcher into one of the following categories: school, work, church, music, sports, or activities/clubs. The music category includes all music activities, including school and church. The frequencies of activities are listed in Table 5.2.

Table 5.2

<table>
<thead>
<tr>
<th>Activity</th>
<th>Responses</th>
<th>% of total responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activities/clubs</td>
<td>48</td>
<td>28%</td>
</tr>
<tr>
<td>Church</td>
<td>32</td>
<td>19%</td>
</tr>
<tr>
<td>Sports</td>
<td>30</td>
<td>18%</td>
</tr>
<tr>
<td>Music</td>
<td>27</td>
<td>16%</td>
</tr>
<tr>
<td>Work</td>
<td>26</td>
<td>15%</td>
</tr>
<tr>
<td>School</td>
<td>6</td>
<td>4%</td>
</tr>
</tbody>
</table>
The above data was further organized into three groups: (a) high priority included activities listed as one and two; (b) middle priority included activities three through five; and (c) low priority included activities six and seven. Even though music activities had been listed frequently overall, there was not a high priority placed on music activities. The response frequencies according to priority are reported in Table 5.3.

Table 5.3

<table>
<thead>
<tr>
<th>Activity</th>
<th>High Priority n=75</th>
<th>Middle Priority n=71</th>
<th>Low Priority n=23</th>
</tr>
</thead>
<tbody>
<tr>
<td>School</td>
<td>5%</td>
<td>3%</td>
<td>0%</td>
</tr>
<tr>
<td>Work</td>
<td>17%</td>
<td>10%</td>
<td>26%</td>
</tr>
<tr>
<td>Church</td>
<td>27%</td>
<td>14%</td>
<td>9%</td>
</tr>
<tr>
<td>Music</td>
<td>9%</td>
<td>20%</td>
<td>26%</td>
</tr>
<tr>
<td>Sports</td>
<td>27%</td>
<td>11%</td>
<td>9%</td>
</tr>
<tr>
<td>Activities/Clubs</td>
<td>15%</td>
<td>42%</td>
<td>30%</td>
</tr>
</tbody>
</table>

*Note. Percentages are based on the total number of activities reported in priority group.*

Music Activities in Early Childhood and Elementary School

This section of the survey tapped into participants’ early music experiences. Participants’ first responded to an open-ended question prompting them to describe the earliest experience they could recall of being involved in a musical activity. A majority of respondents (63%) recalled a musical activity or experience they had as an early elementary student (age five to seven). Eleven respondents (27%) recalled their earliest musical activity or experience at age three or four. Surprisingly, four respondents (10%) recalled their earliest musical activity or experience when they were older, with ages reported from third grade (age 8-9) all the way up to fifth grade (age 10-11).

A majority (71%) of earliest music experiences reported were either church (40%) or school (31%) activities. Four participants reported private lessons on their musical instruments as their earliest activity, while two participants reported an extra-curricular organization (e.g., Girl
Scouts) as their earliest musical experiences. Six participants described an activity with a family member as their earliest musical experience.

**Beliefs and Values for Music**

The beliefs and values for music were measured according to how participants valued music in three dimensions: (a) importance; (b) usefulness; and (c) enjoyableness. Participants reported these dimensions in three contexts: (a) current beliefs; (b) high school beliefs; and (c) elementary beliefs. The means for each dimension are plotted in Figure 5.4, and the results for beliefs and values for music are described according to context in the sections that follow.

![Figure 5.4. Means of music beliefs and values plotted over three contexts, 1 (not) to 7 (extremely).](image)

Currently. Thirty-seven respondents, or 90% of the sample, reported that music was currently important in their lives, including 49% of the total sample who reported that music was “very important” to them now. Participants also responded favorably for the dimensions of usefulness and enjoyableness, with 76% of the total sample reporting that music was useful and 85% of the total sample reporting that music was enjoyable.
High school. Not all participants who engaged in music activities during their adolescence continued their participation into their high school years. Only 18 of the 30 participants continued their musical involvement into high school, which indicates that the other 12 participants ceased their involvement in musical activities after middle school. Of the total sample of 41 participants for the study, only 44% were involved in music activities in high school. Therefore, for beliefs about music, the high school results reflect only those students who participated in music activities during their high school years ($n = 18$).

A majority of participants (72%) who participated in music activities during their high school years recounted their experiences to be enjoyable, including 44% who reported that music was “very enjoyable” in high school. Participants did not respond as favorably for the dimensions of importance and usefulness, as 61% of participants maintained that music was important and 56% of participants stated that music was useful.

Elementary. Of the total sample of 41 participants in the study, 40 reported that they had music in elementary school. Therefore, for beliefs about music, the elementary results reflect only the students who participated in music activities during their elementary years ($n = 40$). Participants responded favorably overall for beliefs and values about music during their elementary years. An overwhelming majority of participants (93%) mentioned music to be enjoyable during their elementary years. Participants also responded positively for the dimensions of importance and usefulness, with 73% reporting that music was important and 70% reporting that music was useful.

Confidence to Teach Music

The final section of the music Background Survey (MBS) prompted respondents to convey their perceived confidence to teach music. The question stated, “Overall, my background
has made me feel ___________ about teaching music.” The mean response was 4.32 with a standard deviation of 1.62. The results are displayed in Figure 5.5.

![Figure 5.5. Frequency distribution of perceived confidence to teach music, 1 (not confident) to 7 (very confident).](image)

**Music Teaching Self-Efficacy Questionnaire**

The Music Teaching Self-Efficacy Questionnaire (MTSEQ) measured students’ confidence and competence to teach music and was administered in its entirety two times over the 15-week course. It consisted of 35 question items based on the goals and objectives for the four music microteachings, with one subscale pertaining to overall confidence to teach music. Participants answered the pre-MTSEQ during the first week of classes, prior to any music methods instruction or assignments. Participants answered the post-MTSEQ during the final week of the course, after which they had completed their four in-class microteachings and practicum teachings.

Participants also completed a self-efficacy measure right before each microteaching. Because the MTSEQ was organized by microteaching, each set of questions for this mid-measurement of self-efficacy was extracted from the MTSEQ. Therefore, participants reported
their music teaching self-efficacy three times (i.e., pre, mid, post) over the course of the semester. The response rate for each questionnaire was 100%. An assumption underlying this study was that participants would report higher self-efficacy scores each time the MTSEQ was administered.

The frequency distribution of the music teaching self-efficacy mean scores on the pre-MTSEQ revealed an approximately normal distribution. However, the distributions of music teaching self-efficacy mean scores on the mid- and post-MTSEQ revealed non-normal distributions. The negatively skewed data for the mid- and post-MTSEQ mean items was an acceptable result, as the researcher expected students to improve their self-efficacy for teaching music as they progressed through the methods course. Figure 5.6 displays the frequency distributions of mean self-efficacy scores on the pre-, mid- and post-MTSEQ.

![Histograms of MTSEQ scores](image)

*Figure 5.6. Frequency distributions of mean scores for music teaching self-efficacy, 0 (not confident) to 100 (completely confident).*

Quartile-quartile (i.e., Q-Q) plots were employed as a nonparametric approach to display the underlying distributions of the pre-, mid- and post-MTSEQ scores. Q-Q plots display the quantiles of the mean scores on the horizontal axis and the expected normal scores on the vertical
axis. The outliers appear as points that are far away from the overall pattern of points. Figure 5.7 displays the Q-Q plots of the pre-, mid- and post-MTSEQ mean scores.

![Normal Q-Q Plot of pre-MTSEQ](image1.png)

![Normal Q-Q Plot of mid-MTSEQ](image2.png)

![Normal Q-Q Plot of post-MTSEQ](image3.png)

*Figure 5.7. Q-Q plots of mean scores for music teaching self-efficacy, 0 (not confident) to 100 (completely confident).*

The data in the Q-Q plots are represented by the circles along the diagonal line in each plot. A straight line would indicate data that is perfectly normally distributed. In the pre-MTSEQ plot, most of the data points fall on or close to the line. This is a good indicator that the data is approximately normally distributed. The diagonal line begins at higher mean score on subsequent administrations of the MTSEQ indicating the skewed data. There is also more curvature in the mid- and post-MTSEQ data points, indicating that the distributions deviate from normality.
Descriptive statistics for the MTSEQ items at each time point are presented in Tables 5.4 through 5.8. Due to skewed data on the mid- and post-MTSEQ, the median and skewness and kurtosis statistic is reported in addition to mean and standard deviation for each item.

Table 5.4

Descriptive Statistics for Language Arts Embellishment (N = 41)

<table>
<thead>
<tr>
<th>How confident you are right now in your ability to:</th>
<th>M</th>
<th>Mdn</th>
<th>SD</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Play a classroom instrument</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>67.32</td>
<td>80</td>
<td>32.56</td>
<td>-.703</td>
<td>-.811</td>
</tr>
<tr>
<td>Mid</td>
<td>85.85</td>
<td>90</td>
<td>15.00</td>
<td>-1.435</td>
<td>2.537</td>
</tr>
<tr>
<td>Post</td>
<td>90.49</td>
<td>100</td>
<td>17.17</td>
<td>-2.416</td>
<td>6.641</td>
</tr>
<tr>
<td>Use instruments to support teaching language arts</td>
<td>64.15</td>
<td>70</td>
<td>30.49</td>
<td>-.538</td>
<td>-.910</td>
</tr>
<tr>
<td>Pre</td>
<td>77.25</td>
<td>80</td>
<td>17.69</td>
<td>-1.872</td>
<td>3.566</td>
</tr>
<tr>
<td>Mid</td>
<td>90.98</td>
<td>100</td>
<td>14.97</td>
<td>-1.726</td>
<td>2.126</td>
</tr>
<tr>
<td>Keep a steady beat while reading a rhyming poem</td>
<td>82.68</td>
<td>90</td>
<td>20.38</td>
<td>-1.614</td>
<td>2.193</td>
</tr>
<tr>
<td>Pre</td>
<td>78.54</td>
<td>80</td>
<td>18.52</td>
<td>-1.887</td>
<td>4.379</td>
</tr>
<tr>
<td>Mid</td>
<td>89.77</td>
<td>90</td>
<td>13.11</td>
<td>-1.747</td>
<td>3.942</td>
</tr>
<tr>
<td>Create sound effects for a poem</td>
<td>78.29</td>
<td>80</td>
<td>20.97</td>
<td>-1.405</td>
<td>2.249</td>
</tr>
<tr>
<td>Pre</td>
<td>81.95</td>
<td>90</td>
<td>17.78</td>
<td>-2.022</td>
<td>4.414</td>
</tr>
<tr>
<td>Mid</td>
<td>93.90</td>
<td>100</td>
<td>13.21</td>
<td>-2.694</td>
<td>7.496</td>
</tr>
<tr>
<td>Teach children to play classroom instruments</td>
<td>54.39</td>
<td>60</td>
<td>31.47</td>
<td>-2.220</td>
<td>-1.147</td>
</tr>
<tr>
<td>Pre</td>
<td>72.68</td>
<td>80</td>
<td>18.85</td>
<td>-1.681</td>
<td>3.319</td>
</tr>
<tr>
<td>Mid</td>
<td>85.86</td>
<td>90</td>
<td>13.96</td>
<td>-1.880</td>
<td>.312</td>
</tr>
<tr>
<td>Distinguish between different sound qualities</td>
<td>57.56</td>
<td>50</td>
<td>30.07</td>
<td>-.078</td>
<td>-1.059</td>
</tr>
<tr>
<td>Pre</td>
<td>68.05</td>
<td>70</td>
<td>23.05</td>
<td>-1.012</td>
<td>.952</td>
</tr>
<tr>
<td>Mid</td>
<td>82.44</td>
<td>80</td>
<td>16.40</td>
<td>-1.593</td>
<td>3.447</td>
</tr>
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Table 5.5

Descriptive Statistics for Sound Story Big Book (N = 41)

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<th>Skewness</th>
<th>Kurtosis</th>
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Table 5.6

Descriptive Statistics for Steady Beat and Rhythm Icons \((N = 41)\)

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<th>(SD)</th>
<th>Skewness</th>
<th>Kurtosis</th>
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Table 5.7

Descriptive Statistics for Rote Song (N = 41)

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<th>Kurtosis</th>
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Table 5.8

**Descriptive Statistics for MTSEQ: Overall Confidence to Teach Music (N = 41)**

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<th>Mdn</th>
<th>SD</th>
<th>Skewness</th>
<th>Kurtosis</th>
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<td>-2.980</td>
<td>11.719</td>
</tr>
</tbody>
</table>

*Note: Overall music teaching was not assessed at a mid-point because there was not a microteaching for those items.*

**Scale Construction**

As recommended by Bandura (2006), the Music Teaching Self-Efficacy Questionnaire (MTSEQ) was examined for internal consistency reliability by computing Cronbach’s alpha (Cronbach, 1951). The MTSEQ consisted of 35 question items based on the goals and objectives for the four music microteachings, with five items assessing overall confidence to teach music. Descriptive statistics were first computed in order to observe response variability in each item. As shown in the descriptive statistics for the language arts embellishment items (Table 5.9), there was a considerable spread between all item responses on the pre-MTSEQ. Response variability lessened on some mid- and post-items, but this was in line with the prediction that students would report higher self-efficacy scores on the mid- and post-items as a result of gaining more experience in teaching music.
Table 5.9

Response Variability for Language Arts Embellishment (N = 41)

