MUSIC TEACHERS' PERCEPTIONS: THE ROLE OF MUSIC EDUCATION IN EARLY LITERACY

by

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B.M.E., Kansas State University, 1983
M.M.E., Wichita State University, 1999

AN ABSTRACT OF A DISSERTATION

submitted in partial fulfillment of the requirements for the degree

DOCTOR OF PHILOSOPHY

Department of Curriculum and Instruction
College of Education

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Abstract

In the wake of *No Child Left Behind Act* (U.S. Department of Education, 2006), educational reforms focused on providing students with effective systematic instruction in reading skills have become a nationwide concern. Report findings from the National Reading Panel (National Institute of Child Health and Human Development, 2000), indicate the establishment of a high quality comprehensive reading curriculum must include the five key components of phonemic awareness, phonics, fluency, vocabulary, and comprehension to improve reading achievement. These essential elements, with emphasis on phonemic awareness and phonics skills beginning in pre-kindergarten, are instrumental in the acquisition of early literacy development.

The purpose of this qualitative study was directed toward better understanding first grade general music teachers' perceptions of the role of music education in the attainment of early literacy. Using a multi-site case study design to examine and present an analysis of nine public elementary school music educators from across a Midwestern state, each of which used one of the three elementary general music series currently published, resulted in this collective case study. Data indicated parallels focused on the five key reading components between music and language literacy development processes, with particular emphasis on aural discrimination skills to phonemic awareness. Further findings described the sequential sound before symbol pedagogical practice of music literacy development from the perspective of the nine general music educators to be similar to early reading skills progressions, as they experienced equivalent learning processes. Implications for the educational community and suggestions for further research were discussed.

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CHAPTER 1 - Introduction

The Problem

A nationwide concern among educators, researchers, parents, and politicians is the growing number of children in the United States that cannot "read well enough to ensure understanding and to meet the demands of an increasingly competitive economy" (Snow, Burns, and Griffin, 1998, p.1). Reading has been described as such an important skill that students' failure to read has escalated beyond an educational issue to be additionally considered a public health issue (National Institute of Child Health and Development, 2000) with more at risk than simply reading at grade level in school. Stanovich (1986) refers to the term *Matthew effect* to describe the phenomenon of students who fall behind their peers in reading early in the educational process and adds, "Slow reading acquisition has cognitive, behavioral, and motivational consequences that slow the development of other cognitive skills and inhibit performance on many academic tasks" (Adams, 1990, pp. 59-60).

The *America Reads Challenge* (U.S. Department of Education, 1999) reports nearly 40 percent of the nation's fourth grade students are assessed reading at or below the Basic achievement level, with the Basic achievement level defined as the level of partial mastery of the knowledge and skills necessary for grade level success. In efforts to increase student reading achievement, report findings from the National Reading Panel (National Institute of Child Health and Human Development, 2000), encourage the United States government to mandate educational reforms providing all students with effective systematic instruction in core academic

areas to improve American education. On January 8, 2002, President Bush signed into law the *No Child Left Behind Act* (U.S. Department of Education, 2006) requiring states to implement standards-based assessments in reading and mathematics for students in grades three through eight by the 2005-2006 school year. These same federal guidelines are responsible for the accountability standards and requirements producing Adequate Yearly Progress, AYP, and placing a major focus on improved reading instruction. Adequate Yearly Progress, by the United States Department of Education is defined as:

> an individual state's measure of progress toward the goal of 100 percent of students achieving to state academic standards in at least reading/language arts and math. It sets the minimum level of proficiency that the state, its school districts, and schools must achieve each year on annual tests and related academic indicators. (2002, para. 1)

Research indicates the establishment of high quality reading instruction and intervention protocols in primary elementary grades improves basic reading skills and averts potential reading disabilities (Lyon and Moats, 1997; National Institute of Child Health and Human Development, 2000; Snider, 1995). "One important reason for the current emphasis on early intervention is the research evidence indicating that a pattern of school failure starts early and persists throughout a child's school career" (Farstrup and Sammuels, 2002, p. 70). In developing a comprehensive reading curriculum, the report from the National Reading Panel (National Institute of Child Health and Human Development, 2000) identifies five key areas of skills and instructional methods that are instrumental in the acquisition of beginning reading skills. The five areas of effective reading instruction that are essential elements to reading achievement comprise phonemic awareness, phonics, fluency, vocabulary, and comprehension (Farstrup and Sammuels,

2002; Hansen, Bernstorf, and Stuber, 2004; National Institute of Child Health and Human Development, 2000; and the National Research Council, 1998).

A scientifically based approach to reading instruction including the five areas of reading beginning in pre-kindergarten with emphasis on phonemic awareness and phonics skills is essential to a comprehensive reading curriculum (U.S. Department of Education, 2002; Farstrup and Samuels, 2002; National Institute of Child Health and Human Development, 2000). Phonemic awareness is identified as an important pre-reading ability as it involves all processes in learning to read and write and is one foundational piece of a complete reading program as defined by national standards (Adams, Foorman, Lundberg, and Beeler, 1998; Snider, 1997; Hoien, Lundberg, Stanovich and Bjaalid, 1995; and Yopp, 1995). It is the understanding that the sounds of spoken language work together to make words and is defined as "the ability to hear, identify, and manipulate individual sounds-phonemes-in spoken words" (Armbruster, Lehr, and Osborn, 2003, p. 10), with phonemes described as the smallest part of spoken language and entirely dependent upon auditory ability (Fisher and McDonald, 2001; Hansen and Bernstorf, 2002; National Institute of Child Health and Human Development, 2000). As well as being a predictor of reading achievement, recent research recognizes that phonemic awareness is of primary importance in a child's acquisition of literacy skills and necessary to progress from early literacy to independent reading (Adams, 1990; National Institute of Child Health and Human Development, 2000; Snider, 1997; Snow et al., 1998; Stanovich, 1986; Yopp, 1995; Yopp and Yopp, 2000).

The developmental phonemic awareness sequence is an analysis originating with the recognition of units first as whole words, progressing to the understanding of shared beginning sounds, alliteration, and ending sounds, rhyme, and then to a syllabic level. From the syllabic

level, the development advances to sub-syllabic units of onset and rime; the onset of a syllable being the initial consonants, and the rime consisting of the vowel and any subsequent consonants in the syllable, and concluding with phonemic analysis (Stanovich, 1986). A child demonstrates phonemic awareness proficiency by the ability to apply a variety of phonemic awareness skills such as phoneme isolation and identification, phoneme manipulation, phoneme substitution and deletion, phoneme blending, and phoneme segmentation (Adams, 1990). Phonemic awareness then supports the development of the alphabetic principle, defined as understanding the symbolization of spoken language and grapheme to phoneme correspondence (Adams et al., 1998; Richgels, 2001; Snow et al., 1998).

Phonics, the second essential element of reading achievement "is the understanding that there is a predictable relationship between phonemes and graphemes, the letters that represent those sounds in written language" (Hansen, Bernstorf, and Stuber, 2004, p. 43). It is a method of teaching reading utilizing grapheme-phoneme correspondence in order to decode, which the ability to figure out how to read unknown words by using knowledge of letters, sounds, and word patterns (Farstrup and Sammuels, 2002; Hansen and Bernstorf, 2002). As children begin to attach meaning and representation to symbols based on the oral language they have acquired and their prior aural and visual learning experiences, phonological awareness leads to success in beginning reading development (Adams, 1990; McGee and Richgels, 2000).

In addition to phonemic awareness and phonics, the third critical reading area necessary for success in reading achievement is that of fluency. Fluency, as defined in *The Literacy Dictionary: The Vocabulary of Reading and Writing,* is "freedom from word identification problems that might hinder comprehension" (Harris & Hodges, 1995, p. 85). "Fluent readers are characterized by the ability to read orally with speed, accuracy, and proper expression" (National

Institute of Child Health and Human Development, 2000). Research affirms (Farstrup and Sammuels, 2002) that development of reading fluency depends upon obtaining meaning from print, accurately and automatically identifying words as holistic units, and "adequate progress in learning to read English beyond the initial level depends on sufficient practice in reading to achieve fluency with different texts" (Snow et al., 1998, p. 233).

Research-based vocabulary instruction, the fourth area of effective reading, indicates that the majority of vocabulary is learned indirectly through everyday experiences with oral and written language, and a minority of vocabulary is learned directly when students are explicitly taught both individual words and word learning strategies (Farstrup and Sammuels, 2002; National Institute of Child Health and Human Development, 2000). Vocabulary, defined as words which must be understood to communicate effectively, is generally described as oral vocabulary, that which is used in speaking or recognized in listening, or reading vocabulary, referring to that used in printed text.

Academic development and reading achievement are dependent upon a comprehensive vocabulary program. Graves suggests a "four-part vocabulary program is a balance between cognitive and affective factors" (Farstrup and Sammuels, 2002, p. 142), inclusive of the following crucial components:

1) Word Reading – word learning in context of normal reading; increased reading results in increased vocabulary.
2) Individual words – effective vocabulary instruction provides learners with both definitional and contextual information; when learners actively process the new word meanings, and when they experience multiple encounters with words.

3) Word Learning Strategies – third approach to increase student vocabulary is to teach word learning strategies; teach context clues, word parts, and dictionary usage.
4) Word Consciousness – refers to the awareness of and interest in words and their meanings by modeling, recognizing, and encouraging adept diction; promoting word play; providing intensive and expressive instruction; teaching students about words (Farstrup and Sammuels, 2002, p. 142-5).

Improvement in increasing readers' comprehension by focusing on key words, high frequency words, and demanding words, vocabulary instruction, and the "understanding that meaning of words is critical to reading, listening, writing, and speaking" (Nilsen and Nilsen, 2003), provides a strong foundation in vocabulary knowledge of word definitions and contextual word meaning (Fastrup and Sammuels, 2002; Hansen and Bernstorf, 2002).

The fifth component of a comprehensive reading curriculum identified for early reading instruction to improve basic reading skills in beginning readers is comprehension. Educational research has indicated a strong correlational relationship between the areas of vocabulary knowledge and reading comprehension (Baker, 1995; Nagy, 1988; and Nelson-Herber), and the report from the National Reading Panel (National Institute of Child Health and Human Development, 2000) states:

> Reading comprehension is a cognitive process that integrates complex skills and cannot be understood without examining the critical role of vocabulary learning and instruction. Its development and active interactive strategic processes are critically necessary to the development of reading comprehension. (p.13)

Reading comprehension, described as " the essence of reading" by Durkin (1993), is an interactive construction process of meaning incorporating all elements of reading development

and influenced by interactions of reader knowledge and abilities and text-based factors (Farstrup and Sammuels, 2002; Harris and Hodges, 1995; Snow, 2002). "Evidence suggests that teaching a combination of reading comprehension techniques is the most effective" method of instruction to achieve improved reading skills (National Institute of Child Health and Human Development, 2000, p. 15). Explicit instruction in comprehension strategies and techniques, the specific devices and strategic processes that enable active and purposeful readers to create connections with text, is inclusive of the ability to: a) activate and apply prior knowledge, b) set purposes, c) predict, d) decode text, e) summarize, f) visualize, g) question, h) monitor understanding, i) clarify and correct, j) reflect and transfer is what reading comprehension comprises (Fartstrup and Sammuels, 2002; National Institute of Child Health and Human Development, 2000).