<table>
<thead>
<tr>
<th>Activity</th>
<th>Min</th>
<th>Max</th>
<th>Sum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Play a classroom instrument</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>0</td>
<td>100</td>
<td>2760</td>
</tr>
<tr>
<td>Mid</td>
<td>40</td>
<td>100</td>
<td>3520</td>
</tr>
<tr>
<td>Post</td>
<td>20</td>
<td>100</td>
<td>3710</td>
</tr>
<tr>
<td>Use instruments to support teaching language arts</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>0</td>
<td>100</td>
<td>2630</td>
</tr>
<tr>
<td>Mid</td>
<td>20</td>
<td>100</td>
<td>3090</td>
</tr>
<tr>
<td>Post</td>
<td>50</td>
<td>100</td>
<td>3730</td>
</tr>
<tr>
<td>Keep a steady beat while reading a rhyming poem</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>20</td>
<td>100</td>
<td>3390</td>
</tr>
<tr>
<td>Mid</td>
<td>10</td>
<td>100</td>
<td>3220</td>
</tr>
<tr>
<td>Post</td>
<td>40</td>
<td>100</td>
<td>3660</td>
</tr>
<tr>
<td>Create sound effects for a poem</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>10</td>
<td>100</td>
<td>3210</td>
</tr>
<tr>
<td>Mid</td>
<td>20</td>
<td>100</td>
<td>3360</td>
</tr>
<tr>
<td>Post</td>
<td>40</td>
<td>100</td>
<td>3850</td>
</tr>
<tr>
<td>Teach children to play classroom instruments</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>0</td>
<td>100</td>
<td>2230</td>
</tr>
<tr>
<td>Mid</td>
<td>10</td>
<td>100</td>
<td>2980</td>
</tr>
<tr>
<td>Post</td>
<td>50</td>
<td>100</td>
<td>3520</td>
</tr>
<tr>
<td>Distinguish between different sound qualities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>0</td>
<td>100</td>
<td>2360</td>
</tr>
<tr>
<td>Mid</td>
<td>0</td>
<td>100</td>
<td>2790</td>
</tr>
<tr>
<td>Post</td>
<td>30</td>
<td>100</td>
<td>3380</td>
</tr>
</tbody>
</table>

Reliability. Cronbach’s alpha was determined for the entire set of items for the pre- and post-administration of the instrument, as well as for each microteaching subscale independently (i.e., mid-MTSEQ). Reliability was judged against .70, which is widely acknowledged as the lowest acceptable level (George & Mallery, 2003; Orcher, 2007; Peterson, 1994). For example, the pre-MTSEQ language arts embellishment items yielded Cronbach estimates of .90, .90 and .85 on the pre-, mid- and post-MTSEQ, respectively. These alpha coefficients indicated good to excellent internal consistency of the language arts embellishment subscale items at each time point (George & Mallery, 2003). Rarely did an item emerge on any subscale in which the deletion of that item resulted in a higher Cronbach alpha for the subscale. On those rare occurrences, it only affected one of the survey administrations (i.e., pre, mid or post) and not the
other two. Considering the minimal deletion effect and the satisfactory alpha with that item included, all items were preserved in order to allow for consistency with the music teaching self-efficacy surveys (where the deletion effect was lower than each respective alpha).

The reliability statistics for the language arts embellishment subscale at each time point (i.e., pre, mid, post) are provided in Tables 5.10, 5.11 and 5.12. The overall reliability of the language arts subscale on the post-MTSEQ could be raised slightly (i.e., from .85 to .87) with the omission of the item “distinguish between different sound qualities.” However, given such a small change, this particular item was retained in order to allow for consistency with the pre- and mid-MTSEQ items. The overall reliability was certainly high enough (.85), and the item’s deletion effect low enough (.02), that it was not deemed necessary to remove it.

Table 5.10

Pre-Language Arts Embellishment Subscale: Reliability Statistics

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Scale Mean if Item Deleted</th>
<th>Scale Variance if Item Deleted</th>
<th>Corrected Item-Total Correlation</th>
<th>Squared Multiple Correlation</th>
<th>Cronbach’s Alpha if Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Play a classroom instrument</td>
<td>337.07</td>
<td>12296.22</td>
<td>.78</td>
<td>.82</td>
<td>.88</td>
</tr>
<tr>
<td>Use instruments to support teaching and learning language arts</td>
<td>340.24</td>
<td>12187.44</td>
<td>.87</td>
<td>.85</td>
<td>.86</td>
</tr>
<tr>
<td>Keep a steady beat while reading a rhyming poem</td>
<td>321.71</td>
<td>15629.51</td>
<td>.58</td>
<td>.48</td>
<td>.90</td>
</tr>
<tr>
<td>Create sound effects for a poem</td>
<td>326.10</td>
<td>15509.39</td>
<td>.58</td>
<td>.41</td>
<td>.90</td>
</tr>
<tr>
<td>Teach children to play classroom instruments</td>
<td>350.00</td>
<td>12015.00</td>
<td>.87</td>
<td>.79</td>
<td>.86</td>
</tr>
<tr>
<td>Distinguish between different sound qualities</td>
<td>346.83</td>
<td>13082.20</td>
<td>.73</td>
<td>.69</td>
<td>.88</td>
</tr>
</tbody>
</table>

Cronbach’s alpha = .90
Table 5.11

**Mid-Language Arts Embellishment Subscale: Reliability Statistics**

<table>
<thead>
<tr>
<th>Item</th>
<th>Scale Mean if Item Deleted</th>
<th>Scale Variance if Item Deleted</th>
<th>Corrected Item-Total Correlation</th>
<th>Squared Multiple Correlation</th>
<th>Cronbach’s Alpha if Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Play a classroom instrument</td>
<td>377.75</td>
<td>6474.29</td>
<td>.70</td>
<td>.59</td>
<td>.88</td>
</tr>
<tr>
<td>Use instruments to support teaching and learning language arts</td>
<td>386.50</td>
<td>5792.56</td>
<td>.66</td>
<td>.82</td>
<td>.86</td>
</tr>
<tr>
<td>Keep a steady beat while reading a rhyming poem</td>
<td>385.50</td>
<td>6092.05</td>
<td>.68</td>
<td>.48</td>
<td>.89</td>
</tr>
<tr>
<td>Create sound effects for a poem</td>
<td>382.00</td>
<td>6124.10</td>
<td>.70</td>
<td>.52</td>
<td>.88</td>
</tr>
<tr>
<td>Teach children to play classroom instruments</td>
<td>391.25</td>
<td>5862.50</td>
<td>.75</td>
<td>.71</td>
<td>.88</td>
</tr>
<tr>
<td>Distinguish between different sound qualities</td>
<td>395.75</td>
<td>5430.19</td>
<td>.71</td>
<td>.53</td>
<td>.89</td>
</tr>
</tbody>
</table>

Cronbach’s alpha = .90

Table 5.12

**Post-Language Arts Embellishment Subscale: Reliability Statistics**

<table>
<thead>
<tr>
<th>Item</th>
<th>Scale Mean if Item Deleted</th>
<th>Scale Variance if Item Deleted</th>
<th>Corrected Item-Total Correlation</th>
<th>Squared Multiple Correlation</th>
<th>Cronbach’s Alpha if Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Play a classroom instrument</td>
<td>442.44</td>
<td>3018.90</td>
<td>.63</td>
<td>.69</td>
<td>.82</td>
</tr>
<tr>
<td>Use instruments to support teaching and learning language arts</td>
<td>441.95</td>
<td>2996.10</td>
<td>.78</td>
<td>.72</td>
<td>.79</td>
</tr>
<tr>
<td>Keep a steady beat while reading a rhyming poem</td>
<td>443.66</td>
<td>3223.78</td>
<td>.74</td>
<td>.69</td>
<td>.80</td>
</tr>
<tr>
<td>Create sound effects for a poem</td>
<td>439.02</td>
<td>3464.02</td>
<td>.56</td>
<td>.55</td>
<td>.83</td>
</tr>
<tr>
<td>Teach children to play classroom instruments</td>
<td>447.07</td>
<td>3141.22</td>
<td>.74</td>
<td>.62</td>
<td>.80</td>
</tr>
<tr>
<td>Distinguish between different sound qualities</td>
<td>450.49</td>
<td>3489.76</td>
<td>.38</td>
<td>.35</td>
<td>.87</td>
</tr>
</tbody>
</table>

Cronbach’s alpha = .85

In addition to the language arts embellishment items, reliability statistics were computed for individual items and the 35-item scale. The MTSEQ subscales were evaluated each time the instrument was administered (i.e., pre, mid, post). Reliability was judged against .70. As presented in Table 5.13, the tests for internal consistency reliability yielded alpha coefficients of $\alpha > .8$ for all scales, which indicated good to excellent internal consistency of the subscale items at each time point (George & Mallery, 2003). The results of the subscale reliability tests at each
time point are presented as tables in Appendix D. As was the case with the language arts embellishment items, rarely did an item emerge in which the deletion of that item resulted in a higher Cronbach alpha for the subscale. Considering the minimal deletion effect and the satisfactory alpha with the item included, the item was preserved in order to allow for consistency with the music teaching self-efficacy surveys (where the deletion effect was lower than each respective alpha).

Table 5.13

*Instrument Reliability Statistics Based on Administration Time for MTSEQ Subscales*

<table>
<thead>
<tr>
<th>Microteaching</th>
<th>N</th>
<th>Number of Items</th>
<th>Pre-MTSEQ</th>
<th>Mid-MTSEQ</th>
<th>Post-MTSEQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language Arts Embellishment</td>
<td>41</td>
<td>6</td>
<td>.90</td>
<td>.90</td>
<td>.85</td>
</tr>
<tr>
<td>Sound Story Big Book</td>
<td>41</td>
<td>4</td>
<td>.96</td>
<td>.92</td>
<td>.89</td>
</tr>
<tr>
<td>Steady Beat/Rhythm Icons</td>
<td>41</td>
<td>11</td>
<td>.92</td>
<td>.94</td>
<td>.90</td>
</tr>
<tr>
<td>Rote Song</td>
<td>41</td>
<td>9</td>
<td>.87</td>
<td>.92</td>
<td>.89</td>
</tr>
<tr>
<td>Overall Music Teaching</td>
<td>41</td>
<td>5</td>
<td>.94</td>
<td></td>
<td>.96</td>
</tr>
</tbody>
</table>

*Note: Overall music teaching was not assessed at a mid-point because there was not a microteaching for those items.*

The high Cronbach alpha estimates indicated that the five subscales of the MTSEQ (i.e., four microteachings plus overall confidence) came together in a homogenous way. Even though each microteaching had different objectives and required students to perform different musical skills and tasks, these items can be combined to measure participants’ self-efficacy to teach music. Due to the consistently high alpha coefficients, all 35 items were summed on the pre- and post-MTSEQs, respectively, then Cronbach’s alpha reliability coefficients were computed for both the pre-MTSEQ and the post-MTSEQ. The test for internal consistency reliability yielded an *alpha* coefficient of *α* = .97 for both the pre- and post-MTSEQ, which indicated excellent internal consistency of the summed items in the scales (George & Mallery, 2003). In addition, because the tests of internal consistency reliability resulted in item homogeneity, the researcher
combined the subscales into one overall measure of participants’ music teaching self-efficacy and computed mean averages for each subscale to conduct subsequent analysis.

Changes in Self-Efficacy Perception

A major goal of this research was to profile changes in early childhood education majors’ efficacy beliefs for teaching music throughout a 15-week music methods course. Changes in self-efficacy perception were therefore analyzed using the data from students’ reported self-efficacy scores on the pre-, mid- and post-questionnaires. In the sections that follow, the overall results for changes in self-efficacy perception are first presented, followed by results for changes in self-efficacy perception for each microteaching. Due to non-normal distributions for the pre-, mid- and post-MTSEQ scores, the results of both parametric and non-parametric tests are reported.

*Overall Changes in Music Teaching Self-Efficacy*

A repeated measures analysis revealed a significant overall increase in student self-efficacy scores over time, $F = 57.11, p < .001$. Even though Mauchly’s test indicated that the assumption of sphericity had been violated, $\chi^2(2) = 11.69, p < .05$, all tests of within-subjects effects revealed that there was a significant effect of time on perceived music teaching self-efficacy, $p < .001$. The results are displayed in Table 5.14.

Table 5.14

*Tests of Within-Subjects Effects for Changes in Self-Efficacy over Time*

<table>
<thead>
<tr>
<th>Source</th>
<th>Type III Sum of Squares</th>
<th>$df$</th>
<th>$M^2$</th>
<th>$F$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sphericity Assumed</td>
<td>11527.69</td>
<td>2.00</td>
<td>5763.85</td>
<td>57.11</td>
<td>.000</td>
</tr>
<tr>
<td>Greenhouse-Geisser</td>
<td>11527.69</td>
<td>1.59</td>
<td>7256.91</td>
<td>57.11</td>
<td>.000</td>
</tr>
<tr>
<td>Huynh-Feldt</td>
<td>11527.69</td>
<td>1.64</td>
<td>7014.14</td>
<td>57.11</td>
<td>.000</td>
</tr>
<tr>
<td>Lower-bound</td>
<td>11527.69</td>
<td>1.00</td>
<td>11527.69</td>
<td>57.11</td>
<td>.000</td>
</tr>
<tr>
<td><strong>Error(SE)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sphericity Assumed</td>
<td>8074.65</td>
<td>80.00</td>
<td>100.93</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Greenhouse-Geisser</td>
<td>8074.65</td>
<td>63.54</td>
<td>127.08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Huynh-Feldt</td>
<td>8074.65</td>
<td>65.74</td>
<td>122.83</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lower-bound</td>
<td>8074.65</td>
<td>40.00</td>
<td>201.87</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Figure 5.8 displays the changes in self-efficacy perception for all students over the course of the semester. Furthermore, as shown in Tables 5.15 and 5.16, significant differences were found at the .05 level for each pairwise comparison of self-efficacy perception from pre- to mid-MTSEQ, mid- to post-MTSEQ, and pre- to post-MTSEQ.