While there has been much focus placed on increasing student achievement in the core academic areas, of which reading is one, recent research now accentuates the importance of arts education in enhancing a student's learning ability (Sylwester, 1995; Sousa, 2006; Weinberger, 1998b). Learning experiences in the arts, according to Winner and Hetland (2000b), can lead to greater academic achievement by encouraging motivational and attitudinal changes and positively affect the development of higher cognitive powers that transfer skills from one domain to another. The evidence discovered by new technology in brain research suggests that music study influences the development of integrated sensory, attentional, cognitive, emotional, and motor neurobiological functions, described by Jensen (2000) as a neural symphony. As music instruction is credited to increasing the student's brain capacity by enriching the neural structures and perhaps establishing new connections in children (Jensen, 2001; Rauscher, 2002; Weinberger, 1998a), all music engagements, regardless of age or level of music training, activate

both hemispheres and involve cerebral cortex activity and memory retrieval mechanisms (Reimer, 2004).

Amidst the extensive educational brain research examining the impact of music on cognitive growth, Weinberger (1998a) states:

> Music making appears to be the most extensive exercise for brain cells and their synaptic interconnections. Education in both music listening and music making facilitates students' intellectual development and even helps students learn other basic subjects, such as reading. (p. 39)

Regarding the potential to transfer across disciplines, Rauscher (1999) claims, "It stands to reason that if music can influence the organization of the brain, this anatomical reorganization will in turn affect behaviors governed by the affected neural structures" (p. 36). Eisner (2001) concurs by stating "it is the interaction of and the translation between the arts and language and mathematics as symbol systems, the mediating between different domains of knowledge which generates the learning as authentic intellectual work" (p. 26).

These findings indicate the need for further investigation surrounding the problem of inadequate reading performance of so many in today's society despite the current abundance of research in regards to the situation. While much research in the areas of reading development and instruction, educational settings, and neuroscience has been conducted to discover corrective measures to the dilemma, there is still very little known about music educators' perceptions towards their role in the situation of developing literacy in young children and this problem serves to inform this study (Curtis, 2007; Wolcott, 1994).

Investigations of collective case studies lead toward a design for the various thematic elements to emerge from qualitative data in order to discover meaning and gain understanding

(Gay & Airasian, 2003) of a phenomenon. Inquiries that examine a contemporary educational phenomenon within its real-life context by collecting empirical materials inclusive of teacher interviews, classroom observation field notes, a questionnaire, and archival research are supported by Denzin (1989), Stake (2006), and Yin (2002). And the aim of an analytical study, as described by Wolcott (1994), is to account for connections and relationships among phenomena, descriptions of contexts and influences, and differing perspectives toward phenomena, and then "putting pieces together where they emerge…and forming a whole that makes sense to us" (Eisner, 1985, p. 185).

The pieces of literacy relate to listening, speaking, reading, and writing abilities as forms of communication in both oral and written language beginning at birth and continuing throughout life. The literacy continuum begins with environmental informal and unconventional literacy experiences and progresses through formal conventional instruction as children acquire literacy skills at different ages in a variety of ways (Teale and Sulzby, 1989). Oral language skills provide a foundation for literacy development and are of vital importance as it relates to early literacy. The term early literacy as described by Snow (1991), is a process of literacy development, approximately between the ages of five through eight, in which children receive systematic instruction in specific literacy skills through facilitation of an adult providing them with the experiences necessary to gain understanding of the function of language and symbols.

Gordon (1993) proposes stages of early music development parallel the stages of language development beginning with investigation and experiment of music sounds during the same time frame, around the first grade of school instruction. Both processes of development, music and language, provide children multiple varied experiences to be actively engaged in the learning process, allowing them to construct their own understanding and build their own

knowledge through their literacy experiences (Piaget, 1952). An examination of the linkage between music development instruction and early literacy would help in forming a sensible whole literacy picture for future qualitative endeavors.

Purpose Statement

The purpose of this qualitative study was to gain understanding of how music teachers perceive the role of music education in the acquisition of early literacy. Using a multi-site case study design to examine and present this analysis of nine first grade general music teachers' perceptions based on music instruction provided by the three textbook series under investigation, resulted in this collective case study.

Research Questions

This study was directed toward gaining understanding and meaning of first grade elementary music teachers' perceptions of the role of music education in the attainment of early literacy by the following research questions:

1. How do elementary music teachers view their role in literacy instruction?
2. How do elementary music teachers perceive how music instructional practices impact student learning and transfer to reading development?
3. How do music teachers perceive how their textbook series address literacy?
4. What factors do teachers perceive affect their knowledge of music instruction as related to early literacy?
5. To what extent does differentiated music instruction, as determined by the textbook series used, account for the variations in the findings of:

- Question #1: How do elementary music teachers view their role in literacy instruction?
- Question #2: How do elementary music teachers perceive how music instructional practices impact student learning and transfer to reading development?
- Question #3: How do music teachers perceive how their textbook series address literacy?
- Question #4: What factors do teachers perceive affect their knowledge of music instruction as related to early literacy?

The Significance of the Study

The identification and systematic analysis of music educators' perceptions toward their role in early literacy acquisition will contribute to qualitative research in multiple ways. The first contribution was to inform educators in the future development of literacy-based curricula. Secondly, it was to provide administration and pre-service educators with what experiences are needed to aid music educators about literacy development. And the third contribution was to further development and use of qualitative methods in music education research to gain understanding.

The first contribution of this study was to aid in the overall understanding of difference in perceptions on the basis of differentiated music instruction provided by the three textbook series under investigation. The qualitative findings from this study may contribute information and insight to support future development of instruction, policy, and curriculum in both music and early childhood education by further illuminating the importance of quality music education with young children.

The second contribution was to the body of knowledge related to the impact of music education on early literacy acquisition. This exploratory research will assist administrators and collegiate educators in what training, professional development, and kinds of experiences are needed to effectively understand the role of music education in the acquisition of early literacy development.

And thirdly, this study contributed to further the development and use of qualitative methods in music education research to gain understanding of teacher's perspectives. While countless studies of quantitative nature exist in the fields of music education and reading development, there is very limited qualitative literature available with regards to both music education and early reading development, with a notable gap of any case studies.

Theoretical Framework

The theoretical framework for this collective case study is based on psychological aspects connecting music and language acquisition. The area of developmental psychology provides theories that guide research and understanding of how children process the similar developmental sequences of music and language in their learning progression, as well as suggest learning transfer.

The social theories of Piaget (1952), Vygotsky (1962), Bruner (1960), Gardner (1983), and Gordon (1993) have all influenced how we consider young children and their developmental processes particularly in the areas of expression, communication, and cognition. A major tenet shared by each of these theorists is that learning occurs first through sensory experiences before moving to the symbolic representations of music and language. Children are viewed as active agents in their own enculturation. Teachers facilitate children progressing naturally from dependent to independent music and literacy acquisition with meaningful sensory to abstract

experiences while providing a learning environment inclusive of physical, social, cognitive, affective, and emotional requirements.

Jean Piaget

Jean Piaget formulates the stage development theory that children have an innate curiosity and the cognitive development occurs as a result of children's interactions with their environment. His theory suggests that children travel through a hierarchical sequence of thought structures that affect the child's thinking and understanding during each successive period (1969, pp. 21-32). Piaget describes how children develop cognitive abilities in the four developmental stages as:

1. Sensorimotor stage – from birth to age 2; children experience the world through their senses and movement.
2. Preoperational stage – from ages 2 to 7; children are intuitive in nature and acquire representational skills.
3. Concrete operational stage – from ages 8 to 11; children develop logical, flexible, and organized thought processes regarding concrete events.
4. Formal operational stage – from ages 12 to 15; children develop abstract reasoning.

Piaget's theory of cognitive constructivism explains learning as a natural process, which results from individual interaction with nature. He proposes that individuals learn by actively constructing new knowledge and build their knowledge through experiences (1969). Students engaged in the music literacy process and early literacy learning also experience these same sequential stages of development.

Lev Vygotsky

While born in the same year as Piaget, and also contributing to the understanding of communication and cognition development, Lev Vygotsky stresses the social origin of language acquisition. In order for children to learn the language of their society, Vygotsky expresses the importance of role-play in various social situations. He proposes language represents the function of mind and it is composed of two external elements, thought and word speech; thought to be guided by word speech and word speech a primary medium of thinking (1962, p. 21). Vygotsky asserts learning as a complex process derived from relationships among individuals, nature, and social context (1980, pp. 162-195).

Vygotsky's theory of social constructivism emphasizes the fundamental role social interaction plays in the development of cognition (1980, p. 90). The two major aspects of his theory both engage an internalization and externalization of the social interaction process. In his theory of the development of cognition, Vygotsky states:

> Every function in the child's cultural development appears twice: first, on the social level, and later, on the individual level: first, between people (interpsychological) and then inside the child (intrapsychological). This applies equally to voluntary attention, to logical memory, and to the formation of concepts. All the higher functions originate as actual relationships between individuals. (1978, p. 57)

The social constructivist theory concept of the "zone of proximal development" is also developed with both internalization and externalization of social interaction. Vygotsky describes the "zone of proximal development" as the distance measured between a child's existing level of development and the potential level which can be learned with the aid of external social interaction (1962, pp. 103-104). He proposes learning as a process involving both personal

experiences and social context in which children follow adult examples and gradually develop independence. Guiding students to independent reading through a progression of internal and external experiences is inherent to both music and language literacy development.

Jerome Bruner

Jerome Bruner's constructivist theory is related to Piaget's and Vygotsky's child development theories. Similar to Piaget, he emphasizes the individual child, and much like Vygotsky, he stresses the importance of social and cultural contexts (1960). He holds that a child's social interaction is fundamental to learning and considers language as an "instrument of thought," the most important cultural tool in child's cognitive growth (1966, p. 270). Bruner affirms that children learn best by personal discovery and that learning is an active social process in which new concepts are constructed based on current knowledge and then categorized (1960).

In his theory of instruction, Bruner states that any domain of knowledge, or concept within that domain, can be represented in three modes: enactive, iconic, and symbolic (1966, p. 316). While Piaget associated each mode of representation to a specific stage of childhood development, Bruner's model suggests the integrated progression of modes as internal forms of language during each development stage. He describes each mode as:

1. Enactive – external manipulation of objects; sensory experiences
2. Iconic – graphemes; internal imagery; visual aural experiences
3. Symbolic – use of labels, words, numbers; abstract reasoning and oral experiences

Understanding general ideas at a conceptual level to facilitate later recognition and solutions for similar problems, rather than focusing on specific skills, is Bruner's description of his learning transfer theory (1977, pp. 72-117). He affirms "this type of transfer is at the heart of the educational process - the continual broadening and deepening of knowledge in terms of basic

and general ideas" (1960, p. 17). It depends not on mastery of specific skills, but rather on foundational concepts and structures that students can apply to many different situations. It is this type of learning that enables learners to apply skills and knowledge learned in one context to another context, solve complex problems, and gain cognitive independence (1960, pp. 17-20). He further proposes curriculum should be organized in a spiral manner in such a way that the child continually builds upon what has already been learned, with the new knowledge readily understood, creating a condition of student readiness (1977).

In language development of young children, Bruner indicates adult interaction as the major mode of support as they learn how to use language by developing understanding of grammar, communication, and literacy skills (1983). He emphasizes the structure process of language in young children and states:

> The first is 'external': how the linguistic community arranges speech encounters so that the young aspirant speaker can get a hold on how to make his own communicative intentions clear and how to penetrate the intentions of others. The principle vehicle of this assistance is the format, the patterned situations that enable adult and child to cooperate in the 'passing on' of a language. The second thread is more 'internal' and procedural. It is about how communicative intent is successively transformed through negotiation into increasingly powerful linguistic resources. (Bruner, 1983, p. 10)

From contextual external experiences of the enactive mode through the progression of internalized iconic to symbolic modes, music development and early literacy provide experiences to actively engage students in the learning process allowing them to construct their own understanding and build their knowledge (Boardman, 1989).

Howard Gardner

Howard Gardner's theory of multiple intelligences transcends formerly held beliefs regarding intelligence (1983). Unlike Piaget's theory that intelligence was a single set of innate mental skills, Gardner suggests there are at least eight independent intelligences, each with individual developmental sequences attained to different degrees in every human being (1999, p. 215). He defines intelligence as "the ability to solve problems, or to have created products, that were valued within one or more cultural settings" (1983, pp. 60-61). To determine his eight intelligences, Gardner (1983, 1999) applies eight distinct criteria and asserts the intelligences to date include:

Linguistic intelligence involves the meaning and order of words and the ability to use spoken and written language effectively to express oneself and to remember information, as exhibited by writers, poets, lawyers and speakers.

Logical-mathematical intelligence is the ability to analyze problems logically and scientifically by detecting patterns, reasoning deductively, and understanding numbers.

Musical intelligence is skill in the performance, composition, and appreciation of musical patterns. Musicians, composers and dancers have a high degree of musical intelligence.

Bodily-kinesthetic intelligence is identified as the potential of using one's whole body or parts of the body in a skilled way. Those that display this quality include mimes, dancers, athletes, and actors.

Spatial intelligence is to "think in pictures," to perceive the visual world accurately, and recreate it in the mind or on paper, using and recognizing the patterns of space. Artists, architects, designers and sculptors are examples.

Interpersonal intelligence is the ability to perceive and understand other people and work well with them. Educators, religious and political leaders, and therapists/counselors have highly developed intelligence of this nature.

Intrapersonal intelligence involves an understanding of one's own emotions and to appreciate one's feelings, fears and motivations. Sigmund Freud is a leader in this line of thought.

Naturalist intelligence is skill in understanding the natural world, to recognize, categorize and draw things in the environment or nature.

While Gardner considers each intelligence autonomous, he advocates that all are necessary for complete development (1983, pp. 60-61). According to his theory, each domain develops a structure, a framework for understanding, but it is when multiple intelligences work in harmony that maximum human intellectual capacity is fulfilled (1983, p. 9). When developed and employed in combination, one intelligence fortifies the structure for understanding of another. Gardner clarifies the significance of comparing language and music development by stating:

> Just as one can tease apart a series of levels of language – from the basic phonology level, through a sensitivity to word order and word meaning, to the ability to appreciate larger entities like stories – so, too, in the realm of music, it is possible to examine sensitivity to individual tones or phrases, but also look at how these fit together into larger musical structures which exhibit their own rules of organization. (1983, p. 108)

Gardner's theory provides support for music development in using alternative methodologies and activities to accommodate all students according to their orientation of learning and multimodal strengths. He further supports that in combination, one intelligence

reinforces the construction for understanding of another intelligence, such as the learning process for music and language literacy development.

Edwin Gordon

The music learning theory of Edwin Gordon combines knowledge about sequential music learning, music aptitude, and audiation, with the ability to discriminate between rhythmic and tonal patterns as a foundation (2003).

His theory is based on musical learning sequences, including three stages of early childhood music development, which parallel the stages of language development. Stage one, acculturation, is the stage in which children are allowed to investigate and experiment with musical sounds. The second stage of imitation allows for self-discovery, providing opportunities for creativity, and stage three, assimilation, coordinates singing with breathing and movement while also developing a sense of beat and tonal center (2003).

Gordon's cognitive developmental theory of musical aptitude states: "in order to understand music, one must be aware both descriptively and interpretively of its basic aural elements (Gordon, 1980, p. 2). He further defines music aptitude in early childhood as a measure of a child's innate potential to learn music and as a product of both innate potential and environmental influences (1993).

"Audiation is to music what thought is to speech" (Gordon, 1993, p. 13). Gordon defined audiation as a complex level of internalizing music utilizing a hierarchy of verbal and aural discrimination and inference learning (1993). According to Gordon, students use discrimination when they recognize what is familiar and they use inference when they identify what is unfamiliar based on what they already know. He proposes the basic audiation skills of pitch and rhythm prepare students for the development of music literacy skills (2003).

Gordon's theory explains that young children acquire music learning readiness through a developmental progression similar to that associated with language acquisition (Sims, 1995, pp. 1-16). His four sequential music vocabularies: 1) listening; 2) speaking; 3) reading; and 4) writing; have parallels with spoken language, particularly in the area of phonemic awareness (Gordon, 1993). He asserts the listening vocabulary, the most basic yet most important vocabulary be it in the context of spoken language or music, facilitates the child with development of the remaining sequential vocabularies. Gordon's theory of music cognition progresses from aural sensory experiences, to verbal-visual experiences, to labeling symbolic abstract associations is a sequence similar to that of his constructivist predecessors, Piaget, Vygotsky, Bruner, and Gardner (Gordon, 1980).

Limitations, Delimitations, and Assumptions

Limitations

The limitations of this investigation are comprised of the following factors. First, as will be discussed in Chapter Three, only female perspectives will be studied, which may vary greatly from a male point of view. Upon examination of all identified possible participants, information revealed only two male potential participants, and upon further investigation it was discovered that the textbook series publications of each male did not meet study criteria, thus the study is limited to females. Second, the primary elementary educators perspective will not necessarily be inclusive of other music educators at the middle school or high school levels, or even similar to other subgroups of elementary settings. Third, the only group to be analyzed will be primary elementary music educators from the Midwest and the findings will not and cannot be generalizable to all elementary groups nor groups from other regions of the United States. And

finally, this study is further limited as this qualitative researcher will be the primary instrument, the human instrument, for data collection and analysis, involving fieldwork of physically going to the participants, in their natural settings, to observe and record.

Delimitations

This study will systematically collect data from a number of sources with no explicit attempt to collect data from all viable sources of information.

Assumptions

This qualitative design is interested in gaining understanding and meaning of how music teachers perceive their experiences and makes the following assumptions. One assumption may be that music teachers adequately understand enough about early literacy and the development of reading to answer the questions sufficiently for substantial data. And another assumption may be that music series publishers acknowledge the impact of music instruction on reading development and include contents that contribute to early language literacy in elementary music basal series.

Definition of Terms

The following terms are defined as they relate to the context of this study:

- Comprehension: deliberate thinking at some point in which meaning is formed through exchanges between text and reader (Harris and Hodges, 1995).
- Cueing Systems Awareness: gathering meaning from words, phrases, or sentences surrounding a word (Hansen and Bernstorf, 2002).
- Decoding: the breaking of the visual code of symbols into sounds (Hansen and Bernstorf, 2002).

- Fluency: clear, easy written or spoken expression of ideas with speed and accuracy (Hansen and Bernstorf, 2002).
- Literacy: the ability to communicate in real-world situations, involving the ability to read, write, speak, listen, view, and think (Hansen et al., 2004).
- Onset: the letter or letters before the first vowel in a word (Snow et al., 1998).
- Orthographic awareness: the ability to understand the use of letters and other symbols in a writing system (Hansen and Bernstorf, 2002).
- Phonemic Awareness: involves identifying and manipulating the smallest sound units within the written symbol (Hansen et al., 2004).
- Phonics: teaching practices that emphasize how spellings are associated to speech sounds in systematic ways (Snow et al., 1998).
- Rime: a specific rhyme involving a vowel and any following consonant of a syllable (Hansen and Bernstorf, 2002).
- Vocabulary: the words students must know to communicate effectively (Snow et al., 1998).

Summary

The first chapter introduced the background for the study with a summarization of the foundation and importance of studying the connection between music education and early literacy. Research questions derived from the problem statement were presented, followed by a section stating the theoretical framework. Finally, the limitations of the study were noted along with the definition of terms.

CHAPTER 2 - Review of Literature

Literacy development is an essential element in school curriculum throughout the primary grades with national, state, and local government heavily invested with time and multiple resources. The importance of early proficiency in literacy development is a prime predictor of school success and a student's future. This study proposes to examine aspects of literacy acquisition as perceived by music educators. The following chapter will review related literature with a focus primarily on 1) literacy development; 2) music and literacy research; 3) brain development; 4) knowledge and learning as it applies to memory and learning transfer; and 5) a summary of the chapter.

Literacy Development

According to the National Reading Panel report (National Institute of Child Health and Human Development, 2000), most third grade students identified experiencing reading difficulties will remain below grade-level reading in high school, thus reading interventions must begin early. Lyon and Moats (1997) have recommended all children at risk for reading failure need to be identified and assisted before the age seven, if interventions are to succeed in improving basic reading skills and preventing reading disabilities (U.S. Department of Education, *America Reads Challenge*, 1999). Reading intervention programs at the pre-kindergarten and kindergarten level, before a child is expected to read, focus on developing the pre-reading and the beginning reading ability known as phonemic awareness. There is significant evidence that early foundational skills in phonemic awareness will prevent reading problems in the future. The results from the *Report of the National Reading Panel: Teaching*

Children to Read conclude that phonemic awareness training in young children improved students' phonemic awareness and reading (National Institute of Child Health and Human Development, 2000) and the level of phonemic awareness that children possess when first beginning reading instruction and their knowledge of letters are the two best predictors of how well they will learn to read during the first two years of formal reading instruction (Adams, 1990; Snow et al., 1998; Stanovich, 1986). Phonemic awareness in early readers is an essential element for success in learning to read and understanding the symbolization of spoken language and logic to our written system (Adams et al., 1998; National Reading Council, 1998; Richgels, 2001; Yopp and Yopp, 2000).

Leading reading experts emphasize the importance of a systematic and research-based approach to reading identifying the two key factors of teaching the system of language and linking instruction in a logical sequenced progression from one grade level to another (Adams, 1990; Yopp, 1992). Current research indicates that all successful early reading programs must include:

1. Basic instruction on accurate diagnostic information
2. Print concepts development
3. Knowledge of letter names and shapes
4. The understanding that spoken words are composed of sounds (phonemic awareness) and that letters correspond to these sounds
5. Systematic and explicit instruction in sound/symbol relationships (phonics)
6. Instruction in highly decodable text that contains the sounds and symbols taught
7. Rich and varied literature read to children regularly

In addition, these skills must be taught as part of a comprehensive approach that includes varied and abundant printed materials, active learning, and the development of written and spoken language through highly engaging activities (Adams, 1990; Yopp, 1992).

Phonemic Awareness

Instruction of phonemic awareness is the foundation for learning to recognize the differentiating sounds within words. It is the conscious awareness that words are made up of distinct sounds, rather than hearing words as complete units. According to Adams (1990), the goal of reading instruction is to make the process of reading words effortless and automatic so that the mind can be free to reflect on meaning. In order for children to accomplish this level of early reading competency, they must have "detailed knowledge of words, of how they are spelled, and of how they map onto speech- the essence of decoding" (Adams, 1990, p. 7). Adams emphasizes the importance of systematic and explicit phonemic awareness instruction as it allows children to use the system of language rather than to approximate. Her research has shown that students who do not develop basic phonemic awareness, letter recognition, and the ability to decode words quickly will have difficulty learning to read. For successful interventions, the National Institute of Child Health and Human Development (2000) has identified the necessity of three strategies including first, explicit work to help children understand the sound structure of the language at the phonemic level. The second suggested strategy which must be operational for interventions to be effective is intensive and explicit work in the sound and symbol associations, followed closely by the third strategy of explicit application to connected text with controlled vocabulary for optimal achievement.