![Boxplot of music teaching self-efficacy perception over time (all participants), 0 (no confidence) to 100 (complete confidence). Dark horizontal lines indicate median, boxes indicate inter-quartile range, vertical lines indicate range, circles indicate minor outliers (1.5 x IQR outside the central box), and stars indicate major outliers (3.0 x IQR outside the central box).](image)

**Figure 5.8.** Boxplot of music teaching self-efficacy perception over time (all participants), 0 (no confidence) to 100 (complete confidence). Dark horizontal lines indicate median, boxes indicate inter-quartile range, vertical lines indicate range, circles indicate minor outliers (1.5 x IQR outside the central box), and stars indicate major outliers (3.0 x IQR outside the central box).

**Table 5.15**

<table>
<thead>
<tr>
<th>Paired Differences</th>
<th>M</th>
<th>SD</th>
<th>SE Mean</th>
<th>95% Confidence Interval of the Difference</th>
<th>t</th>
<th>df</th>
<th>p (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre – Mid</td>
<td>-9.20</td>
<td>16.24</td>
<td>2.54</td>
<td>-14.33 – -4.07</td>
<td>-4.07</td>
<td>40</td>
<td>.001</td>
</tr>
<tr>
<td>Mid – Post</td>
<td>-14.33</td>
<td>10.00</td>
<td>1.56</td>
<td>-17.48 – -11.17</td>
<td>-11.17</td>
<td>40</td>
<td>.000</td>
</tr>
</tbody>
</table>
Table 5.16

**Wilcoxon Signed Ranks Tests for MTSEQ Overall Mean Ranks**

<table>
<thead>
<tr>
<th></th>
<th>Mid – Pre</th>
<th>Post – Mid</th>
<th>Post – Pre</th>
</tr>
</thead>
<tbody>
<tr>
<td>( z )</td>
<td>-3.08</td>
<td>-5.57</td>
<td>-5.53*</td>
</tr>
<tr>
<td>( p ) (2-tailed)(^b)</td>
<td>.002</td>
<td>.000</td>
<td>.000</td>
</tr>
</tbody>
</table>

\(^a\)Based on negative ranks.
\(^b\)Asymptotic significance indicates significant difference among mean ranks.

This general increase over time is most likely the result of increased enactive mastery experiences, as students gained experience by teaching music lessons to their peers and then to young children. Students’ narrative comments revealed the benefit of independently teaching music to young children. Students recounted the importance of practical experience, or “just doing it,” as a primary reason for their increase in confidence.

*I am really glad I had the chance to work with these kids, and I really enjoyed teaching them music. It has really helped my confidence in the classroom, and I am looking forward to planning different ways to incorporate music and songs in each of my lessons from here on out.*

*I am so happy that I have gotten to do these teachings because they have made me get outside of comfort zone. I feel more confident in venturing out and bringing more music into my curriculum.*

*I have always been intimidated by teaching music to children. However, this experience helped me overcome that battle.*

**Changes in Self-Efficacy Perception for Microteachings**

After the data analysis revealed an overall increase in participants’ music teaching self-efficacy, the data were analyzed according to microteaching to determine if significant gains were made for each music teaching area. Data from the pre-, mid- and post-items on the Music Teaching Self-Efficacy Questionnaire were analyzed to profile changes in participants’ music teaching self-efficacy perception for each microteaching: (a) language arts embellishment; (b) sound story big book; (c) steady beat and rhythm icons; and (d) rote song. As stated earlier, the
results of both parametric and non-parametric tests are reported to account for non-normal distributions for the MTSEQ scores.

In addition to the presentation of the quantitative data, narrative data is presented to support the quantitative findings. Open-ended comments for three of the four microteachings were solicited on the pre- and post-MTSEQ. As described in Chapter 4, these comments were categorized according to microteaching and preserved in an Excel file. The researcher further organized the pre- and post-microteaching comments by student, in order to track changes in perceived confidence and competence to teach music.

Language Arts Embellishment

The language arts embellishment was the first of four microteachings throughout the semester. Playing and integrating instruments (e.g., classroom percussion instruments and found sounds) were hallmarks for this teaching. As shown in Tables 5.17 and 5.18 significant differences were found at the .05 level for each pairwise comparison of self-efficacy items for the language arts embellishment. The non-parametric Wilcoxon Matched-Pairs Signed Ranks Test also revealed significant differences among all pairs at the .05 level.

Table 5.17

<table>
<thead>
<tr>
<th>Paired Differences</th>
<th>95% Confidence Interval of the Difference</th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>SE Mean</td>
<td>Lower</td>
</tr>
<tr>
<td>Pre – Mid</td>
<td>-10.01</td>
<td>20.78</td>
<td>3.25</td>
<td>-16.57</td>
</tr>
<tr>
<td>Mid – Post</td>
<td>-11.41</td>
<td>12.11</td>
<td>1.89</td>
<td>-15.24</td>
</tr>
<tr>
<td>Pre – Post</td>
<td>-21.42</td>
<td>20.79</td>
<td>3.25</td>
<td>-27.98</td>
</tr>
</tbody>
</table>
Narrative comments from the pre- and post-MTSEQs evoked considerably different responses when students were asked to “add a comment that will help me understand your level of confidence to teach young children to play instruments.” The student comments below reflected an increase in confidence from the beginning to the end of the music methods course.

**Pre-MTSEQ**  
**Student 1**  
*I have never played an instrument seriously in my life, so therefore I cannot teach the children to play.*

**Student 2**  
*I do not know how to play any instruments, so I’m not very confident teaching children to play instruments.*

**Student 3**  
*I am not very confident in my ability to use instruments or to play them because I have not had very much exposure to many instruments.*

**Post-MTSEQ**  
**Student 1**  
*I can teach young children to play instruments seeing as I feel 100% confident playing them myself.*

**Student 2**  
*I am much more confident now after having the experiences in the classroom, that I can teach young children to play instruments.*

**Student 3**  
*I am much more confident in my ability to play an instrument than I was before this class. I had never played instruments before this class, but after some exposure to them, I have developed some instrumental confidence.*

**Sound Story Big Book**  

The second microteaching prompted students to create and model vocal exploration sounds and patterns to accompany a nursery rhyme. As shown in Tables 5.19 and 5.20, significant differences were found at the .05 level for each pairwise comparison of self-efficacy items for the sound story big book. The non-parametric Wilcoxon Matched-Pairs Signed Ranks Test also revealed significant differences among all pairs at the .05 level.
Table 5.19

Paired Samples t Tests for Sound Story Big Book

<table>
<thead>
<tr>
<th>Paired Differences</th>
<th>95% Confidence Interval of the Difference</th>
<th>t</th>
<th>df</th>
<th>p (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>SE Mean</td>
<td>Lower</td>
<td>Upper</td>
<td></td>
</tr>
<tr>
<td>Pre – Mid</td>
<td>-15.79</td>
<td>29.57</td>
<td>4.62</td>
<td>-25.13</td>
</tr>
<tr>
<td>Mid – Post</td>
<td>-8.35</td>
<td>13.25</td>
<td>2.07</td>
<td>-12.54</td>
</tr>
<tr>
<td>Pre – Post</td>
<td>-24.15</td>
<td>26.35</td>
<td>4.11</td>
<td>-32.46</td>
</tr>
</tbody>
</table>

Table 5.20

Wilcoxon Signed Ranks Tests for Sound Story Big Book

<table>
<thead>
<tr>
<th></th>
<th>Mid – Pre</th>
<th>Post – Mid</th>
<th>Post – Pre</th>
</tr>
</thead>
<tbody>
<tr>
<td>z</td>
<td>-2.91\textsuperscript{a}</td>
<td>-3.50\textsuperscript{a}</td>
<td>-4.66\textsuperscript{a}</td>
</tr>
<tr>
<td>p (2-tailed)\textsuperscript{b}</td>
<td>.004</td>
<td>.000</td>
<td>.000</td>
</tr>
</tbody>
</table>

\textsuperscript{a}Based on negative ranks.
\textsuperscript{b}Asymptotic significance indicates significant difference among mean ranks.

Because the music competencies for teaching the sound story big book were comparable to those for teaching a rote song (described later), the researcher did not elicit narrative responses regarding the big book. The primary competency for the big book microteaching involved creating and modeling vocal exploration patterns. The primary competency for teaching a rote song involved singing alone. Narrative comments regarding students’ using their voices are presented in conjunction with the rote song microteaching below.

Steady Beat and Rhythm Icons

The focus of the third microteaching was rhythm. As shown in Tables 5.21 and 5.22, both the paired samples t tests and Wilcoxon tests revealed significant differences at the .05 level for the mid- to post- and pre- to post- self-efficacy scores for the steady beat and rhythm icon items. The difference between pre- to mid-scores was not significant. This was not surprising, as the Friedman test revealed only a slight increase in mean rank score from 1.37 (pre) to 1.63 (mid). Also worth noting were the 37% of participants ($n = 15$) who actually reported lower mean self-
efficacy scores on the mid-items than their reported pre-items for the steady beat and rhythm icon microteaching.

Table 5.21

Paired Samples t Tests for Steady Beat and Rhythm Icons

<table>
<thead>
<tr>
<th>Paired Differences</th>
<th>95% Confidence Interval of the Difference</th>
<th>t</th>
<th>df</th>
<th>p (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre – Mid</td>
<td>M: -4.61, SD: 21.98, SE Mean: 3.43</td>
<td>Lower: -11.55, Upper: 2.32</td>
<td>-1.34</td>
<td>40</td>
</tr>
</tbody>
</table>

Table 5.22

Wilcoxon Signed Ranks Tests for Steady Beat and Rhythm Icons

<table>
<thead>
<tr>
<th></th>
<th>Mid – Pre</th>
<th>Post – Mid</th>
<th>Post – Pre</th>
</tr>
</thead>
<tbody>
<tr>
<td>z</td>
<td>-1.59a</td>
<td>-5.44a</td>
<td>-5.44a</td>
</tr>
<tr>
<td>p (2-tailed)b</td>
<td>.111</td>
<td>.000</td>
<td>.000</td>
</tr>
</tbody>
</table>

*aBased on negative ranks.
*bAsymptotic significance indicates significant difference among mean ranks.

Despite the non-significant increase in self-efficacy to teach the rhythm lesson on pre- to mid-items, an overwhelming majority of participants (93%) increased their mean score from the pre- to post-MTSEQ for the steady beat and rhythm icon items. Narrative comments from the pre- and post-MTSEQs evoked considerably different responses. The student comments below reflected an increase in confidence from the beginning to the end of the music methods course.

<table>
<thead>
<tr>
<th>Pre-MTSEQ</th>
<th>Post-MTSEQ</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Student 1</strong> When it comes to movement, I am very confident, but concerning notes and rests, I am pretty much lost. I would think that I could do things with rhythms, but I am just not completely confident with music.</td>
<td>I feel very confident in implementing the strategies we have gone through this semester.</td>
</tr>
</tbody>
</table>
Student 2  
I am somewhat confident in my ability to teach children to listen to music, simply because I enjoy music, and I actively listen to it.  

After doing the steady beat and rhythm icon cards, my confidence of teaching young children to listen to music greatly increased.

Rote Song

The final microteaching required participants to teach a song using only their voice as a model. As shown in Tables 5.23 and 5.24, significant differences were found at the .05 level for each pairwise comparison of self-efficacy scores for the rote song items. The non-parametric Wilcoxon Matched-Pairs Signed Ranks Test also revealed significant differences among all pairs at the .05 level.

Table 5.23

Paired Samples t Tests for Rote Song

<table>
<thead>
<tr>
<th>Paired Differences</th>
<th>M</th>
<th>SD</th>
<th>SE Mean</th>
<th>Lower</th>
<th>Upper</th>
<th>t</th>
<th>df</th>
<th>p (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre – Mid</td>
<td>-11.34</td>
<td>15.04</td>
<td>2.35</td>
<td>-16.09</td>
<td>-6.60</td>
<td>-4.83</td>
<td>40</td>
<td>.000</td>
</tr>
<tr>
<td>Mid – Post</td>
<td>-13.32</td>
<td>12.51</td>
<td>1.95</td>
<td>-17.27</td>
<td>-9.37</td>
<td>-6.81</td>
<td>40</td>
<td>.000</td>
</tr>
<tr>
<td>Pre – Post</td>
<td>-24.66</td>
<td>15.47</td>
<td>2.42</td>
<td>-29.54</td>
<td>-19.78</td>
<td>-10.21</td>
<td>40</td>
<td>.000</td>
</tr>
</tbody>
</table>

Table 5.24

Wilcoxon Signed Ranks Tests for Rote Song

<table>
<thead>
<tr>
<th></th>
<th>Mid – Pre</th>
<th>Post – Mid</th>
<th>Post – Pre</th>
</tr>
</thead>
<tbody>
<tr>
<td>z</td>
<td>-4.07a</td>
<td>-5.22b</td>
<td>-5.58a</td>
</tr>
<tr>
<td>p (2-tailed)b</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
</tbody>
</table>

a Based on negative ranks.
b Asymptotic significance indicates significant difference among mean ranks.

Narrative comments from the pre- and post-MTSEQs evoked considerably different responses when students were asked to “add a comment that will help me understand your level of confidence to teach young children to sing.” The student comments below reflected an increase in confidence from the beginning to the end of the music methods course.
Sources of Music Teaching Self-Efficacy

According to Bandura’s social cognitive theory, the four sources of self-efficacy beliefs are mastery experiences, vicarious experiences, social persuasion, and physiological and affective states. Therefore, the second major goal of this research was to examine the influence of these sources on students’ perceived self-efficacy for teaching music within the context of a 15-week music methods course for early childhood education majors. The primary sources of data to investigate these sources included quantitative and narrative data from the Music Background Survey as well as narrative data from the Music Teaching Self-Efficacy Questionnaire, focus group sessions, and students’ reflective writings. In agreement with social cognitive theory, all four sources posited by Bandura surfaced in this study. The schematic representation of these sources is depicted in Figure 5.9. The impact of each source of music teaching self-efficacy beliefs is described in the sections that follow.
Figure 5.9. Schematic representation of the sources of pre-service early childhood teachers’ music teaching self-efficacy beliefs.