Intense phonemic awareness development programs correlating with the early childhood curriculum at the primary level focus on auditory blending of syllables and phonemes with letter

sound correspondences and decoding activities. These "programs emphasize the positive effect on learning to read is most evident when phonemic awareness development is integrated into the total reading curriculum, as opposed to being taught as an isolated activity" (Snider, 1995, p. 5). Yopp (1992) defines phonemic awareness as "the awareness that phonemes exist as abstractable and manipuable components of spoken language" (p. 33). She asserts it plays a critical role in the early stages of reading acquisition and is the ability to reflect on speech and experiment with its smallest components, phonemes. Phonemic awareness has been identified as a foundational ability in the hierarchy of skills needed to read successfully. A progression of phonemic awareness development for primary elementary grade levels, as described by Adams (1990) and Yopp (1992), include the capabilities of phonemic isolation, phonemic blending, phonemic segmentation, phonemic deletion, and phonemic substitution.

Extensive research in the development of phonemic awareness indicates that additional understanding of phonemic awareness is necessary for children to progress from early literacy to independent reading (Yopp, 1992.) "The objective of any phonemic awareness activity should be to facilitate children's ability to perceive that their speech is made up of a series of sounds" (Yopp, 1995, p. 699). Yopp (1995) investigated the validity and reliability of ten different phonemic awareness tests used to operationalize the concept of phonemic awareness with kindergarten children. The study indicated that a combination of two tests, one related to each factor, had a greater predictive validity for the beginning steps in reading acquisition than did any test alone (Yopp, 1995). Furthermore, the Roswell-Chall Test of Auditory Blending, provided the greatest reliability, (.96,) while Yopp's own test developed especially for this study to measure a child's ability to articulate the sounds of a word separately in order, the Yopp-Singer Test of Phoneme Segmentation, reported a .95 reliability rate.

Music and Literacy Development

Research supports the acquisition of both language and music occur during very similar developmental sequences in the child's learning progression, beginning at birth and progressing to self-expression through speech and song as they listen and respond to speech and music (Campbell, 1989; Fiske, 1997; Gardner, 1983; Hargreaves, 1986; Piaget, 1952; Vygotsky, 1962).

> Language and music literacy begins with active, holistic experiences that combine the seeing and hearing of models with doing and experimenting, and that doing, experimenting, verbalizing, and comparing oneself with models leads to the acquisition of skills in performing and discriminating, and finally to skills in conceptualizing musical [and spoken] sound and relating it to printed symbols. (Walters, 1992, p. 541)

The early literacy development in both language and music acquisition is stimulated through the child's interaction with the environment as they build upon prior knowledge through sensory experiences of speech and song and progress to symbolic experiences (Boardman, 2001; Bruner, 1966; Campbell, 1989; Gordon, 1980; and Hargreaves, 1986). This process enables children to develop meaningful connections from what they hear and understand to the abstract symbolic representations necessary for reading printed language or reading musical notation.

The development of music literacy skills is initiated by basic audiation skills. "Gordon's theory compares learning music to learning a spoken language, as a progression from first simply perceiving and responding to sounds to the advanced levels of problem-solving and conceptual understanding" (Campbell, 1989, p. 76). Beginning in infancy, language and music aptitude are particularly dependent upon the aural skills of perception, discrimination, and memory.

Gordon asserts the development of critical thinking begins with the fundamental level of aural and oral experiences, such as informal listening and spontaneous performances, progresses

to verbal association of prior musical training and performances, and culminates at the ultimate level of musical cognition, the association of symbols to musical patterns and connections to previous concepts of verbal labeling of aural and oral experiences (Gordon, 1980).

Beyond similarities in developmental sequences, both language and music utilize parallel reading instructional strategies by including phonological awareness, phonemic awareness, sight identification, orthographic awareness, cueing systems awareness, and fluency (Fisher and McDonald, 2001; Hansen and Bernstorf, 2002). Music enhances the learning of pre-reading and writing skills through the use of nursery rhymes, rhymes in songs, and reading musical texts, encoding and retrieval of information. Both music and reading use a symbol structure that can be decoded into sounds that have meaning, and require visual and auditory discrimination (Tucker, 1981). Fisher and McDonald (2001) examine phonological awareness activities in songs and suggest how music can be useful in early literacy instruction, including concepts of print, a sense of story and sequence, phonological awareness, prior knowledge and vocabulary, basic spelling patterns, and early writing activities.

Hansen and Bernstorf (2002) illustrate the similarities of reading text and reading music, how reading music can facilitate text reading, and discuss the similar decoding skills that are used in reading both music and text in the five areas of reading:

1. Phonemic awareness in the music room creates slower production and greater separation versus spoken language in the regular classroom, and its development is evident in rhyming and segmentation.
2. Phonics/graphophenemic awareness uses letters to represent sound in written language. Music supports early literacy development through a phonics approach to reading by the same letter-sound relationship which enables students to decode new words.

3. Fluency is inherent in music and dance and choral readings, sight identification of high frequency words, notes, and visually matching a single syllable to single note/symbol, early writing activities, and word identification.
4. The vocabulary area in the music room is observed by reading song text, musical terms, biographies, and written instructions, building vocabulary, and incorporating prior knowledge.
5. Finding the main idea, sequencing, summarizing, making predictions, using imagery, retelling, and writing are all comprehension strategies used frequently in the music classroom, as well as print conventions such as the concept that the print contains the message, understanding the difference between uppercase and lowercase letters, left to right orientation, top to bottom directionality, and punctuation awareness.

Recent reading research indicates music has parallels to early literacy development as exemplified by literature from the field including Flohr (2006) who reveals music supports the phonics approach to reading with letter-sound relationships to decode new words, stimulate prediction, and sequencing. Casey and Sheran (2004) emphasize similarities to early literacy skills development with instruction of phonemic awareness including word-play activities and rhyming without explicit instruction, print awareness, and vocabulary and concept development. They further stress the reciprocal relationship between brain development and environmental influences of early literacy students, and the influence of language-rich and print-rich music environments. Furthermore, the research of Eady and Wilson (2004) centers on music with relation to achievement and motivation in language arts, reading and music use symbol structure to decode into sounds that have meaning, auditory and visual discrimination required for both music and reading, and left to right orientation.

Kassner (2002) states music is not created in isolation and it is an important medium of communication and expression linked to other ways of knowing. He indicates parallels to reading include development of phonemic awareness, by rhyming and segmentation, fluency, by expressiveness in reading, vocabulary, by reading song text, musical terms, biographies, and written instructions, and critical thinking skills by analyzing and evaluating. Smith (2000) reveals music supports early literacy by supporting alphabet sounds and letters knowledge, the development of phonemic awareness, building vocabulary, use of prior knowledge, and the teaching of print conventions including left to right, top to bottom, and punctuation skills. Basic spelling patterns in rhymes and songs, word identification, and transfer of knowledge by singing nursery rhymes to different tunes. Additionally, Marshall (1999) parallels music education and teaching children to read by stating both are symbolic, both involve decoding, interpretation, and sound to symbol relations. He continues by indicating both are language and vocabulary rich, they reach all styles of learners, plus they both accentuate aural discrimination, sequential learning, and mid-line development. And Weinberger (1994) maintains that music facilitates reading by enhancing the phonemic stage of learning, with explicit instruction in pitch discrimination, but it is only in music education that pitch training is addressed.

Similarities between reading and music instruction are further illustrated in studies that correlate children's ability to read with the ability to discriminate pitches accurately, as spoken language and musical pitch both depend on auditory attention and discrimination. Musical pitch discrimination and phonemic awareness are both subsets of general listening skills. Listening is a basic component of both musical language and worded language, is the first musical vocabulary acquired, and the first language skill (Gordon, 1983). Aural discrimination, which encompasses musical pitch discrimination, is the first level of Gordon's developmental sequence

of learning musical skills. While phonemic awareness is not a musical skill, it is a form of aural discrimination. Just as phonemic awareness is a crucial step in the acquisition of reading skills, aural discrimination of pitch is a vital component of advancement in musical skills. Lamb and Gregory (1993) found correlational evidence linking phonemic awareness and musical pitch discrimination.

Lamb and Gregory (1993) investigated the relationship between phonemic awareness and pitch discrimination on eighteen preschoolers. This three part correlational study consisted of a simple reading test, an adaptation of the Thomas Coram Research Unit test composed of four subtests: concepts of print, word matching, letter sounding, and word reading; the test of phonemic awareness skills, a modification of the Stuart-Hamilton phonemic awareness test measuring rhyme and alliteration skills, and a test of musical pitch discrimination by an instrument devised by Lamb and Gregory. Findings indicated significant correlations between phonemic awareness and simple reading, phonemic awareness and phonic reading, pitch and phonemic awareness, pitch and simple reading, and pitch and phonic reading, suggesting children who performed well on the pitch discrimination test also scored well in phonemic awareness and reading, while children with poor musical pitch awareness scores tended to have low phonemic awareness and reading scores. Lamb and Gregory (1993) stated, "…an ability to perceive slight differences in phonemes thus appears to depend on the ability to extract information about the frequencies of the speech sounds. It is reasonable to assume that such an ability is related to the discrimination of pitch differences in music" (p. 24). While correlational evidence linking musical pitch awareness, phonemic awareness, and reading did not reveal a causal relationship, it did present the possibility of such.

Butzlaff (2000) examined the association between music instruction and literacy skills in his meta-analysis of six experimental and twenty-five correlational studies dating from 1950 to 1998. He maintains consideration for curriculum integration and further research are justified by providing the following four relationships between music education and early reading skills. First, reading music and written text both utilize symbol systems involving decoding and comprehension reading processes, and secondly, the shared skills between reading music and text require auditory sensitivity and discrimination to letter-sound relationships. Butzlaff (2000) expresses the third relationship to be music reading involves the simultaneous reading of written text with music, followed finally by the social context of music ensembles to be a motivational aspect of learning, which may lead to higher academic achievement, and thus enhance literacy skills. While Butzlaff indicates no causality or reliable effects to be found in the study, he does suggest a consistent correlation between music instruction and reading performance (Scripp, 2002).

A recent Stanford study reveals the brains of musicians process specific aspects of the spoken word differently than nonmusicians and indicates improved cognitive benefits associated with music education and experiences (Gaab et al., 2005). This group of researchers assert enhanced sound perception, more distinguished auditory cues, and more immediate processing of changes within syllables, all essential to understanding and using language, as results of musical training. The study compares twenty-eight adults matched by age, sex, general language ability and intelligence, but divided into musicians, those who began playing an instrument before age seven and have continued to practice several hours every week, and nonmusicians. These participants are first asked to distinguish syllable pairs between same and different with increasing difficulty and then requested to manually reproduce three high/low tone sequence

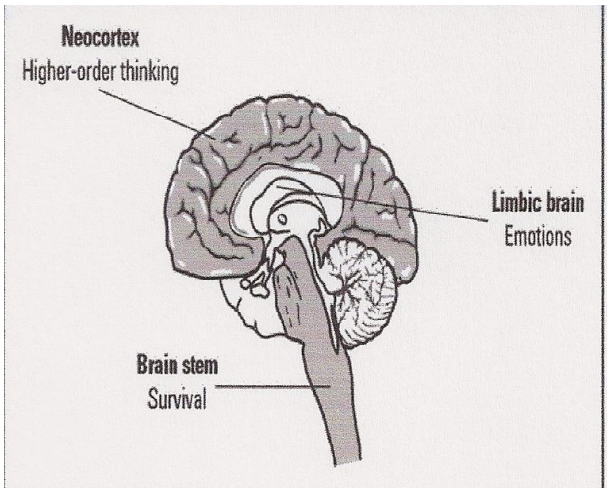
combinations. Findings from the study depict that the musicians more quickly and accurately perceive rapid sound and tone changes than nonmusicians, and it is music instruction which augments brain functions by facilitating auditory discrimination, aiding the very acoustic and phonetic skills necessary for language and reading development.