Mastery Experiences

Consistent with Bandura’s argument that enactive mastery experience is the most influential source of self-efficacy beliefs, quantitative data from the Music Background Survey (MBS) and narrative data from students’ written comments and focus group data documented the paramount influence of applied experience on music teaching self-efficacy beliefs. For example, a frequency count of students’ comments regarding the sources of self-efficacy revealed that mastery experiences outnumbered the other three sources combined almost two to one. For the purposes of this study, mastery experiences included the following: (a) previous music experiences; (b) peer teaching; and (c) practicum teaching.
Previous Music Experiences

The researcher used the responses from the Music Background Survey (MBS) to organize participants based on their reported music experiences prior to taking the music methods course. These music activities included those in which students actively participated through their middle and high school years (i.e., band, choir, private lessons), rather than passive activities such as listening to music. Students’ music experiences were categorized into three levels: low (no formal music activities), medium (1 to 3 formal music activities), and high (4 or more formal music activities). As shown in Figure 5.10, the high and low groups combined represented approximately half the sample (i.e., 24.4% and 26.8%, respectively), while the medium group represented roughly half (i.e., 48.8%).

![Figure 5.10. Research participants by music experience prior to taking MUED 4670.](image)

The relationship between amount of the students’ prior music experience and their score on the pre-MTSEQ was analyzed using both parametric and nonparametric statistics. A univariate ANOVA with pre-MTSEQ score as the dependent variable and music experience as the between-subjects factor revealed a significant main effect of prior music experience on pre-MTSEQ scores, $F = 13.018, p < .001$. The results of the Kruskal–Wallis test were also highly
significant ($H = 17.217, 2 \text{ df}, p < .001$); the mean ranks of pre-MTSEQ scores per individual were significantly different among the three levels of prior music experience. The students with a high number of prior music experiences had the highest mean rank (31.85). By contrast, the students with a low number of prior music experiences had the lowest mean rank (10.18).

Figure 5.11 displays a boxplot of the relationship between prior music experience and pre-MTSEQ scores. The outliers in the “high experience” category represent two students who reported a high number of prior music experiences, yet they also reported low mean scores on the pre-MTSEQ. The most plausible explanation to be found from close examination of the data sets and students responses for these outliers is that they were non-traditional students: they were older than the average undergraduate students (aged 18-23), and more time had passed since they had actively participated in music activities during their middle and high school years.

![Boxplot of reported self-efficacy on the pre-MTSEQ](image)

*Figure 5.11. Boxplot of reported self-efficacy on the pre-MTSEQ, 0 (no confidence) to 100 (complete confidence), by prior music experience.*

When asked if past experiences in music contributed to their level of confidence to teach music, participants’ responses supported the above quantitative results:
My past experiences definitely have helped me feel more confident. If I hadn’t done piano, choir, voice lessons and that sort of thing, if I hadn’t had that experience, I’d be scared crapless of this class.

Taking a music education class at the previous university, I have a background in music education. As a child we went to music twice a week. I still remember the activities I participated in. I think I will be able to teach children music confidently because I know they will enjoy learning and participating.

Coming into this class, I was scared to death because I had never had music. I am not a very musical person...I am not very confident in my ability to teach music.

Independent Teaching Experiences

The music methods course investigated in this study was application based, as students applied the knowledge they gained from course activities, discussions and assignments to teach four music micro-lessons. Students taught each lesson twice: the first was in class to their peers, and the second was with young children in a practicum setting off campus. Students spoke favorably of the in-class “opportunities to practice” as they prepared to teach. Students’ cited their practicum as the most important experience which boosted their confidence to teach music, as represented in the frequency count of students’ comments. As exemplified in the sections below, students were in favor of the application based instruction and felt that the hands-on experiences helped to boost their confidence to teach music to young children.

Peer teaching. The peer teachings provided an opportunity for students to practice teaching each micro-lesson before presenting it to children. Students also received immediately feedback on how to improve their instruction. The feedback came from their scores on the evaluation rubric, as well as written comments from the instructor. Even though most students reported feelings of anxiety and intimidation when recalling peer teachings, focus group data revealed the impact of the peer teachings on their confidence to teach the same lessons to young children:
I enjoyed making the lesson and thinking of it, but I hated presenting in front of my peers. But it definitely made doing it with the kids so much easier.

The micro-teachings allowed me to get very familiar with music and very confident in exploring it. This allowed me to share it with my children.

Teaching college students lessons geared toward young children was very intimidating. After peer teaching four, I found it to be well worth it. Being able to experience getting up in front of the class, I was able to see what I needed to work on which I took into my lessons with my children.

One participant commented on the peer teachings when asked about what she liked “most about the course and/or professor” on the open-ended comments section of the final course evaluation:

Peer teachings because it helped a lot as far as giving me a feel for getting up in front of a group, not just to talk, but to teach.

Practicum teaching. After teaching each micro-lesson to their peers, the students taught their music lessons to a group of five or more children, aged 4-year-olds through second graders. Participants agreed that having opportunities to implement the methods they learned in the music methods course were beneficial for them and boosted their confidence to teach music. Students often referred to their practicum teaching as a “positive” and “beneficial experience” and regularly mentioned the benefits of just “doing it with the kids.”

They [the kids] are so excited when they hear music; when I turned on my song for the steady beat thing, their faces lit up when the music came on.

After doing the steady beat and rhythm icon cards, my confidence of teaching young children to listen to music greatly increased.

I feel like it [practicum teaching] prepared me in a way other classes have not done yet. It really gave the feeling of being a teacher, and I truly benefited from it in a positive way.

It [practicum teaching] was encouraging in more than one way and definitely made me want to continue my journey toward being a teacher.
Coming into this class, I was scared to death because I had never had music, and nobody in my family can carry a tune in a bucket...like we are not a musical family at all, so I was scared to death of taking this class. And I am still not completely confident in teaching music...but it doesn’t terrify me anymore...and I think a lot of that was because of working with the kids...If I wouldn’t have worked with the kids, I’d still be scared to death, so I think a lot of it is working with the kids.

The student quoted directly above reported a higher mean self-efficacy score at each administration of the Music Teaching Self-Efficacy Questionnaire (MTSEQ). She had the second lowest score on the pre-MTSEQ (M = 35), and then increased her mean scores to 67 and 81.67 on the mid-MTSEQ and post-MTSEQ, respectively. She reported absolutely no music experiences on the Music Background Survey (MBS) and primarily attributed her increased music teaching self-efficacy to the experience of teaching children in the practicum setting.

Vicarious Experiences

Another source of the pre-service early childhood teachers’ music teaching self-efficacy beliefs was their observations of others teach music. Observation was a major component of the music methods course. In this study, vicarious experiences consisted of participants’ observations of the following: (a) an elementary music specialist; and (b) their peers.

Observations of Music Specialist

Participants observed the elementary music specialist at the university lab school teach four lessons throughout the semester. Each of the four observations required students to observe in a different way. The first two observations were participatory, whereby college students participated in music class with the elementary students. The last two observations required the pre-service teachers to “sit and watch.” Because observation is such a pervasive component of the early childhood education degree coursework, participants initially objected to the four required observations outside of class time for the music methods course.
All pre-service early childhood educators observed the same music specialist for all four observations [who will be referred to as Ms. Clark for the purposes of anonymity]. Ms. Clark has 19 years experience teaching elementary general music, is a national board certified teacher in early and middle childhood music, and was state teacher of the year. Despite her accolades, none of the participants expressed they were intimidated by observing Ms. Clark. On the contrary, they regularly spoke of the benefit of these observations in arming them with both ideas and confidence, not only to teach music, but also to be an overall effective teacher:

*I feel more confident...especially going to the observations with [Ms. Clark]...for me to watch her and watch the way she does not stop...she has such control...it’s helpful for me just to see her techniques...she’s given me a lot more confidence in my ability to teach music with the children; I know the process and that makes me more confident in my ability to teach.*

*I think it’s good that you make us go to [Ms. Clark]. I had an experience with another observation that was horrible...Seeing [Ms. Clark]...it definitely makes you want to be more like that instead of the bad.*

**Observations of Peers Teach**

Participants watched their fellow classmates present their four music micro-lessons to the methods class. Because most of the early childhood education majors followed the recommended course of study for their degree, the participants were familiar with one another from their coursework and practicum experiences leading up to taking the music methods course in their junior year, they already had a supportive and encouraging rapport with one another. Overall, focus group data revealed the positive impact of peer observations:

*I would watch during the individual peer teachings to watch what these girls were doing, and then it would click what I had in my mind because you learn from what everybody else is doing and would think to myself, “Oh, I need to do it that way.”*

Focus group data also suggested that students were sometimes intimidated by observing their peers teach:
If it’s a technique that I think I could do myself, then it [watching peers teach] will help me try to do that, but if they [peers] are doing something above my head, I feel like there’s no way I could do that, so it could go either way.

Verbal Persuasion

The verbal appraisal people receive in their social environments was described as a limited, but significant source of self-efficacy beliefs by Bandura (1977; 1997). The two primary forms of verbal persuasion in this study came from instructor comments and comments from young children in participants’ practicum setting. Narrative comments revealed the impact of verbal persuasion on students’ self-efficacy beliefs.

Instructor Feedback

Since methods course instructors are important role models for teacher candidates, their feedback is likely to impact pre-service teachers’ efficacy beliefs. For the music methods course, an evaluation rubric was provided for each microteaching, in which the course instructor offered both praise and constructive criticism to the students in the form of written comments. Focus group data and comments on the course evaluation revealed an overall positive influence of instructor feedback:

She [the instructor] made us feel confident when we had to get up and teach.

Getting written comments on my rubric really, really boosted my confidence.

Feedback from Children

An unexpected facet of verbal persuasion surfaced as participants reflected on their practicum experience of teaching music to young children. Students frequently reported a boost in confidence when their students asked to “do it again.” Narrative comments from the pre-service teachers’ written reflections and focus groups sessions revealed the impact that their students’ comments had on their music teaching self-efficacy:
I actually went into the daycare on a day I wasn’t teaching to turn in some paperwork, and one of the little boys ran up to me and said, “Hey, you are the one who taught me that pumpkin song.” This made me feel really great because I knew then that they were really learning my activities.

Even though I may not have been extremely confident with every teaching, it made me feel like I was doing something right when they [the children] were so excited to start the next teaching.

When I went back on days I wasn’t teaching, when I was just observing, the kids would ask me, “Are you teaching us today?” and I’d be like no, sorry. And they’d ask, “You think you can come do it again?” So that really helped boost my confidence that they enjoyed what I was doing.

**Physiological and Affective States**

According to the application of Bandura’s social cognitive theory to music education, the fourth source of music teaching self-efficacy beliefs depends on the emotional states of teacher candidates in situations requiring music learning and teaching. Narrative data from student comments on the MTSEQ as well as data from focus group sessions revealed that both music anxiety and stress and fatigue impacted their self-efficacy to teach music.

**Music Anxiety**

In this study music anxiety surfaced as a result of performing musical skills (e.g., singing, playing instruments) as well as teaching music micro-lessons to peers. The rote song microteaching elicited more feelings of nervousness and anxiety than any other teaching experience. Singing alone elicited strong feelings of anxiety among many participants. Participants were prompted to “add a comment that will help me understand your level of confidence to teach young children to sing” on the pre-MTSEQ. Phrases such as “horrible singer” and “no good at singing” occurred with great frequency as participants conveyed their anxiety about singing in front of others:

*I am really nervous about teaching songs and singing alone in front of others!*
I am nervous to sing in front of others, so I know it will be a problem to sing in front of children.

Peers versus children. Increased anxiety resulted from participants singing in front of their colleagues for the peer teaching versus singing for the children in the practicum setting. Comments from the pre-MTSEQ revealed varying degrees of anxiety:

I am confident in my ability to sing privately. I do however get nervous singing in front of my peers. I think I would be alright singing in front of children, because they are younger than me and might not be able to judge as much.

I’m not very confident; I don’t consider myself to be a great singer, and thinking about singing in front of my peers makes me very nervous. Kids are different because I know they don’t care if I’m a good singer or not; but I still don’t feel very confident in my ability.

I feel like I can teach children to sing, but singing in front of adults/other students, I do not feel at ease yet. It has been a long time since I have done this in front of peers.

Singing anxiety at the end of the course. Even though participants sang in every class throughout the semester and taught a song to both their peers and to children, many participants still reported feelings of nervousness or anxiety when prompted to “add a comment that will help me understand your level of confidence to teach young children to sing” on the post-MTSEQ. As evidenced below, many comments still suggested a high level of anxiety about singing in front of peers:

I am still nervous about singing by myself!

I am confident in singing with others or a recording, but I am not very confident in singing a new song myself, but I feel I could teach that way to young children, just not peers.

Singing in front of my peers all by myself makes me really nervous, but I feel better about doing it in front of children, I don’t feel like they are as intimidating!

I feel confident in teaching young children to sing...not my peers (my age!)

I feel confident I can do this, but I still feel rather nervous, especially around peers.
I learned that teaching in front of children is a lot less nerve-racking than teaching in front of my peers.

Singing anxiety versus other music skills. Singing was the only musical skill that seemed to elicit feelings of anxiety as a source of self-efficacy to teach music. When asked to add a comment about their confidence to teach children to play instruments or to listen to music on the pre-MTSEQ, students frequently cited either musical background or music experience to explain their level of confidence. No student reported that she was anxious or nervous to teach children to play instruments or to listen to music:

I am not very confident in my ability to use instruments or to play them because I have not had very much exposure to many instruments.

I am mostly confident that I could do these things because I have enough experience with instruments and beat keeping to show other children.

I don't have much of a musical background, so this makes me less confident in teaching anything to do with music.

Stress and Fatigue

Participants often reported feelings of stress and fatigue. However, these feelings were cited as pervasive feelings of a full-time college student, not as feelings that contributed to their self-efficacy to teach music. Even though students reported feeling stressed and overly tired, they did not attribute these feelings to impacting on their confidence in any way:

I don't know about confidence necessarily. I just know that when I'm stressed out from other things or tired, just like I have so much other stuff going on, there's a lack of focus. I wasn't as focused on it [teaching] as I could have been.

Chapter Summary

A report of the survey response rate, descriptive statistics, instrument reliability calculations and results of research questions were presented in this chapter. With a 100% survey response rate (N = 41); each test was determined to be reliable as each administration of the MTSEQ instrument yielded Cronbach alphas of >.80, which indicated good to excellent internal
consistency of the subscale items at each time point. Furthermore, the high Cronbach alpha estimates confirmed that the subscales of the MTSEQ came together in a robust, homogenous way. Therefore, the subscales were combined to measure participants’ overall music teaching self-efficacy.

Participants reported varying degrees of prior music experience with almost 50% of students ($n = 20$) reporting a medium number of prior music experiences (i.e., 1 to 3 formal music activities). Ten students reported a high number of formal music activities (i.e., 4 or more), and 11 students reported no prior formal music experiences. School and church choir were the two most frequently reported prior music experiences.

A repeated measures analysis revealed a significant overall increase in student self-efficacy scores over time. Paired sample $t$-tests also provided evidence to suggest that there were statistically significant differences at the .05 level for each pairwise comparison of self-efficacy perception from pre- to mid-MTSEQ, mid- to post-MTSEQ, and pre- to post-MTSEQ.

Paired sample $t$-tests and Wilcoxon Matched-Pairs Signed Ranks Test were conducted for the pre-, mid- and post-subscale (i.e., microteaching) items revealing significant differences at the .05 level among all pairs for the following microteachings: (a) language arts embellishment; (b) sound story big book; and (c) rote song. For the steady beat and rhythm icon subscale, paired sample $t$-tests and Wilcoxon Matched-Pairs Signed Ranks Test revealed significant differences at the .05 level for the mid- to post- and pre- to post- self-efficacy scores, but the difference between pre- to mid-scores was not significant.

The four sources of self-efficacy theorized by Bandura were evident in this study. Previous music experiences and independent teaching experiences exemplified enactive mastery experiences. A univariate ANOVA with pre-MTSEQ score as the dependent variable and music
experience as the between-subjects factor revealed a significant main effect of prior music experience on pre-MTSEQ scores. Likewise, the Kruskal–Wallis test revealed statistically significant difference among mean ranks. Narrative data supported the impact of peer teachings and practicum teachings on participants’ self-efficacy to teach music, but a frequency count of students’ comments revealed that the practicum more greatly influenced students’ confidence to teach music.

The other three sources of music teaching self-efficacy were explored through narrative data from questionnaires, focus groups and students’ reflective writing. Vicarious experiences included observations of both a music specialist and peers teaching music. Verbal persuasion included feedback from both the course instructor and the children the students taught for their practicum. Finally, physiological and affective states were exemplified by participants’ music anxiety, and to a lesser degree, stress and fatigue.

A discussion of the aforementioned results as well as suggested implications and directions for future research are provided in the next chapter.
CHAPTER 6
SUMMARY, DISCUSSION AND CONCLUSIONS

Introduction

The purpose of this study was to investigate self-efficacy perceptions among pre-service early childhood teachers when exposed to a music methods course. In the preceding chapter, the presentation and analysis of data were reported. This chapter presents a summary of the study, discussion of the findings, implications for practice, recommendations for further research, and conclusions. The purpose for the latter sections is twofold: (a) to expand upon concepts that were studied in an effort to understand their possible influence on generalists, music education and tertiary music training; and (b) to present suggestions for further research targeting music methods courses for generalists. Finally, a synthesizing statement is offered to capture the nature and scope of what has been attempted in this research.

Summary of the Study

This study involved a sample of 41 female pre-service early childhood teachers enrolled in two sections of a fall 2009 music methods course taught by the researcher at a large public university in the southeastern region of the United States. Pre-service teacher candidates enrolled in these classes were provided with various opportunities to engage in music experiences that were designed to enhance their understanding of music teaching and bolster their music teaching self-efficacy. Teacher candidates were also given assignments and asked to participate in activities designed to increase their music teaching self-efficacy by enabling them to become more confident in their music knowledge and skills. These assignments included, but were not limited to, observations, peer teachings and practicum teachings.
Data were gathered from three primary sources: (a) Music Background Survey; (b) Music Teaching Self-Efficacy Questionnaire; and (c) focus groups. Secondary data sources included student comments from their practicum reflections and final course evaluations. The Music Background Survey (MBS) contained 25 items that provided a broad snapshot of various aspects of the musical beliefs and behaviors in the participants’ lives and therefore an overall profile of the participants’ musical development leading up to their college years. It was administered during the first week of class. The MBS began with questions about music in respondents’ lives currently, and then posed questions regarding their values and beliefs about music throughout their adolescent and elementary years, respectively. In other words, the survey ascertained information about participants’ musical background chronologically from their most recent to their least recent experiences in music.

The Music Teaching Self-Efficacy Questionnaire (MTSEQ) consisted of 35 items scored on an 11-point Likert-scale ranging in 10-unit intervals from 0% (no confidence) to 100% (complete confidence). The MTSEQ contained five subscales based on the goals and objectives for the four music microteachings, with one subscale pertaining to overall confidence to teach music. Participants answered the pre-MTSEQ during the first week of classes and the post-MTSEQ during the final week of their course. Participants also completed a self-efficacy measure prior to each microteaching during the middle weeks of the semester. Because the MTSEQ was organized by microteaching, each set of questions for this mid-measurement of self-efficacy was extracted from the MTSEQ. Therefore, participants reported their music teaching self-efficacy three times (i.e., pre, mid, post) during the semester. The tests for internal consistency reliability yielded $\alpha > .8$ for all MTSEQ scales.
Participants wrote comments for the open-ended sections on both the MBS and MTSEQ, and these were included in the narrative analysis. Additionally, focus group interviews targeted trends in music teaching self-efficacy and explore the sources of students’ perceived level of music teaching self-efficacy. All narrative data was transcribed and coded according to the sources of self-efficacy, microteaching, and music confidence and competence.

Using Bandura’s (1997) theoretical model of self-efficacy, this study (a) profiled changes in early childhood education majors’ efficacy beliefs for teaching music throughout a 15-week music methods course; and (b) examined the influence of enactive mastery experience, vicarious observations, verbal persuasion, and physiological and affective states on students’ perceived self-efficacy for teaching music.

Change in self-efficacy perception was answered quantitatively using the data obtained from participant scores on the MTSEQ. Narrative data gathered from focus group sessions, open-ended comments on the MBS and MTSEQ, and students’ reflective writing provided support and enriched the quantitative findings. Sources of music teaching self-efficacy were examined quantitatively using the MBS data as well as narratively, drawing on the data from focus group sessions and open-ended comments on the MBS and MTSEQ. Quantitative data was analyzed using the parametric ANOVA and paired sample t tests, as well as the non-parametric Wilcoxon matched-pairs signed ranks and Kruskal–Wallis tests. Narrative comments were presented to support quantitative findings regarding the microteachings, sources of self-efficacy, and confidence to teach music.

Discussion of the Findings

Few studies have examined the role of self-efficacy in the development of perceived confidence and competence among pre-service generalists to teach music, and those that have
been undertaken have focused largely on pre-service elementary classroom teachers rather than early childhood educators (Buckner, 2008; Kretchmer, 2002). The goal of this study was to investigate the impact of a music methods course on pre-service early childhood teachers’ confidence and competence to teach music. Specifically, the investigation sought to determine if there might be a significant change in the perceived self-efficacy of a group of early childhood pre-service teachers to teach music following the completion of four microteachings in an early childhood music methods course. This section elaborates on the findings for the two research questions followed by a discussion of the validity of the findings.

Changes in Music Teaching Self-Efficacy

The findings resulting from research inquiry one revealed a significant overall increase in participants’ reported music teaching self-efficacy perceptions over the 15-week music methods course. The overall means of music teaching self-efficacy scores increased at each administration of the MTSEQ. Significant differences were also found for each pairwise comparison of self-efficacy perception from pre- to mid-MTSEQ, mid- to post-MTSEQ, and pre- to post-MTSEQ. Participants’ response means for the pre-, mid- and post- MTSEQ are displayed along a continuum in Figure 6.1.

![Figure 6.1](image)

*Figure 6.1. Overall mean scores for the pre-, mid- and post-Music Teaching Self-Efficacy Questionnaire items, in which participants (N = 41) rated their self-efficacy perception from 0% (no confidence) to 100% (complete confidence).*
Pairwise comparisons of the microteaching subscales also revealed significant gains in music teaching self-efficacy scores for each pair (i.e., pre-mid, mid-post, pre-post) for the language arts embellishment, sound story big book, and rote song. Pairwise comparisons for the steady beat and rhythm icon subscale revealed significant differences for the mid- to post- and pre- to post- self-efficacy scores, but did not reveal significant gains from the pre- to mid-scores. Because the pre- to mid-scores for the steady beat and rhythm icon subscale were the only data to generate a non-significant finding, it warrants further explanation.

More than one third of participants (37%) actually reported lower music teaching self-efficacy scores on the rhythmic mid-items than what they reported for their pre-items. When asked to add a comment explaining their level of confidence on the pre-MTSEQ, many of these students talked about enjoying and listening to music and therefore attributed their perceived confidence to their enjoyment of listening to music, rather than to rhythmic behavioral objectives. Other students cited their experience in middle and high school band to explain their level of confidence on the rhythm pre-items, but the rhythms they taught for young children were iconic, rather than symbolic rhythms, which challenged some students. Finally, other students struggled with the movement/dance component of the steady beat portion of this microteaching, which they did not take into consideration until they fully understood the microteaching requirements (i.e., mid-MTSEQ). Taken together, the non-significant result between the pre- to mid-items for the steady and rhythm icon subscale may be attributed to students not fully understanding what was involved with the microteaching and thus reporting higher scores on the pre-items than on the mid-items.
Sources of Music Teaching Self-Efficacy

The findings resulting from research inquiry two revealed that mastery experiences, vicarious experiences, verbal feedback, and physiological and affective states were sources of perceived self-efficacy in this study. Data from the Music Background Survey (MBS) as well as narrative data from group interviews, open-ended questionnaire responses, and students’ reflective writing revealed the presence of all four sources. Consistent with Bandura’s argument that enactive mastery experience is the most influential source of self-efficacy beliefs, results revealed the paramount influence of applied experience on music teaching self-efficacy beliefs. Quantitative data from the MBS and MTSEQ, as well as narrative data support this conclusion. When the researcher categorized students’ comments regarding the four sources of self-efficacy, narrative comments regarding mastery experiences outnumbered comments about the other three sources combined almost two to one. Mastery experiences for this study included previous music experiences and opportunities to teach music independently (i.e., peer teaching and practicum teaching).

Prior music experience was significantly correlated to perceived music teaching self-efficacy at the beginning of the semester. The students with the lowest amount of experience reported lower self-efficacy scores, while students with a high number of previous experiences reported higher scores. In addition, the music methods course investigated in this study was application based, so students applied the knowledge they gained from course activities, discussions and assignments to independently teach music micro-lessons. The practicum experience of teaching their music lessons to young children greatly impacted participants’ confidence to teach music, as evidenced by the frequency count of students’ comments.
Students’ physiological and affective state was also a source of music teaching self-efficacy in this study. Even though stress and fatigue was reported, these feelings resulted from the participants juggling their hectic schedules, as they tried to balance college, work, family, and extracurricular activities. Participants did not perceive these feelings to impact their confidence to teach music. Music anxiety, on the other hand, was the second most highly reported source of participants’ negative perceptions to teach music. Music anxiety surfaced as a result of performing musical skills (e.g., singing, playing instruments) as well as teaching music micro-lessons to peers.

Singing in front of others elicited strong feelings of anxiety among many participants. However, the participants who were nervous about singing alone in front of others reported nervousness and anxiety only when they were singing in front of their peers and other adults; they did not report feelings of nervousness or anxiety about singing for children. Even though participants sang in every class throughout the semester and taught a song to both their peers and to children, many participants still reported feelings of nervousness or anxiety about singing in front of others at the end of the course.

Vicarious experience as a source of music teaching self-efficacy included participants’ observations of both a music specialist and their peers, but they more often recalled the benefit of observing the elementary music specialist. The most valuable observations for the pre-service teachers were the participatory observations in which the participants interacted with the elementary students in their music class. The interesting facet of these participatory observations is that it blurred the line between mastery and vicarious experience. The pre-service teachers participated in music class with young children and experienced and learned from the activities
just as the children learned, but they simultaneously observed the music specialist in action in an effort to gain more knowledge about teaching music.

Verbal persuasion was an evident, yet limited, source of music teaching self-efficacy in this study. Even though feedback from both the course instructor and the children in their practicum setting surfaced as verbal persuasion, the most powerful example of verbal persuasion was the feedback that participants received from the children they taught for their music practicum. Participants fondly recounted stories of their children requesting to repeat an activity that they had learned in a music practicum session, or when the children would excitedly ask participants when they were having music time again.