Brain Development

"The mind is the brain at work" (Berninger and Richards, 2002, p. 3). Educational implications of understanding brain development and functions are vital in promoting brain-based student-centered learning environments. In accordance with educating minds and providing professional preparation about the brain specifically for professionals in the educational field, the following section is devoted to introducing "cognitive neuroscience as a conceptual foundation for educational practice" (Berninger and Richards, 2002, p. 3).

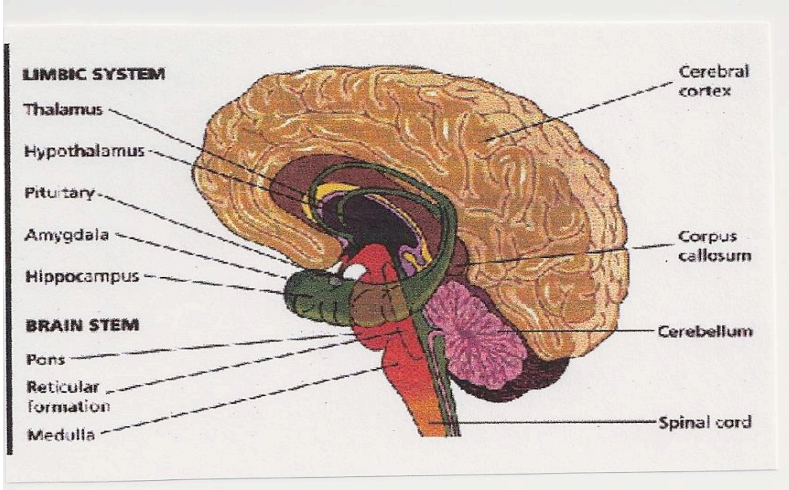
The structure of the existing human triune brain is the proposed result of millions of years of brain evolution. The three brains cooperate and operate as independent systems, each with its own distinct and specific capabilities and responsibilities interconnected by nerves, constitute what we collectively refer to as the brain (MacLean, 1973; Ratey, 2001; Wolfe, 2001).

Figure 2.1 Triune Brain



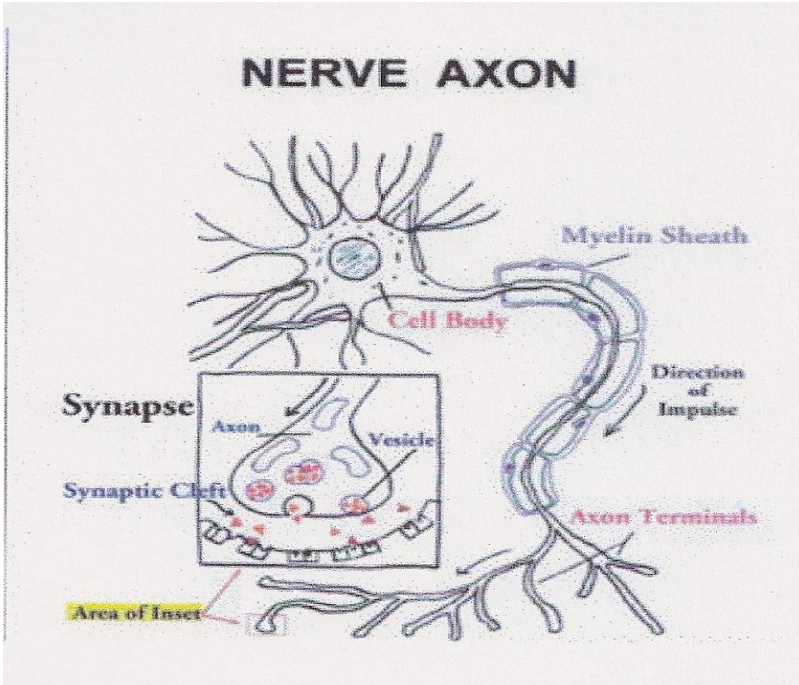
The oldest and smallest brain, the reptilian brain, consists of the brain stem and the cerebellum. Developed from predecessors' brains, the base of the brain is the control center for automatic body processes such as sleeping, waking, respiration, heartbeat, temperature regulation, basic habitual movement and behavior, and the access point for most sensory input. In the middle, the paleomammalian brain or the limbic system, includes the amygdala, hippocampus, and the hypothalamus. While comprising only ten percent of the entire brain system, it is the primary source of emotion, attention, and affective memory. The newest and largest brain, the cerebral cortex or neomammalian brain, is considered the "grey matter" that covers the cerebrum. This brain, also regarded as the neocortex, is responsible for higher cognitive functions and is divided into two hemispheres. The left hemisphere, more linear, rational, and verbal, controls the right side of the body while the right hemisphere controls the left side of the body and is more spatial and abstract.

Figure 2.2 Human Brain Diagram



The neuron, the primary type of brain cell structure composed of the cell body, an axon, and dendrites, is a system responsible for processing information from thousands of sent and received electrical impulses. Axons, the long rooted nerve fibers extending from cell bodies serving as transmitters, are the main way neurons pass on, or teach, information to other neurons, while dendrites are the short branching fibers that extend from the cell body and the main way by which neurons receive, or learn, information (Ratey, 2001, p. 19). The tiny space between the axon of one cell and the dendrite of another cell is referred to as the synapse. It is there that the transmission of the electrical impulse involves the release of a chemical, a neurotransmitter, which passes from one cell to the other across the synapse and is considered the most likely site for the neural mechanism of learning and memory (Berninger and Richards, 2002; Ratey, 2001; Sousa, 2006; Wolfe, 2001).

Figure 2.3 Diagram of Synapse



A plethora of neurons, numbering approximately thirty billion at birth and forming more than fifty trillion connections, or synapses, in the first months of life particularly in the cerebral cortex, require environmental experiences and sensory stimuli to develop and create new synaptic connections (Sousa, 2006; Wolfe, 2001). The two phases of synaptic growth identified by Berninger and Richards (2002, pp. 80-82), are described as "synaptogenesis." Phase one, occurring between two and four months of age, involves an extreme expansion of synapses of nearly ten times that previously present. Infants nearing two months old receive signals from the motor cortex for mastering purposeful movements, and at approximately four months, the synaptic formation in the visual cortex peaks, and the brain refines connections that allow the eyes to focus on an object. Phase two, with a duration from one year of age to adolescence, engages two simultaneous processes of synaptic development and apoptosis, a selective pruning

process by which unused neurons, those failing to develop synapses, expire as the system prunes itself for efficient use (Sousa, 2006).

Glial cells, the non-neuronal brain cell structures known as the "glue" of the nervous system, surround, support, and protect neurons by providing nutrients and oxygen and consuming waste. By insulating the neuron, glial cells create a myelin sheath allowing the coated axon faster and more powerful synaptic activity, generating more complex patterns of thinking, and accelerating the speed of learning (Berninger and Richards, 2002; Sousa, 2006; Wolfe, 2001). Development of the brain's physical structure begins as early as three weeks after conception in alliance with the formation of a baby's brain cells. Berninger and Richards (2002) refer to the ensuing time frame as one of "cell proliferation," as most neurons are produced by four months after gestation, and nearly all are acquired by birth. While neurons do not regenerate in the central nervous system, glial cells do, thus children are not born with a limited amount of glial cells, as they have a prolonged production period extending throughout a child's lifetime, continuing to afford the myelination process for another twenty years.

Schlaug, Jancke, Huang, and Steinmetz (1995), propose that the termination of the myelination cycle coincides with the maturation of the corpus callosum, purportedly "one of the latest fiber tracts in the central nervous system to be myelinated" (p. 700). Their study indicates musicians, compared with matched nonmusicians, have larger than average corpus callosum, the main nerve-fiber tract responsible for enhanced communication and integration of information between the two hemispheres of the brain. Schlaug et al. (1995) provide evidence for a positive correlation between the larger anterior corpus callosum size and the number of fibers crossing through it, suggesting a higher capacity for improved performance in cognitive and motor tasks and interhemispheric transfer. Their study demonstrates the study of music promotes growth of

the corpus callosum and the planum temporale, brain regions associated with auditory processing and some reading skills. These research findings have more recently been corroborated by Janata's studies (2002), which further assert that music study advances greater interhemispheric connectivity between brain regions responsible for emotion and memory.

Emotion

"Our [education] profession has paid little attention to emotion. And yet, our emotional system drives our attentional system, which drives learning and memory and everything else that we do" (Sylwester, 1998, p. 25). Emotion and attention are the neural pathways to all rational cognitive behaviors. The thalamus of the brain is "a major relay center for incoming sensory information and so it informs our brain about what is happening outside our body" while the amygdala is a filter initially interpreting incoming sensory information, to determine emotional content (Sylwester, 1995, p. 45). Connecting the amygdala to the hippocampus converts important short-term experiences into long-term memories, while also exerting enormous influence on the neocortex, the area of higher cognitive processes. Initial input is received first in the emotional paleomammalian brain, and therefore it can react before the logical, rational, thinking neocortex brain is able to respond (LeDoux, 1996; Wolfe, 2001). Jensen states, "emotion gives us a more activated and chemically stimulated brain, which helps us recall things better" (1998, p. 79), especially in an environment that is exciting, engaging, and stimulating, such as a musical setting. While Wolfe (2001) recognizes through thoughtful planning and implementation, emotion can be utilized in classroom instruction to activate cognitive functions, enhancing student learning, and increasing retention of information.

According to Sylwester (1995) and LeDoux (1996), emotion promotes attention, attention enhances learning, and music engages emotion by affecting specified brain regions.

Experimental study findings by Blood, Zatorre, Bermudez, and Evans (1999) and Blood and Zatorre (2001), confirm emotional reactions to music involving the paralimbic and the neocortical brain regions by using positron emission tomography to measure cerebral blood flow changes examining neural systems related to such responses.

And more recently, Damasio (2003) investigates the interaction between emotional and cognitive processes and the role of music. He explains emotion as the foundation for feeling, and feelings evolve from emotion. He further affirms an external environmental influence, an "emotionally competent object" such as a music experience, activates a series of brain/body transitions, and when it reaches the level of conscious awareness, it results in internal feelings (2003, pp. 91-92).

Levitin's (2006) work also focuses attention on emotionally affective responses to music. His 2005 study maps the neural corroboration of how the brain encodes preferred music memories in association with pleasurable emotional reactions by blood flow changes primarily in the auditory cortex. He describes the large number of systems activated by musical experiences producing deep emotions, from the cerebellum to the frontal lobes and the limbic system, as "an exquisite orchestration of brain regions engaging in a precise choreography of neurochemical uptake and release" (p. 71).

In a discussion concerning the relevance of emotions to cognition, Eisner (1982) states that affect and cognition are one and inseparable, one cannot exist without the other since:

> To cognize is to know, then to have a feeling and not to know it is not to have it. At the very least, in order to have a feeling one must be able to distinguish between one state of being and another. The making of this distinction is the product of thinking, a product that itself represents a state of knowing (p. 28).

Eisner (1982) further explained that it is impossible to think without feeling because "such a state could be known only by knowing the feeling that the absence of feeling signifies" (p. 28). Emotional, multi-sensory experiences activate the attentional system of the brain to focus on learning, creating, storing, and later retrieving and relating memories to new learning.

Multimodalities

Howard Gardner's theory of multiple intelligences suggests the measure of individual human intelligence is much more complex than the models presented by traditional theories of intelligence, learning, and development allow and human beings are capable of experiencing the world through a variety of means (1993, pp. 65-67). His theory necessitates the increase of further understanding of students' individual learning differences by exploring multiple domains often not provided for or encouraged in academic settings operating under archaic presumptions that all students can master the same materials in the same manner at the same moment (Gardner, 1983). These traditional modes of instruction and assessment currently employed by educational systems narrowly measure intelligence by predominantly linguistic and logical-mathematical methods while excluding the broad spectrum of schema in which students learn and develop.

Both Piaget and Bruner propose children need concrete and manipulative instructional techniques to enable them to create their own patterns representing the basic concepts to be learned (Bruner, 1966). Bruner's three modes of representation inherently provide opportunities for multimodal learning experiences from the enactive mode, involving tactile and kinesthetic processes, to the iconic mode, inclusive of visual and spatial arts, to the symbolic mode, incorporating coded symbols in the areas of reason and logic. Allowing students to process information through visual, aural, kinesthetic and tactile approaches integrates instructional strategies affecting achievement and meets various individual needs.

Cognition occurs through various neural pathways as the human brain processes experiences diversely dependent upon engaged sensory systems. Promoting student constructed learning experiences through multiple modalities meets varied student learning styles and needs. This broader multimodal perception provides opportunities offering multisensory experiences to students through varied learning styles, inquiry, decision-making, and problem solving. Creating an awareness of individual student differences in learning, how children interact with information and their processing styles, is requisite to producing long-term memory and retention.

Learning style refers to the preferred way in which a child begins to concentrate on, process, and retain information (Dunn and Dunn, 1992). Whereas some children process information by active experimentation most effectively, some children respond to instructional methods of aural and visual stimuli successfully. Learning preferences to be considered for inclusion of instruction should include visual, auditory, kinesthetic, and tactile to accommodate all styles of learners.

Visual learning is a teaching technique in which ideas, concepts, data and other information are associated with images and represented graphically. By visualizing data, students with this strength formulate questions and discover meaning from visual representation and enhance application of visual memory. Students with auditory learning preferences comprehend information most effectively when information is presented aurally by means of verbal instruction such as listening to lectures and speeches. Auditory learning tasks allow students participation in dialogues and discussions.

Haptic styles include tactile and kinesthetic modalities to augment thinking and learning skills. Tactile learners tap into tactile memory by physically manipulating objects with the

fingers and other skin surfaces, such as taking notes, drawing, and doodling, to stimulate neural pathways, while benefiting from hands-on activities such as projects, demonstrations, or lab experiences. Kinesthetic learners engage in learning by means of large muscle activity or gross body movements to activate sensory systems. Students with high energy levels and kinesthetic strength think and learn best while actively moving and physically involved.

Students preferentially perceive and process information from varied multisensory methods by seeing and hearing, reflecting and acting, reasoning logically and intuitively, analyzing and visualizing. The Dunn and Dunn (1978) approach to multiple modalities effectively applies various learning style instruction and incorporates responsive environments to increase student achievement. At the foundation of their model, Dunn and Dunn assert students all prefer different learning environments and modalities, and they all exhibit unique strengths and weaknesses. The exclusive use of one learning style is not conducive to a successful educational program and educators need to strive for a balance of instructional methods. By addressing student learning styles, building upon their natural strengths and expanding their repertoire of alternative learning strategies, it is possible to meet their various educational needs and aid them in successfully attaining educational goals.

Miller (2002) stresses the importance of engaging various neural pathways through multimodality music instruction of conceptual notions. By incorporating multimodal activities utilizing the same piece of music, students are allowed to construct their own deep and transferable understanding of musical concepts. She emphasizes inclusion of multiple modes of representation in the elementary music classroom with a strong foundation in aural methods. "Music is inherently an aural experience, and music class should focus on musical sounds" (Miller, 2002, p. 5).

Using kinesthetic bodily movements to describe musical concepts and reflect musical movement, is an additional educational strategy indicated appropriate for developing children (Miller, 2002), either by formal dance sections corresponding to structured form of the music, or with use of assorted manipulatives, including streamers, paper and magnetic strips. Illustrating auditory concepts through concrete experiences and focusing attention by tactile techniques to listening experiences is yet another means to engage student learning through multiple modalities. Miller suggests the use of individual tapping charts and student listening maps to stimulate tactile learners, provided careful attention is given to accuracy of melodic direction, matched musical phrases, and other concepts of print. In this age of visual predominance, it is increasingly important in the elementary music classroom that the aural modality be emphasized. Regardless of multiple learning styles presented, Miller advises this can be achieved by guiding students in an aural study of a listening selection prior to listening, directing a class discussion following video viewing, as well as adhering to visually representing only aural musical concepts. Miller (2002) notes, "modalities that are not aural must support the sound, not replace it" (p. 8). He further indicates the advantages of a multimodal focus in general music class include increased engagement through use of individual student manipulatives, long-term retention, and transfer of knowledge by learning through stages of enactive and iconic representation before transference to the symbolic level.

The implementation of aural, kinesthetic, tactile, and visual components in an effective primary instructional procedure comprises four stages beginning with the aural exposure as students learn a song or attend to a listening selection (Miller, 2002). Adding the kinesthetic mode when students clap the rhythm, showing the melodic contour with arms, or illustrating the staccato and legato sections of the music with dance movements are suggested as the second

stage, followed thirdly by transferring to the visual mode as the teacher or a student models the use of an iconic representation in a group setting. The fourth indicated stage for multimodal music classroom implementation is providing individual practice and teacher assessment through tactile modalities when individuals manipulate an iconic representation that is similar to the group setting in step three; or when the teacher assesses individual understanding and gives individual assistance. Miller (2002) concludes the article by stating:

> If our goal is for every student to understand the essential elements of music, we must give them the opportunity to interact with music in a variety of ways so that we meet all learning styles and reinforce musical learning through multiple modalities, (p. 13).

Knowledge and Learning

Learning implies the acquisition of knowledge from experience, while thinking involves the conscious processing and use of knowledge. Advancement in emerging technologies has recently provided an expanding body of research with regard to both learning and thinking. The National Research Council's report, *How People Learn: Brain, Mind, Experience, and School* (Bransford, Brown, and Cocking, 2000), based on findings from the neurosciences, developmental and cognitive psychology, summarizes scientific knowledge by studying the cognitive processes of experts compared to novices. Researchers conclude the mind uses knowledge, both direct and observed experience, to "develop coherent structures of information" that are meaningful to the learner and are stored in memory where these structures form the basis of understanding, thinking and problem solving (Bransford, Brown, and Cocking, 1999, p. xi).

The report states when experts encounter new information, they appear to organize the input into "chunks" of related information that are held in short-term or working memory.

"Since there are limits on the amount of information that people can hold in short-term memory, short-term memory is enhanced when people are able to chunk information into familiar patterns" (Bransford et al., 2000, pp. 32-33). As this information is transferred from working memory to long-term memory, it is united with existing knowledge in a significant structure that becomes available to support thinking and problem solving. Expertise knowledge "is not simply a list of facts and formulas that are relevant to their domain; instead, their knowledge is organized around core concepts or 'big ideas' that guide their thinking about their domains" (Bransford et al., 2000, p. 36).

According to the National Research Council's (2002) report:

1. Learning occurs best when new knowledge is connected to prior knowledge that can be recognized as patterns, or "chunks," of related information and organized around major concepts or "big ideas."
2. The ability to acquire and retain knowledge is enhanced when it is acquired through multiple senses and rehearsed over time developing the conditions of application.
3. Transfer is facilitated when conceptual knowledge is abstracted and generalized with ample time allowance from multiple contexts developing "a more flexible representation of knowledge" (p. 78).

"All new learning involves transfer based on previous learning" (Bransford et al., 2000, p. 53). With the initiation of any new experience, the mind relates the new experience to previous experience and the transfer process is iterative. By extending skills and knowledge beyond specific narrow contexts to concepts that are generalized into principles, transfer is enhanced and learning is widely applicable. Learning changes the physical structure of the brain, and the structural changes alter the brain's functional organization, and rehearsal increases

learning. The result is a corresponding relationship between the amount of structural change in the brain and the amount of experience one encounters (Bransford et al., pp. 125-127).

Gaser and Schlaug (2003) indicate structural differences in motor, auditory, and visual brain regions when comparing professional musicians with a matched group of amateur musicians and non-musicians. The findings of gray matter volume differences represent structural adaptations in response to long-term skill acquisition and repetitive rehearsal skills of musician status. The strong relationship between volumetric structural differences, musician status, and practice intensity in the study further supports the proposition that brains of musicians show use-dependent regional growth and structural changes.

While reports of much previous research on structural and functional differences in brains of musicians focus on adults, Schlaug, Norton, Overy, and Winner (2005) examine the brain and cognitive effects of instrumental music training on young children in a longitudinal study and a cross-sectional comparison in older children. This longitudinal study examines the development of young children, ages five to seven, and older children, ages nine to eleven, divided into three groups of music level instruction, over the course of three years. The children in the first group, Instrumental Music Group, receive beginning individual instructions on either piano or a string instrument. In the second level of music instruction, the Non-Instrumental Music Group, children receive a music program four days a week, beginning in kindergarten, of 30 minutes per class session, and the children in the third, Basic Music Group, receive one standard, 30- to 45-minute general music class per week, typical of American public schools music education. Children's progress is tracked through a series of musical and cognitive tests at the beginning of their music program and at the conclusion of each of the three years of the duration of the study, as well as periodic structural and functional magnetic resonance imaging especially designed to

observe the activation of young children's brains when attempting to discriminate between simple rhythms and melodies. Five- to seven-year-old children, after one year of musical training, demonstrate significantly greater change of scores in fine motor skills and auditory discrimination, in addition to showing trends towards evidence for transfer effects in verbal, visual-spatial, and mathematical domains, while data from the correlational cross-section study of nine- to eleven-year-old children, with an average of four years of musical training, suggest that transfer effects and activation of auditory association areas in musicians become stronger. Specifically, Schlaug et al. (2005), assert the instrumental music groups show significantly more gray matter volume in the sensorimotor cortex and bilaterally in the occipital lobe, and strong, but nonsignificant, trends are seen in the phonemic awareness test. These findings suggest effects of music training enhance phonemic awareness skills, as ability to segment streams of sound into small perceptual units is required for both music and language processing.

Memory

Learning and memory processes exist in an repetitive relationship, as learning enables information to cross over the lines of perception into memory and these memories affect future learning (Ratey, 2001). Learning occurs through a process in which "each and every new experience causes the neuronal firing across some synapses to strengthen and others to weaken," a pattern that disappears unless memories become encoded by a process called long-term potentiation (Ratey, 2001, p. 191). Long-term potentiation is "the cellular mechanism that causes synapses to strengthen their connection to one another, coding an event, stimulus, or idea as a series of connections" (Ratey, 2001, p. 191). "The brain's neural networks respond in a pattern that is established by past experience: the more often a specific pattern is fired in response to a stimulus, the more firm the nerve assembly becomes. Hence the axiom: Neurons

that fire together wire together. Input shapes the way we experience the next input" (Ratey, 2001, p. 55).

Short-term memory systems, located in the frontal lobe, hold small amounts of information for only a few seconds at a time. It is the "brain's RAM, or rapid access memory . . . a space where many things can be held together and manipulated, so we can process them, evaluate them, rehearse them, make decisions about them" (Ratey, 2001, p. 131). Whereas, long-term memory systems encode information in the hippocampus, which "like an intelligent collating machine filters new associations, decides what is important and what to ignore or compress, sorts the results, and then sends various packets of information to other parts of the brain" retains information in a reliable fashion over extended periods (Ratey, 2001, p. 188).

Ratey (2001) notes that the brain uses previous experiences and meaning derived from that experience to make new learning easier and expeditious. The brain looks for meaning through patterns, rejecting new facts or ideas appearing isolated or fragmented, and easily recalling from long-term memory holistic experiences. He concludes that learning transfer is facilitated by deep connections within cultural and social contexts and emphasis on relationships among the domains.