Validity of the Findings

The validity of these findings rests on evidence that was obtained through two primary methods of data collection: (a) questionnaire items rooted in self-efficacy theory; and (b) focus group interviews. The use of these complementary methods is advantageous in exploratory research such as this because it helps to overcome the external validity limitations of confirmatory research, in which results must be compared to other pre-existing direct measures.

The findings of the study therefore have greater ecological validity than experimental designs that would isolate particular outcomes or investigate the effects of particular treatments. Furthermore, while experimental designs provide greater control over factors of interest and in some cases allow for more accuracy and precision, the research questions posed by this study necessitated understanding the breadth of outcomes exhibited by the sample without the selection of groups. While experimental designs may be suited to some of the research questions raised by this agenda, this study has laid a foundation for self-efficacy research in music teacher education for early childhood educators.
Implications for Practice

It is evident that early childhood educators exert a considerable impact on the lives of children, from birth through eight years of age. At the same time, many educational institutions across the United States may continue to face budget reductions that impact educational programs, particularly in the arts. Eliminating, reducing and re-channeling financial resources spent for fine arts instruction ranks high among the first targets to ease or redirect budgets for educational institutions. This predicament may necessitate that generalists teach or supplement music instruction, despite having limited or no training in music.

The findings of this study suggest that a one-semester college music methods course can boost early childhood pre-service teachers’ confidence and competence to teach music to young children. This study supports the findings of other studies which advocate applied activities, such as singing, listening, moving, and integrating music with other subjects, as a primary curricular focus when training generalists (Bresler, 1993; Gifford, 1993; Propst, 1993; Saunders & Baker, 1991; Temmerman, 1997). By structuring mastery experiences in which pre-service generalists encounter music and gain practical experience in teaching music to young children, generalists increase their self-efficacy to teach music to young children and recognize the benefits of including music as a total part of their curriculum. As one participant explains in her practicum reflection, “I never would have thought I could have learned all this in one semester, but it has definitely been a life-changing experience, and I know that I will be teaching music again.”

Enhancing self-efficacy is the first step in helping generalists to develop the right blend of skills, knowledge and understandings necessary to teach music (Kretchmer, 2002; Buckner, 2008). This study supports the importance of practicum experience as a necessary component of an experiential music methods course for generalists, a practicum that offers pre-service teachers
multiple opportunities to both observe in-service music specialists and teach music lessons to children. Teacher education literature substantiates the need for field experience in pre-service teacher training (Ben-Peretz, 1995; McDonnough & Matkins, 2010; Tang, 2003; Zeichner, 2002). Furthermore, performance of tasks during the field experience allows pre-service teachers to have practical personal experience that contributes to the development of self-efficacy (Bleicher, 2007).

Bandura’s (1986) emphasis that enactive attainment is the most influential source of self-efficacy information has important implications for the self-enhancement model of academic achievement which contends that, to increase achievement, educational efforts should focus on raising students’ feelings of self-worth or of competence. This is usually accomplished through programs that emphasize building self-beliefs through verbal persuasion methods (Pajares, 1996). Social cognitive theory shifts that emphasis and focuses on a joint effort to raise competence and confidence primarily through successful experience with the performance at hand, through authentic mastery experiences. Interventions could be designed accordingly.

Teachers of music methods courses are challenged with not only delivering the music teaching methods, but also improving teacher candidates’ negative attitudes and anxiety toward music, and more often than not, teaching musical concepts. Music teacher educators can structure curricula for music methods courses that focus on both music content and music encounter (Swanick & Tillman, 1986; Swanick, 1988). Music experience and involvement are more likely to result in intrinsic motivation, and are therefore central to both teaching and learning. Swanick (1988) explained this further.

Above all, music is a social art, where playing and listening to others is the motivation, the experience and the learning process. This is music education by
encounter. Music is not dissected into little bits for the purpose of practice or analysis, but presented and taken as a whole in a total social context. (p. 95)

Given the music background of the teachers and the time constraints of a one-semester course, training pre-service generalists to become highly skilled musicians is just not possible. Generalists should never be expected to replace music specialists in providing the depth and consistency needed to provide students with a properly sequenced and balanced music education. For that reason it is important that teachers of music methods courses for generalists strive to: (a) structure opportunities for pre-service teachers to encounter meaningful music-making experiences; (b) provide mastery experiences in teaching music to children to help build their music competence and confidence; and (c) place realistic expectations upon generalists with the understanding that their instruction of music is educationally worthwhile, even though it may not be as deep or musically valid as what a specialist teacher can offer.

The four sources of self-efficacy also have implications for practice. Music teacher educators are faced with the challenge of designing courses that provide opportunities for pre-service teachers to develop not only their skills, but in so doing, their motivation to teach music was structured around the following: (a) vicarious experience (i.e., modeling and observation); (b) physiological states (i.e., sense of enjoyment and positive feelings when doing music); (c) mastery experiences (i.e., teaching music to children); and (d) verbal persuasion (i.e., encouragement and specific praise). Music teacher educators could not only use the sources of self-efficacy as a framework for developing the most important goals of a one-semester course, but also plan classroom experiences where peers can strengthen their colleagues’ skills in a similar way.
Music Curriculum for Pre-Service Generalists

Building in part on the research of Jeanneret (1994; 1997) who explored pre-service generalists’ confidence to teach music (see Chapters 2 and 4), this study has investigated pre-service early childhood educators’ confidence and confidence to teach music through the construct of self-efficacy theory (Bandura, 1977; 1997). Jeanneret’s (1997) model is presented in Figure 6.2.

![Figure 6.2. Music curriculum model for pre-service primary teachers (Jeanneret, 1997).](image)

Revised Music Curriculum for Pre-Service generalists

The findings of this study support Jeanneret’s model. Curriculum, teaching strategies and competencies are necessary components of a music curriculum leading to increased confidence. Given the results of this study, a fourth component might be added to Jeanneret’s music curriculum for pre-service generalists. Frequency counts of students’ narrative comments regarded practicum experience as the most important and influential in boosting their perceived confidence to teach music.

Jeanneret’s model also cites the importance of the “instructor as model” for each component of the music curriculum. The findings of this study suggest that a college course instructor serves as the primary model for each aspect of the curriculum. However, this study also revealed the importance of the elementary music specialist as an effective model for generalists. Students regularly spoke of the benefit of observing the music specialist in arming them with both ideas and confidence, not only to teach music, but also to be an overall effective teacher. Figure 6.3 presents a revised music curriculum model for pre-service early childhood teachers.
Figure 6.3. Revised music curriculum model for pre-service early childhood educators.

Recommendations for Further Research

The results of this study demonstrate that the pre-service early childhood teachers at the institution where the study took place developed a higher music teaching self-efficacy as the semester progressed. However, this is the only music methods course required for their degree, and it would be difficult to conclude whether this increase in confidence was short or long term. It is the hope of the researcher that, because these teachers finished the semester with relatively high feelings of confidence to teach music, they will carry that degree of self-efficacy to teach music into their student teaching placements and subsequently, their first job as an in-service
teacher. Self-efficacy researchers would benefit from more long term studies to see how pre-service teachers’ self-efficacy translates into their classroom when they enter the workforce. A longitudinal study would help determine areas in which music teaching self-efficacy is stifled, constant or promoted. From this determination, a deeper analysis as to what makes these trends occur might be obtained and subsequently used as the basis for reforming future music teacher education programs.

Teachers with a higher teaching self-efficacy tend to possess a higher level of satisfaction with their support and preparation during their pre-service training (Woolfolk Hoy, & Burke Spero, 2005). If pre-service teachers develop a higher teaching self-efficacy as their training progresses, it is likely that they will carry that into the classroom and feel more confident and competent to teach. Likewise, the more they teach and the more confident and competent they feel about doing so will lead to increases in self-efficacy. One of the thorniest problems to confront the study of self-efficacy is that of causality and direction of causality. For example, does self-efficacy drive the motivation to want to develop skill, or does developing skill and competence increase self-efficacy? This chicken-or-egg question has been an important focus of much self-efficacy research (Pajares, 1996). Because of the reciprocal nature of human motivation and behavior, it is unlikely that such a question can be resolved.

Bandura’s (1986) explanation is his theory of triadic reciprocity, where behavior, personal influences, and environment interact with and affect one another. Self-efficacy perception fits into the triadic reciprocity model as a personal factor. Competence beliefs affect behavior by influencing a person’s task choice, effort, and determination. At the same time, behavior reciprocally affects an individual’s perception of self-efficacy, because success or
failure on a particular task will lead a person to develop certain beliefs, attitudes, or cognitive strategies regarding future behavior.

It is possible, however, to develop better understandings of the conditions under which self-efficacy beliefs operate as causal factors—through their influence on choice, effort, and persistence—in human functioning. In keeping with the hypothesized sources of efficacy information, beliefs can be altered using vicarious methods, verbal persuasions, differing performance feedback, social comparison information, and/or manipulating task complexity. The now typical procedure of testing multivariate relationships between self-efficacy, other motivation constructs, and performance attainments in causal models is an improvement over less complex analyses, but providing insights regarding the causal influence of self-efficacy will require that these procedures be conducted on longitudinal or repeated measures designs.

For music teacher educators, a lower teaching self-efficacy score may be of concern as pre-service generalists enter the classroom. In this sample, two students’ perceived music teaching self-efficacy was well below the sample mean at the end of the course. Even though their perceived self-efficacy scores increased from the beginning of the semester to the end of the semester (i.e., 40 to 59; 32 to 60), they did not feel overly confident to teach music. These students reported a low number of music experiences prior to the course and demonstrated an overall lack of confidence in general. By the end of the semester, these two students were questioning whether or not they were capable of becoming teachers, as they did not feel confident about any of their methods courses. Sources for this finding included the MBS and narrative comments from group interviews and reflective writings.

If lower scores in perceived self-efficacy are difficult to increase, then pre-service generalists might enter into the workforce with lower music teaching self-efficacy. Teachers who
have low self-efficacy are more prone to hold negative feelings about their teaching, have a
narrow perspective on problem-solving, and believe their situation is more challenging than it
truly is. Each of these negative feelings fosters stress and increases teacher burnout (Pajares,
1996). Ways to improve low self-efficacy for pre-service teachers is an area that needs to be
examined in future research. The results of this study revealed that an experiential music
methods course, in which pre-service teachers observed music specialists and taught music to
children in a practicum setting contributed to an increase in their perceived self-efficacy to teach
music. Future research might seek to conduct studies similar to this one in other universities to
determine if the results can be replicated.

Additional recommendations for future research in this area arise from limitations of this
study. The sample for this study was 41 females at only one university. Overcoming this
limitation in ways that might generalize to a wider population would require sampling from
university music methods courses for generalists more widely across the United States. Choosing
college classrooms via stratified sampling could investigate the music teaching self-efficacy of
pre-service generalists in regard to college characteristics, such as college ranking, location, and
student acceptance criteria. As a teacher–researcher using action research in a single site, this
study is not intended to have great implications for curriculum reform at the systemic level.
However, this exploratory study has paved the way for future research to study the role of self-
efficacy theory in music training for generalists. Issues to be clarified and addressed in future
research include the following: (a) effects of peer teaching and practicum teaching as sources of
self-efficacy; (b) active versus passive roles in observing music specialists; and (c) generalists’
music anxiety as compared with anxiety in other academic areas.
Conclusion

This research has enhanced the small base of music teaching self-efficacy research by building upon previous studies through an approach that focused on the sources of self-efficacy. This chapter has also offered implications and strategies to assist music teacher educators in planning and teaching a music methods course in which pre-service generalists can develop and increase music teaching self-efficacy perceptions. Pre-service generalists often come to a college music methods course with very little practical and theoretical background in music, and they are only provided with a very short learning experience in which to develop some skill. Findings of this research suggest that it is possible to boost pre-service early childhood teachers’ confidence and competence to teach music over a single semester of study. In this sense, the results of the study demonstrate how important it is for pre-service generalists to develop the will (i.e., self-efficacy) and the skill (i.e., competence) to teach music if they are to develop the competencies needed to provide adequate music opportunities for their future students.

A music curriculum for pre-service early childhood educators should provide opportunities for teacher trainees to develop not only their skills, but in so doing, their motivation to teach music. The curriculum could be structured to include the following components: (a) a balance of music instruction and music encounter; (b) teaching strategies that engage students in musical participation; (c) competencies in both doing music and teaching music; and (d) practicum settings in which pre-service teachers gain hands-on experience teaching music to children. Taken together, these components may help raise students’ perceived self-efficacy to teach music. Each of these components highlights the importance of practical, hands-on experience in building the confidence to teach music. Music experience and
involvement are more likely to result in intrinsic motivation, and are therefore central to both teaching and learning.

Self efficacy theory served as the basis of this study. Given that training generalists to teach music is such a daunting task for a one-semester university methods course, the results of this study indicate that self-efficacy theory could be used a possible way of framing future research. Utilizing self-efficacy theory to ground future research in music teacher education could allow for more meaningful conclusions on how best to train generalists to teach music.
REFERENCES


APPENDIX A: INFORMATION AND CONSENT FORMS

Dear Student,

We are from the School of Music at the University of Illinois at Urbana-Campaign and would like to include you, along with your peers, in a research project that will collect information about your participation in MUED 4670, Music for the Young Child. You will be asked to complete questionnaires that ask about music and teaching. You may also be asked to participate in an audio-taped focus group interview at the end of the semester in order to expand upon your questionnaire responses. The information you supply will help us understand more clearly how pre-service teachers form beliefs about teaching music.

We anticipate that approximately 50 pre-service early childhood educators will participate. The initial questionnaire will be administered during regular class time at the beginning of the semester. You will be asked to check a response for each item that indicates how you feel about music and your musical experiences, and to give a brief comment for each response. The final questionnaire will be administered during regular class time at the end of the semester. The questionnaires are a part of the regular course requirements, regardless of whether or not you consent to participate in this study. However, we will only use your responses as research data if you give your consent.