Transfer of Learning

While it has been established by recent technological advances that the brain utilizes previous experiences and relationships in the process of learning, Bruner's spiral curriculum proposed "later teaching build(s) upon earlier reactions" in a spiral manner allowing students to continually build upon previous knowledge (Bruner, 1960, p. 53). The spiral curriculum is a conceptual framework designed to reinforce understanding of basic concepts by sequentially experiencing, practicing, and critically examining commonalities and differences of relationships

in multiple contexts, as it increases in depth and detail. In a general-to-detailed, abstract-to-concrete manner new knowledge and skills are introduced, later revisited and reinforced by more formal operational means, and connected with prior knowledge to increase understanding of these relationships, resulting in a rich breadth and depth of information with a broad level of abstraction and comprehensiveness (Bruner, p. 13).

Bruner's constructivist theory is a general framework for instruction based upon cognitive structure providing meaning and organization to experiences and facilitating the use of prior knowledge to generalize and construct new schema or mental models. He described in his transfer of learning theory the need in education for understanding of structures and principles at deep conceptual levels to enable the transfer of cognitive processes from one context to another, not merely the mastery of specific skills and facts (Bruner, 1960, p. 12). Bruner explained that learning can serve the future in two methods, first through "specific transfer" of tasks and skills that are similar to those originally learned and secondly through "nonspecific transfer" of principles and attitudes. "Nonspecific transfer" is the initial learning of general ideas that can be used as a basis for recognizing subsequent problems as variations of the original idea and is "the heart of the educational process - the continual broadening and deepening of knowledge in terms of basic and general ideas" (Bruner, 1960, p. 17). These foundational concepts and structures impact cognitive information processing, and the "more fundamental or basic is the idea he has learned, almost by definition, the greater will be its breadth of applicability to new problems" (Bruner, 1960, p. 18).

Weinberger (1999) concurs with the principle that people learn by using previous knowledge to construct new understandings by defining transfer of learning as the "facilitation of one cognitive ability or motor skill by prior learning or practice in another area" (p. 7). Whereas

Sousa (2006) defines "the most powerful principle of learning [as the] ability to learn in one situation and then use that learning, possibly in a modified or generalized form, in other situations. Transfer is the core of problem solving, creative thinking, and all other higher mental processes, inventions, and artistic products" (p. 136). He asserts that transfer of learning is a two-part progression involving the effect of previous learning on new learning and the possibility that the new learning will be used in the future. As new learning moves into working memory, the hippocampus releases a signal to long-term memory searching for any former learnings that are similar to, or associated with, the new learning experiences. If found, "the memory networks are activated and also move into the working memory" (Sousa, 2006, p. 137). Rehearsal, the assigning of sense and meaning to new learning, contributes to transfer from working memory to long-term memory, both frontal lobe activities, by allowing time to process and review information, elaborate on details, and attach value and relevancy to the learning (Sousa, pp. 85-86).

According to Hunter (1982), the National Research Council (Bransford et al., 2000), and Sousa (2006), four crucial factors of learning affect the ability to transfer previous knowledge. First, the transfer between tasks is related to the degree of similarity of situations and learning. Secondly, critical attributes that distinguish one concept from others also promote transfer. Transfer of learning is thirdly facilitated by the association of events, actions, or emotions in which the recall of one aids recollection of another one. And finally, the context and degree of original learning is important for promoting transfer. Knowledge that is taught in multiple contexts supports learning transfer in which abstraction of relevant features of concepts and development of more flexible representation of knowledge is possible, while the amount of time on task and time spent learning for understanding are key to transfer ability.

The phenomenon of transfer occurs when learning in one context impacts performance in another context. When the ability to extend learning in one context enhances performance in some other context, positive transfer exists, whereas negative transfer is present when learning in one context has negative impact on performance in another related context (Wolfe, 2001, pp. 72-73). Positive transfer is most likely to occur when there is recognition of common features among concepts, principles, or skills and conscious linking to memory information. Both positive and negative transfer include near transfer, referring to the application of knowledge to a specific closely related context and far transfer, referring to the application of knowledge or general principles to a more complex context (Perkins and Salomon, 1988; Sousa, 2006).

Positive transfer is fostered by two broad instructional strategies, "hugging" and "bridging" (Perkins and Salomon, 1988; Sousa, 2006). "Hugging" is a teaching technique invoking the lower form of reflexive transfer by keeping instruction of the new learning situation as close as possible to an environment to be encountered in a future situation. It often employs use of simulation games, mental practice, and contingency learning (Sousa, 2006, p. 159). Alternatively, "bridging" invokes mindful transfer by connecting past to present learning in new situations and contexts by utilizing brainstorming, analogies, metacognition, metaphors and encouraging the construction of abstractions. Effective teaching incorporating both the realistic character of "hugging" and the analytic character of "bridging" supports positive transfer by enhancing present and future learning (Perkins and Salomon, 1988; Sousa, 2006; Wolfe, 2001). To augment the likelihood of knowledge and skill application from one context to another, teaching for transfer is essential. Perkins and Salomon (1988) state:

> First of all, the transfer of basic skills is a routine target of schooling. Fort example, students learn to read *Dick and Jane* or *A Tale of Two Cities* not just for the sake of

> reading other texts but in preparation for a much wider range of reading-newspapers, job applications, income tax forms, political platforms, assembly instructions, wills, contracts, and so on… Another expectation of education concerns the transfer of knowledge. The "data base" students acquire in school ought to inform their thinking in other school subjects and in life outside of school…Finally, transfer plays a key role in an aspiration of education that lately has attained great prominence: the teaching of thinking skills. Students will become better creative and critical thinkers in the many contexts that invite a thoughtful approach. (pp. 22-23)

Transfer through the Arts

Foremost arts educators assent with Perkins (1992), who proposes that teaching for transfer is decisive to the design of effective educational environments and advocates that experiences in the arts can impact student achievement, especially in higher order thinking skills in other context areas (Catterall, 2006; Deasy, 2002; Eisner, 2002; and Winner and Cooper, 2000). The publication, *Critical Links: Learning in the Arts and Student Academic and Social Development* (Deasy, 2002), conducted under the leadership of the Arts Education Partnership, and supported by the National Endowment for the Arts and the Department of Education, is a compendium of paramount arts education research. This compilation of sixty- two studies collected over three years by education researchers James S. Catterall of the Imagination Group, University of California at Los Angeles; Lois Hetland of Project Zero at the Harvard Graduate School of Education; and Ellen Winner of Project Zero and the department of psychology at Boston College, includes a summary of each study, as well as an evaluation of its methods and findings, and a commentary on its significance. It is a comprehensive review that provides

examples of empirical research on the impact of transfer of learning from arts to academics and socialization.

In *Critical Links* (Deasy, 2002), Catterall addresses the topic of learning transfer. He exemplifies evidence to support positive relationships between instruction in the arts and greater student achievement and social development and recommends a broader view of transfer that encompasses skills and abilities that are related to cognition. He suggests that rather than defining transfer in terms of a unidirectional casualty, transfer actually occurs in multi-directional paths creating an enhanced learning environment as the transfer of learning across subjects and domains develops a reciprocal relationship in which learning activities are combined to stimulate and challenge one another. Catterall further states that arts instruction for developing skills and abilities contributes noteworthy opportunities for engaged cross-disciplinary teaching and learning experiences producing positive academic and social effects and influencing cognition and neural processes.

Catterall asserts, "Experiences reorganize neural pathways, neural receptors, and functioning of specific brain regions such that subsequent experiences are received differently," resulting in a cognitive restructuring which is capable of enhancing performance ability (Deasy, 2002, p. 152). Arts-based teaching and learning experiences influence neurobiological systems that support cognitive, emotional, attention, and immune systems by neural reorganization effecting cognitive and affective development. Using a musical example of hearing a single note results in synchronized neural firing patterns. Deasy affirms that arts instruction promotes and maintains this synchronicity, which results in increased efficiency and effectiveness of the brain (Deasy, p. 152). Catterall states:

Thus we establish a neuro-function argument supporting learning through the arts- the

> cultivation of capabilities and understandings that occur as "byproducts" or "co-developments" of the changes in cognitive and affective structures brought about by experience in the arts. More directly, the argument suggests that experiences in the arts create capabilities or motivations that show up in non-arts capabilities. (Deasy, 2000, p. 152)

Upon reflection of the selected studies, Catterall concludes that instruction in the arts affects general academic skill improvements in focus and concentration, expression, creativity, persistence, and imagination, but most dramatically specific literacy-related developments of basic reading skills, language development, and writing skills (Deasy, 2002).

Winner and Hetland included in the compendium *Critical Links* (Deasy, 2002) their own meta-analyses of research on arts transfer. Their conclusions reveal little evidence of a causal link between arts education and general academic achievement, the same deductions pronounced from their authorship of *Reviewing Education and the Arts Project* (REAP, 2000), a Project Zero publication of ten meta-analyses focusing on previous arts research and the affect on academic achievement in non-arts subjects. While their findings suggest one reason accounting for a lack of causal evidence may be a narrowed focus on test scores and grades as outcomes, it is possible that a correlation exists between studies in the arts and improved academic achievement (Winner and Hetland, 2000). They further state that learning transfer can result only if educators explicitly design and develop lessons to reinforce strategies that students can apply across disciplines and domains, as opposed to simply teaching basic facts, rules, or techniques; teaching for transfer and understanding is key.

Winner and Cooper (2000) conclude no direction of causality, but produce evidence of positive correlation between enhanced academic achievement and arts involvement as a result of

a meta-analysis of relevant English language published studies from 1950 to 1998. Meeting the criteria of considering the arts in general, as opposed to learning within specific arts disciplines, inclusion of comparison or control groups, involving an outcome based upon academic achievement, and providing sufficient data presented to compute an effect size, thirty-one studies investigating the relationship between academic achievement and study in the arts can be classified as correlational and experimental groups. The correlational group consists of three meta-analyses, the first considering academic outcomes as composite math and verbal scores, the second studying the relationship between the arts and verbal skills, while the third investigates the arts and mathematics, and basis of two meta-analyses of the experimental group, involve examination of math outcomes and exploration of verbal outcomes. While unable to provide a causal link, the study proposes a positive and significant association, including possible transfer effects, between arts education and the development of cognitive skills and enhanced achievement in academic areas, and "…claim(s) that involvement in the arts improves verbal and math achievement is consistent with the positive effect size found in the studies" (Winner and Cooper, 2000, p, 32).

Nearly half of the studies reported in *Critical Links* (Deasy, 2002) examine relationships between the arts, inclusive of all visual and performing art forms, and literacy, the processes used to acquire and express meaning in symbolic form (Boyer, 1995; Eisner, 2002). Upon reflection of these selected studies, Catterall (2002) concludes that high quality arts instruction, particularly in music, most dramatically affects transfer of the specific literacy-related developments of reading skills, writing skills, and language development, and spatial reasoning skills. He continues to address the transfer of music instruction attributes to academic and cognitive achievement by stating, "Spatial reasoning is foundational to a great variety of cognitive

capabilities – including general knowledge representation, language development, writing, planning of any sort, mechanical design, and navigation" (Catterall, 2003, p. 108).

In his own study comparing test scores of low-income students engaged in instrumental music during their eighth through twelfth grades with demographically matched peers not involved in music instruction, Catterall finds significantly higher levels of math proficiency in the music students. In addition, the study further reveals improvements in academic areas of geography, history, and reading by the participating music students compared to those in the controlled non-musical group (Catterall, Chapleau, and Iwagna, 1999).