Your participation in this project is completely voluntary. Only those students who want to participate will do so. Every student will return the attached form, whether or not you choose to participate. Please initial next to either “accept” or “decline” for both sections. You will be free to withdraw your participation in this study at any time and for any reason without penalty.

We are confident that the time you spend participating in the study will be productive and rewarding. You will be encouraged to self-reflect in a way that may boost your understanding of how to become a better teacher. It will also make a significant contribution to the field of music education by identifying the most appropriate methods and approaches for university training programs.

We expect that there will be no risks to participating in this study beyond those that exist in a typical methods course. Your decision to participate or not, or to stop at any time, will not affect your standing in MUED 4670. The information obtained during the research project will be kept strictly confidential. Any sharing or publication of the research results will not identify any of the participants by name. This project has received approval from the Institutional Review Board (IRB) at the University of Illinois. For information about research participants’ rights, feel free to call the IRB Office collect at 217-333-2670 or irb@uiuc.edu. You are welcome to call collect if you identify yourself as a research participant. If you have any questions or would like to discuss this research, please contact us using the information below.

Sincerely,

Professor Gary McPherson
Phone: (217) 333-8381
Email: gem@illinois.edu

Jennifer Vannatta-Hall
Phone: (615) 542-4611
Email: vannatta@bellsouth.net
Student Consent Form
“Student Self-Reflection during MUED 4670,
Music for the Young Child”

All students will turn in this form, whether or not you opt to participate. Please initial either “accept” or “decline” for each of the two activities described below, and then sign and date the bottom of the page. Please also choose an 8-character identifier that you will use in place of your name when you answer the two in-class questionnaires. You may keep the extra copy of this document for your records.

I have read and understand the contents of this form, and I voluntary agree to participate in this project by allowing the researchers to use information from my questionnaires and reflective papers. I realize the questionnaires and reflections are a regular requirement for the course regardless of whether or not I participate in the study. I understand that the results of the study will be disseminated among music education professionals in publications and conference presentations, and that all names and place references will be changed so that my identity will remain confidential. I also understand that I may withdraw my participation at any time.

Student: Initial either “accept” or “decline” below:

______Accept

______Decline

I grant my permission for the researchers to audiotape focus group interviews with me and to use portions of those interviews in publications and at professional conferences. I understand that all names and place references will be changed to ensure that my identity remains confidential. I recognize that I am not required to respond to any question that I choose not to answer. I also understand that I can withdraw authorization at any time by providing both researchers with written notification.

Student: Initial either “accept” or “decline” below:

______Accept

______Decline

________________________________  __________
(Print) Student Name  8-character identifier

________________________________  __________
Student Signature  Date
APPENDIX B: QUESTIONNAIRE PACKET

MUSIC BACKGROUND SURVEY

MUSIC TEACHING SELF-EFFICACY QUESTIONNAIRE
**Music Background Survey**

You have created a unique 8-character code. This code ensures that you do not have to enter your name or personally identifying information on the Internet. Your instructor will use the code to identify you.

Please enter your 8-character code here.

________________________________

Thanks! You’re ready to begin.

Depending on your answers, completing the survey will take up to 20 minutes.

When you’re ready to begin, click ‘Continue.’

**Your music profile**

First, we would like to know about your current musical habits in order to more fully understand your unique musical profile.

---

1. How many days per week do you listen to music?

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<th>7</th>
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</tbody>
</table>

2. How often do you listen to music in the following situations?

<table>
<thead>
<tr>
<th>Situation</th>
<th>Never</th>
<th>All the time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Privately at home</td>
<td></td>
<td></td>
</tr>
<tr>
<td>At home with others</td>
<td></td>
<td></td>
</tr>
<tr>
<td>With friends</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Going to sleep</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relaxing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exercising or at the gym</td>
<td></td>
<td></td>
</tr>
<tr>
<td>While traveling (to school, work, etc.)</td>
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<tr>
<td>While studying</td>
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<td></td>
</tr>
<tr>
<td>While working</td>
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</table>
3. How frequently do you sing?

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<th>Never</th>
<th>All the time</th>
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<tr>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

4. How often do you sing in the following situations?

<table>
<thead>
<tr>
<th>Situation</th>
<th>Never</th>
<th>All the time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Privately at home</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>At home with others</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>With friends</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>In front of others</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>With a recording</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

**The role of music**

The next few questions address the role of music in your life, whether you just listen to music in the car, sing in the shower, or perform with a band, choir, or orchestra.

5. How important is music in your life?

<table>
<thead>
<tr>
<th>Not important</th>
<th>Very important</th>
</tr>
</thead>
<tbody>
<tr>
<td>□</td>
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<td>□</td>
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</tbody>
</table>

Some things are **useful**, that is, they help you to be able to do other things in life. For example, learning about plants might help you grow a garden.

6. For you, how **useful** is music?

<table>
<thead>
<tr>
<th>Not useful</th>
<th>Very useful</th>
</tr>
</thead>
<tbody>
<tr>
<td>□</td>
<td>□</td>
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</tr>
</tbody>
</table>

7. For you, how **difficult** is music?

<table>
<thead>
<tr>
<th>Very easy</th>
<th>Very difficult</th>
</tr>
</thead>
<tbody>
<tr>
<td>□</td>
<td>□</td>
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<tr>
<td>□</td>
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<tr>
<td>□</td>
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</tr>
</tbody>
</table>
8. How enjoyable (fun) are music activities for you?

Not enjoyable

Not very enjoyable

Not enjoyable

Enjoyable

Very enjoyable

9. I believe music talent is:

Environmental (can be learned)

Innate (born with it)

Music activities as an adolescent

Look back on your adolescence (age 12 to now) and think about your music activities. We are interested in all of the activities you did, whether you were in a rock band, the school orchestra, a church choir, or if you learned an instrument just on your own. This could include activities in school or outside of school time.

You may have been involved in different musical activities at different times throughout your adolescence. If this is the case, think about the 12 months when you were most musically active and answer the following questions about that year.

10. Did you do any music activities as an adolescent besides music class at school? (They could have been in school or out-of-school activities, like playing guitar, musical theater, orchestra or band, a rock group, church choir, etc.)

☐ Yes

☐ No

11. Which music activities, in OR out of school, were you involved in during your adolescence?

☐ School band (concert band) or orchestra

☐ School choir

☐ Stage or jazz band at school

☐ Stage or jazz band outside of school

☐ Rock or pop band/group at school

☐ Rock or pop band/group outside school

☐ Community band or orchestra

☐ Community choir

☐ Church band

☐ Church choir

☐ Private lessons on primary instrument (including voice)

☐ Musicals
The next set of questions pertains to your music activities, both in school and out of school, during your high school years.

12. How important was your musical involvement throughout your high school years?

13. How useful was your musical involvement throughout your high school years?

14. How interesting was your musical involvement throughout your high school years?

15. How difficult were your music activities during your high school years?

16. How enjoyable (fun) were your music activities during your high school years?
17. How *competent* did you feel when doing music during your high school years?

Not competent

![☐ ☐ ☐ ☐ ☐ ☐]

Very competent

![☐ ☐ ☐ ☐ ☐ ☐]

18. How *confident* did you feel when doing music during your high school years?

Not confident

![☐ ☐ ☐ ☐ ☐ ☐]

Very confident

![☐ ☐ ☐ ☐ ☐ ☐]

**Music compared to other activities and school subjects**

We would like to know how important music was compared to other significant activities you were involved in as an adolescent. You will also compare music to other school subjects.

19. List all of your activities (up to 7) in order of importance, with 1 as the most important and 7 as the least important. Only include structured activities (i.e. things you do with other people specifically for the sake of the activity), not unstructured activities like hanging out with friends, or passive leisure activities.

Examples:


E) 1. Playing guitar in a band with people I met at school, 2. Student council, 3. Church choir

F) 1. School newspaper, 2. School band

1. 

2. 

3. 

4. 

5. 

6. 

7. 


You have answered the following questions before, for you music activities during adolescence. This time, answer the questions, but in relation to other school subjects

20. Compared to other school subjects, how *important* were the music experiences you had during your high school years to you?

<table>
<thead>
<tr>
<th>Not important</th>
<th>Very important</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

21. Compared to other school subjects, how *useful* were your music experiences during your years at high school for your life?

<table>
<thead>
<tr>
<th>Not useful</th>
<th>Very useful</th>
</tr>
</thead>
<tbody>
<tr>
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</table>

22. Compared to other school subjects, how *interesting* were your high school music activities?

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<thead>
<tr>
<th>Very boring</th>
<th>Very interesting</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

23. Compared to academic school subjects, how *difficult* were your high school music activities?

<table>
<thead>
<tr>
<th>Very easy</th>
<th>Very difficult</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

24. Compared to academic school subjects, how *enjoyable* (fun) were your music activities?

<table>
<thead>
<tr>
<th>Not enjoyable</th>
<th>Very enjoyable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

202
**Music activities in early childhood and elementary school**

Look back on your early childhood (birth to age 11) and think about your music experiences. We are interested in all of the activities you did, including activities in school and outside of school time.

25. Describe the earliest experience you can recall of being involved in a musical activity.

26. How *important* was your musical involvement throughout your elementary years?

<table>
<thead>
<tr>
<th>Not important</th>
<th>Very important</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

Some things are *useful*, that is, they help you to be able to do other things in life. For example, learning about plants might help you grow a garden.

27. How *useful* were your musical experiences during your elementary years?

<table>
<thead>
<tr>
<th>Not useful</th>
<th>Very useful</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

28. How *interesting* were your music experience during your elementary years?

<table>
<thead>
<tr>
<th>Very boring</th>
<th>Very interesting</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

29. How *enjoyable* (fun) were your music experiences during your elementary years?

<table>
<thead>
<tr>
<th>Not enjoyable</th>
<th>Very enjoyable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

30. Overall, my background has made me feel __________________ about teaching music.

<table>
<thead>
<tr>
<th>Not confident</th>
<th>Very confident</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
31. List your three most important prior musical experiences that have most influenced your current level of confidence to teach music.

Thank you for taking time to complete this survey.
**Music Teaching Self-Efficacy Questionnaire**

You have created a unique 8-character code. This code ensures that you do not have to enter your name or personally identifying information on the Internet. Your instructor will use the code to identify you.

Please enter your 8-character code here.

____________________________________________________________________

Thanks! You’re ready to begin.

Depending on your answers, completing the survey will take up to 10 minutes.

When you’re ready to begin, click ‘Continue.’

In the following questions, please check the percentage that best represents how confident you are that you can perform the musical skills as of now. For example, if you are completely confident that you can perform a skill correctly, then check 100%. If you have no confidence that you can perform a skill, check 0%. If your confidence lies somewhere in between, please check the percentage that matches your confidence.

*Practice Rating: To familiarize you with the rating scale for the questionnaire, please complete these practice items first.*

**Rate your percentage of confidence RIGHT NOW that you can lift:**

- 10 pounds
  - 0%
  - 10%
  - 20%
  - 30%
  - 40%
  - 50%
  - 60%
  - 70%
  - 80%
  - 90%
  - 100%

- 150 pounds
  - 0%
  - 10%
  - 20%
  - 30%
  - 40%
  - 50%
  - 60%
  - 70%
  - 80%
  - 90%
  - 100%

*Language Arts Embellishment*

How confident are you RIGHT NOW in your ability to:

**1. Play a classroom instrument**

- 0%
- 10%
- 20%
- 30%
- 40%
- 50%
- 60%
- 70%
- 80%
- 90%
- 100%
2. Use instruments to support teaching and learning language arts

3. Keep a steady beat while reading a rhyming poem

4. Create sound effects for a poem

5. Teach children to play classroom instruments

6. Distinguish between different sound qualities

7. Add a comment that will help me understand your level of confidence to teach young children to play instruments.

**Sound Story Big Book**

How confident are you RIGHT NOW in your ability to:

8. Explore your own voice

9. Create vocal sound effects for a nursery rhyme

10. Teach children to explore their voices

11. Use the voice to support teaching and learning language arts

**Steady Beat and Rhythm Icon Cards**

How confident are you RIGHT NOW in your ability to:

12. Move/dance to music

13. Keep a steady beat

14. Create movements to the steady beat of a song
15. Teach children how to keep a steady beat

16. Identify the tempo of a song

17. Listen to music critically and communicate these experiences with others

18. Teach children the concept of fast and slow

19. Read simple rhythms with quarter and eighth notes and quarter rests

20. Create iconic rhythm flash cards

21. Teach children to read iconic rhythms

22. Teach children the concept of short and long

23. Lead children in movement activities

24. Teach children to actively listen to music

25. Foster children’s personal, creative expression through music

26. Add a comment that will help me understand your level of confidence to teach young children to listen to music.

Song Story Book and Teach a Rote Song

How confident are you RIGHT NOW in your ability to:

27. Sing in private

28. Sing with a group

29. Sing in front of peers

30. Sing with a recording
31. Learn new songs
☐0%  ☐10%  ☐20%  ☐30%  ☐40%  ☐50%  ☐60%  ☐70%  ☐80%  ☐90%  ☐100%

32. Teach children the concept of high and low
☐0%  ☐10%  ☐20%  ☐30%  ☐40%  ☐50%  ☐60%  ☐70%  ☐80%  ☐90%  ☐100%

33. Teach a new song using a recording
☐0%  ☐10%  ☐20%  ☐30%  ☐40%  ☐50%  ☐60%  ☐70%  ☐80%  ☐90%  ☐100%

34. Locate appropriate resources for preparing music activities
☐0%  ☐10%  ☐20%  ☐30%  ☐40%  ☐50%  ☐60%  ☐70%  ☐80%  ☐90%  ☐100%

35. Chant a poem or rhyme to a steady beat
☐0%  ☐10%  ☐20%  ☐30%  ☐40%  ☐50%  ☐60%  ☐70%  ☐80%  ☐90%  ☐100%

36. Teach a new song by myself (without a recording)
☐0%  ☐10%  ☐20%  ☐30%  ☐40%  ☐50%  ☐60%  ☐70%  ☐80%  ☐90%  ☐100%

37. Add a comment that will help me understand your level of confidence to teach young children to sing.

38. Deliver developmentally appropriate music instruction
☐0%  ☐10%  ☐20%  ☐30%  ☐40%  ☐50%  ☐60%  ☐70%  ☐80%  ☐90%  ☐100%

39. Promote music as an integral element in children’s lives
☐0%  ☐10%  ☐20%  ☐30%  ☐40%  ☐50%  ☐60%  ☐70%  ☐80%  ☐90%  ☐100%

40. Incorporate many styles of music into instruction
☐0%  ☐10%  ☐20%  ☐30%  ☐40%  ☐50%  ☐60%  ☐70%  ☐80%  ☐90%  ☐100%

41. Use music to support teaching and learning of other curricular subjects
☐0%  ☐10%  ☐20%  ☐30%  ☐40%  ☐50%  ☐60%  ☐70%  ☐80%  ☐90%  ☐100%

42. Continue improving and developing my own musical skills
☐0%  ☐10%  ☐20%  ☐30%  ☐40%  ☐50%  ☐60%  ☐70%  ☐80%  ☐90%  ☐100%

43. Rank the subjects in order so that your first choice (1) is the subject you feel most confident to teach and your last choice (7) is the subject you feel least confident to teach.

☐ Language & literacy  ☐ Music  ☐ Art  ☐ Math  ☐ Science  ☐ Physical education  ☐ Social studies
Thank you for taking time to complete this questionnaire.
APPENDIX C: GROUP INTERVIEW PROTOCOL

To be administered after the completion of the course:

1. Let’s start with your insights upon reflection of the entire semester. Talk about your individual growth – some of the things you learned from taking this course.
2. Are there any other things, perhaps not related to teaching and learning that you have learned from taking the class?
3. What do you like best about yourself as a teacher?
4. Describe your favorite peer teaching experience. Describe a favorite teaching experience that you’ve had with your group of children.
5. Describe a negative teaching experience that you’ve had in any one of your teaching contexts.
6. Do you feel confident in your ability to teach music to young children? Why or why not?

Additional information will be sought according to the following sources of self-efficacy theory:

A. Enactive Mastery Experience
   1. Past music experiences
   2. Past teaching experiences
B. Vicarious Experience
   1. Observations of instructor
   2. Observation of peer performance
   3. Group assignments
C. Verbal Persuasion
   1. Praise, criticism, or feedback received by the student
   2. Positive or negative self-talk
D. Physiological and Affective States
   1. Fatigue, stress, nervousness, excitement, etc., in relation to the peer teachings

Conclude interview with a question explicitly targeting sources of self-efficacy in music (e.g., “What could make you feel more confident about yourself in music?”) This question prompts students to state, emphasize, or reiterate what they believe is the source of their confidence.
### APPENDIX D: RELIABILITY STATISTICS TABLES

#### Pre-MTSEQ Language Arts Embellishment

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Scale Mean if Item Deleted</th>
<th>Scale Variance if Item Deleted</th>
<th>Corrected Item-Total Correlation</th>
<th>Squared Multiple Correlation</th>
<th>Cronbach's Alpha if Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Play a classroom instrument</td>
<td>337.07</td>
<td>12296.22</td>
<td>.78</td>
<td>.82</td>
<td>.88</td>
</tr>
<tr>
<td>Use instruments to support teaching and learning</td>
<td>340.24</td>
<td>12187.44</td>
<td>.87</td>
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<td>.86</td>
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<tr>
<td>language arts</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Keep a steady beat while reading a rhyming poem</td>
<td>321.71</td>
<td>15629.51</td>
<td>.58</td>
<td>.48</td>
<td>.90</td>
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<tr>
<td>Create sound effects for a poem</td>
<td>326.10</td>
<td>15509.39</td>
<td>.58</td>
<td>.41</td>
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<tr>
<td>Teach children to play classroom instruments</td>
<td>350.00</td>
<td>12015.00</td>
<td>.87</td>
<td>.79</td>
<td>.86</td>
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<tr>
<td>Distinguish between different sound qualities</td>
<td>346.83</td>
<td>13082.20</td>
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Cronbach’s alpha = .90

#### Mid-MTSEQ Language Arts Embellishment

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<td></td>
<td></td>
</tr>
<tr>
<td>Keep a steady beat while reading a rhyming poem</td>
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<td>6092.05</td>
<td>.68</td>
<td>.48</td>
<td>.89</td>
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<td>Create sound effects for a poem</td>
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### Post-MTSEQ Language Arts Embellishment

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<th>Squared Multiple Correlation</th>
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<tr>
<td>Play a classroom instrument</td>
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### Pre-MTSEQ Sound Story Big Book

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<th>Squared Multiple Correlation</th>
<th>Cronbach's Alpha if Item Deleted</th>
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</thead>
<tbody>
<tr>
<td>Explore your own voice (high, low, making different sounds)</td>
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<td>6150.49</td>
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<td>.90</td>
<td>.94</td>
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<td>.94</td>
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Cronbach’s alpha = .96

### Mid-MTSEQ Sound Story Big Book

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<th>Squared Multiple Correlation</th>
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<td>2709.39</td>
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<tr>
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<th>Squared Multiple Correlation</th>
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<tbody>
<tr>
<td>Move/dance to music</td>
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<td>.92</td>
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<tr>
<td>Keep a steady beat</td>
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<td>Teach children how to keep a steady beat</td>
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<td>34890.49</td>
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<td>.90</td>
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<tr>
<td>Identify the tempo of a song</td>
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<td>.90</td>
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<tr>
<td>Read simple rhythms with quarter and eighth notes and quarter rests</td>
<td>715.85</td>
<td>32094.88</td>
<td>.62</td>
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<td>.91</td>
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<tr>
<td>Create iconic rhythm flash cards</td>
<td>708.54</td>
<td>31652.80</td>
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<td>.91</td>
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<tr>
<td>Teach children to read iconic rhythms</td>
<td>711.71</td>
<td>31894.51</td>
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<td>.95</td>
<td>.90</td>
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<tr>
<td>Teach children the concept of short and long</td>
<td>692.68</td>
<td>33510.12</td>
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<tr>
<td>Lead children in movement activities</td>
<td>674.88</td>
<td>36140.61</td>
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Cronbach’s alpha = .92
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<tr>
<th>Move/dance to music</th>
<th>Scale Mean if Item Deleted</th>
<th>Scale Variance if Item Deleted</th>
<th>Corrected Item Total Correlation</th>
<th>Squared Multiple Correlation</th>
<th>Cronbach's Alpha if Item Deleted</th>
</tr>
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<tbody>
<tr>
<td>Keep a steady beat</td>
<td>743.95</td>
<td>34256.97</td>
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<td>0.94</td>
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<tr>
<td>Create movements to the steady beat of a song</td>
<td>746.05</td>
<td>34516.43</td>
<td>0.73</td>
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<td>0.94</td>
</tr>
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<td>33579.23</td>
<td>0.82</td>
<td>0.88</td>
<td>0.94</td>
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<td>Identify the tempo of a song</td>
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<td>32834.78</td>
<td>0.87</td>
<td>0.90</td>
<td>0.93</td>
</tr>
<tr>
<td>Teach children the concept of fast and slow</td>
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<td>35339.12</td>
<td>0.83</td>
<td>0.90</td>
<td>0.94</td>
</tr>
<tr>
<td>Read simple rhythms with quarter and eighth notes and quarter rests</td>
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<td>35848.15</td>
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<td>36035.06</td>
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Cronbach’s alpha = .94

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<th>Move/dance to music</th>
<th>Scale Mean if Item Deleted</th>
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<th>Corrected Item Total Correlation</th>
<th>Squared Multiple Correlation</th>
<th>Cronbach's Alpha if Item Deleted</th>
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<tr>
<td>Keep a steady beat</td>
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<td>6944.88</td>
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<td>Identify the tempo of a song</td>
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<td>Read simple rhythms with quarter and eighth notes and quarter rests</td>
<td>925.12</td>
<td>7520.61</td>
<td>0.87</td>
<td>0.89</td>
<td>0.88</td>
</tr>
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<td>Create iconic rhythm flash cards</td>
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<td>Teach children to read iconic rhythms</td>
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<td>8621.10</td>
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Cronbach’s alpha = .90
### Pre-MTSEQ Rote Song

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<th>Item</th>
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<th>Scale Variance if Item Deleted</th>
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<th>Squared Multiple Correlation</th>
<th>Cronbach's Alpha if Item Deleted</th>
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</thead>
<tbody>
<tr>
<td>Sing in private</td>
<td>476.34</td>
<td>27248.78</td>
<td>.47</td>
<td>.27</td>
<td>.87</td>
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<tr>
<td>Sing with a group</td>
<td>499.51</td>
<td>25039.76</td>
<td>.54</td>
<td>.46</td>
<td>.86</td>
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<tr>
<td>Sing in front of peers</td>
<td>532.93</td>
<td>24311.22</td>
<td>.61</td>
<td>.49</td>
<td>.86</td>
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<tr>
<td>Sing with a recording</td>
<td>513.17</td>
<td>23892.20</td>
<td>.57</td>
<td>.46</td>
<td>.86</td>
</tr>
<tr>
<td>Learn new songs</td>
<td>485.12</td>
<td>26175.61</td>
<td>.65</td>
<td>.59</td>
<td>.86</td>
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<tr>
<td>Teach children the concept of high and low</td>
<td>500.24</td>
<td>23467.44</td>
<td>.69</td>
<td>.65</td>
<td>.85</td>
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<tr>
<td>Teach a new song using a recording</td>
<td>498.78</td>
<td>22780.98</td>
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<td>.67</td>
<td>.84</td>
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<tr>
<td>Choose appropriate songs for children to sing</td>
<td>496.10</td>
<td>24434.39</td>
<td>.65</td>
<td>.56</td>
<td>.85</td>
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<tr>
<td>Teach a new song by myself (without a recording)</td>
<td>514.88</td>
<td>22680.61</td>
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<td>.44</td>
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Cronbach’s alpha = .87

### Mid-MTSEQ Rote Song

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<tbody>
<tr>
<td>Sing in private</td>
<td>573.80</td>
<td>23898.56</td>
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<td>Sing with a group</td>
<td>587.22</td>
<td>23245.98</td>
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<td>.56</td>
<td>.92</td>
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<td>Sing in front of peers</td>
<td>616.00</td>
<td>18603.00</td>
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<td>Sing with a recording</td>
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<tr>
<td>Learn new songs</td>
<td>585.02</td>
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<td>Teach children the concept of high and low</td>
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<td>.71</td>
<td>.91</td>
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<td>Teach a new song using a recording</td>
<td>591.12</td>
<td>20915.61</td>
<td>.88</td>
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<td>Choose appropriate songs for children to sing</td>
<td>586.98</td>
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<td>Teach a new song by myself (without a recording)</td>
<td>604.05</td>
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Cronbach’s alpha = .92

215
### Post-MTSEQ Rote Song

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<th>Squared Multiple Correlation</th>
<th>Cronbach's Alpha if Item Deleted</th>
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</thead>
<tbody>
<tr>
<td>Sing in private</td>
<td>688.05</td>
<td>10096.10</td>
<td>.22</td>
<td>.17</td>
<td>.90</td>
</tr>
<tr>
<td>Sing with a group</td>
<td>697.56</td>
<td>8268.90</td>
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<tr>
<td>Sing in front of peers</td>
<td>718.78</td>
<td>7550.98</td>
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<tr>
<td>Sing with a recording</td>
<td>701.71</td>
<td>7664.51</td>
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<td>.76</td>
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<td>Learn new songs</td>
<td>691.95</td>
<td>8641.10</td>
<td>.78</td>
<td>.81</td>
<td>.87</td>
</tr>
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<td>Teach children the concept of high and low</td>
<td>699.27</td>
<td>7801.95</td>
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<td>Teach a new song using a recording</td>
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<td>8303.78</td>
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<tr>
<td>Choose appropriate songs for children to sing</td>
<td>693.17</td>
<td>8662.20</td>
<td>.71</td>
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<td>Teach a new song by myself (without a recording)</td>
<td>705.85</td>
<td>7654.88</td>
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Cronbach’s alpha = .89

### Pre-MTSEQ Overall Confidence

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<th>Squared Multiple Correlation</th>
<th>Cronbach's Alpha if Item Deleted</th>
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</thead>
<tbody>
<tr>
<td>Deliver developmentally appropriate music instruction</td>
<td>289.02</td>
<td>8054.02</td>
<td>.82</td>
<td>.73</td>
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</tr>
<tr>
<td>Promote music as an integral element in children’s lives</td>
<td>285.37</td>
<td>7940.49</td>
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<tr>
<td>Incorporate many styles of music into instruction</td>
<td>285.61</td>
<td>7765.24</td>
<td>.89</td>
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<tr>
<td>Use music to support teaching and learning of other curricular subjects</td>
<td>281.46</td>
<td>8022.80</td>
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<td>.91</td>
</tr>
<tr>
<td>Continue improving and developing my own musical skills</td>
<td>271.22</td>
<td>9270.98</td>
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Cronbach’s alpha = .94
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<th>Squared Multiple Correlation</th>
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<tr>
<td>Deliver developmentally appropriate music instruction</td>
<td>373.90</td>
<td>1774.39</td>
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Cronbach’s alpha = .96