Hetland and Winner (2001) suggests scientific implications regarding the synthesis of the "Mozart effect" studies as the highly significant moderately sized effect provides evidence for a causal relationship between enhanced spatial-temporal reasoning performance and listening to music. While the effect is limited to spatial-temporal tasks, defined as mental rotation in the absence of a physical model, the meta-analyses reflect that music other than Mozart's is also shown to amplify such performances. These findings support spatial and musical processing areas of the human brain to be modular but not entirely independent of one another, suggesting cognitive processes usually associated with music primes activation of neural networks with other forms of mental activity, indicating the possibility of cognitive transfer.

Transfer through Music

"Far transfer" evidence concerning the links between music and the cognitive development domain including neurological development, spatial reasoning, and academic achievement can be observed in the experimental studies reported in *Critical Links* (Deasy, 2002). Eisner (2001) describes transfer of learning as "the interaction of and the translation between the arts and language and mathematics as symbol systems, the mediating between

different domains of knowledge which generates the learning as authentic intellectual work" (p. 26), while the work of Piaget attests that operational knowledge, "the ability to manipulate the symbol system rather than rely solely on figural or rote knowledge, is an indication of a higher stage of mental development" (Scripp, 2003, p. 135). Simply stated, the multi-faceted impact of music, language, and mathematic processes result in escalated cognitive functions.

Music employs a symbol system that shares fundamental features with language, including decoding and encoding procedures and syntactic structures, and establishes a spatial-temporal reasoning relationship with both language and mathematics (Catterall, 2002; Hetland and Winner, 2001; Rauscher et al. 1997; Scripp, 2002,). Scripp states "the interconnectivity of notation skills in music supports a positive relationship with achievement in mathematics and literacy" (Scripp, 2003, p. 130). The underlying principles and mental processes shared between music, language, and mathematics creates a natural environment for teaching for transfer through music (Catterall, 2003; Scripp, 2002; Winner and Hetland, 2000), and through multiple representations, the shared fundamental concepts and skills in reading notes, letters, and numbers can be simultaneously addressed in all three domains of music, mathematics, and literacy (Bamberger, 2003; Scripp, 2003).

Scripp (2003) asserts correlations have been found between rhythm and pitch skills and reading and math skills, while improvement in mathematical understanding of pattern recognition and measurement is supported by music instruction of keyboards, scaled bells, or mallet instruments (p. 136). When teaching through music, Scripp includes strategies for improving language skills by developing phonemic awareness through vocal diction and phonological rules. Focusing on the common elements of reading and music processes, he views phonemic awareness and phonics as the recognition of meaningful sound-syllables, then

assembled as meaningful units-words, while utilizing musical notation to teach the same concepts, whereas "a note is the smallest meaningful sound in reading, and groups of notes form meaningful units, like words" (Scripp, 2002, p. 123). Scripp describes four teaching-for-learning-transfer approaches between music and language by stating:

> (1) music and written language employ highly differentiated symbol systems yet both involve analogous decoding and comprehension reading processes (such as reading from left to right, sequential ordering of content, etc.), (2) there are also interesting parallels in underlying concepts shared between music and language reading skills (such as sensitivity to phonological or tonal distinctions), (3) music reading involves the simultaneous incorporation (and reading) of written text with music, and (4) learning in the context of a highly motivated social context such as music ensembles may lead to "heightened academic responsibility and performance" that may enhance reading achievement. (2002, p. 107)

Spychiger's (1999) study of students involved in an augmented music curriculum with less time afforded to language and math, revealed increased student achievement in language and reading skills and remaining stable at math compared to the control group who were not involved with the augmented music curriculum. Because of the similarities of the activities, Spychiger regarded the results to be near transfer effects versus far transfer effects and suggests while it is now generally accepted that transfer effects between music activities and cognitive processes and abilities exist, future research should focus on which aspects and processes of music effect other academic domains and cognitive functions.

Gromko (2005) proposes music instruction benefits young children's development of phonemic awareness, particularly that of phonemic segmentation fluency, an aural skill,

enhancing children's language literacy. Findings support the near-transfer hypothesis of active music making and sound association together with developmentally appropriate symbols may enhance development of cognitive processes leading to significant gains in phonemic awareness. The study compares results from the Dynamic Indicators of Basic Early Literacy Skills subtests of letter-naming fluency, phonemic segmentation fluency, and nonsense-word fluency, of Kindergarten students receiving 30-minute weekly music instruction with Jerome Bruner's constructivist theory of cognitive development as a basis, with Kindergarten students receiving no music instruction. While results of letter-naming fluency and nonsense-word fluency, dependent on grapheme recognition emphasized in primary classrooms as part of understanding the English language alphabet, did not differ between groups, Gromko suggests music instruction's emphasis on aural skill discrimination provides the link to highly improved phonemic segmentation fluency scores and support for the near-transfer theory.

Summary

This chapter reviews research literature related to current views of literacy development, music development, cognitive development and brain functions, and the role of music in learning transfer. Quantitative studies investigating the relationship between treatment of a particular musical technique and a preferred behavioral output flood the present research field, especially with experimental studies limited primarily to designs involving adults and instrumental music pedagogical practices. The progression of this line of inquiry should investigate in the future specifically which aspects of a music experience account specifically for which positive transfer effects to academic areas and cognitive domains (Weinberger, 1999).

Eisner (1996) provides support for a surgence of qualitative research methods by suggesting multiple ways in which the world can be known and represented contribute to human understanding and knowledge. He further declares knowledge to be a constructed form of experience and intelligence to be activated in any form of representation. "Educational inquiry will be more complete and informative as we increase the ways in which we describe, interpret, and evaluate" (Eisner, 1996, p. 9). Very limited qualitative research literature exists regarding the role music plays in developing phonemic awareness and literacy skills in primary public education, with a vast void of any case studies involving music education and early reading development. This provides the need for advancement of qualitative methods and contributions to the field of music education research and impetus for this study regarding general music teachers' perceptions of the role of music education in the acquisition of early literacy.

Viewing children through a constructivist lens allows focus on their active and natural development from dependent to independent music and literacy acquisition with meaningful sensory experiences to abstract symbolic representations while providing a learning environment inclusive of physical, social, cognitive, and emotional elements. Based on psychological aspects connecting music and language acquisition, the theoretical framework for this collective case study guides the research and understanding of how children process the similar developmental sequences of music and language in their learning progression, and suggests cognitive transfer. The research literature reflects the importance of emphasizing conceptual rather than procedural knowledge to establish a solid foundation of prior knowledge, the influence of multi-sensory experiences on cognition and neural reorganization, and developing phonemic awareness in music and literacy skills. "Music's facilitation of learning to read is believed to be a result from

learning to listen for changes in musical pitch, which promotes the ability to sound out new words" (Weinberger, 1999, p.28).

CHAPTER 3 - Methodology

Research Design & Questions

The purpose of this qualitative study was to gain understanding of how music teachers perceive the role of music education in the acquisition of early literacy based on music instruction provided by the three textbook series under investigation. This chapter describes the research methodology and procedures that were used to conduct the study. The information is organized into the following sections: 1) the research design and questions; 2) a description of the participant recruitment and selection; 3) a detailed profile of participants; 4) a clarification of the data collection procedures; 5) an explanation of the instrumentation; 6) a description of the data analysis procedures; 7) the establishment of trustworthiness; and 8) a summary of the chapter.

The goal of this exploratory investigation was to gain understanding and describe music educators' perceptions by addressing the following five research questions:

1. How do elementary music teachers view their role in literacy instruction?
2. How do elementary music teachers perceive how music instruction practices impact student learning and transfer to reading development?
3. How do music teachers perceive how their textbook series address literacy?
4. What factors do teachers perceive affect their knowledge of music instruction as related to early literacy?

5. To what extent does differentiated music instruction, as determined by the textbook series used, account for the variations in the findings of:
    - Question #1. How do elementary music teachers view their role in literacy instruction?
    - Question #2. How do elementary music teachers perceive how music instruction practices impact student learning and transfer to reading development?
    - Question #3. How do music teachers perceive how their textbook series address literacy?
    - Question #4. What factors do teachers perceive affect their knowledge of music instruction as related to early literacy?

Participant Recruitment and Selection

Emphasis of qualitative research is on in-depth analysis of narratives from a selected cultural, or social, scene where multiple data sources can be collected from a small purposive sample (Spradley and McCurdy, 2005). The investigation of this study focused on the public elementary school music educator. Study participants were selected from primary attendance centers in the same Midwestern state that instructed first grade music from one of the three current music basal series publications: 1) *Music Expressions*, Warner Brothers Publications, 2004; 2) *Silver Burdett Making Music*, Scott Foresman, 2005; or 3) *Spotlight on Music,* Macmillan/McGraw-Hill, 2005.

The selection process involved initial contact with individual educators identified by their peers as "exemplary" in their teaching practices who instructed first grade music from one of the three current music basal series publications and were from primary attendance centers in the

same Midwestern state. In addition, information related to persons meeting the criteria for inclusion in the research study was elicited from music education faculty from four different state universities, as well as two of the six elementary district chairs from the state affiliation of the National Association for Music Education. Examining all identified possible participant information revealed only two male potential participants, and upon further investigation it was discovered that the textbook series publications of each male did not meet study criteria, thus the study is limited to females.

A total of nine candidates, three from each of the three publication groups, were invited to participate in the study concerning their views of music education in relation to literacy. The procedures of the study were explained regarding the role of the teacher, teacher rights and benefits, time and risk, the manner in which research results would be disseminated, and guarantee of anonymity by replacement of all proper names, including those of the teachers and their schools, with pseudonyms. All nine prospective study participants were willing to commit to the project, secured permission in accordance to individual school district policies regarding research participation, and read, signed, and have placed on file the Research Participant Consent Form (Appendix A).

Participants

Descriptions of the participants in their individual school settings that follow provide a better understanding of the teaching environments and an interpretive basis for the analysis of information of the selected nine music educators in this study. Their unique qualities as well as commonalities are identified in the following section for the later purpose of analysis.

Music Expressions Participants

The three groups of participants are listed in alphabetical order in adherence to their adopted music basal series publication, although the individuals are assigned in no particular order. The first three participants, Teacher A.1, Teacher A.2, and Teacher A.3, all assigned pseudonyms, used the *Music Expressions*, Warner Brothers Publications, 2004 series, were from three accredited elementary schools, which all met Adequate Yearly Progress, AYP, located across the state.

Teacher A.1 of School 1 is a veteran music educator of ten years. She holds a Bachelor of Music Education degree with emphasis in voice. Her first four years of teaching were in a kindergarten through twelfth grade vocal music setting, while the past six years she has been teaching in the same school, kindergarten through second grade general music. Meeting her students in class daily for twenty-five minutes for three consecutive years, she reports that she is able to develop a rapport with them and their parents. The parents of her students range in age "from the fifties to their teens with approximately half from two-parent homes. " While the Head Start program is available in the district there are additionally "three other pre-schools in town, all associated with a church." School 1, a K-5 school, is nestled in an agriculturally based rural area with an enrollment of 402. The State Department of Education Building Report Card indicates for the school year under examination of the total stated enrollment 95.3 percent are classified ethnically White, the highest percentage of participating schools, 28.9 percent of the student population have disabilities, while 39.8 percent are labeled economically disadvantaged. Economically disadvantaged students are identified as those receiving free or reduced meals by meeting the Federal income eligibility criteria. For this school year, the Federal income poverty guidelines multiplied by 1.30 and 1.85, respectively for free and reduced meals, equate to a household of four receiving an annual income of $26,000 and $37,000.

School 2 has been home to Teacher A.2 since she earned her Bachelor of Music Education degree with an emphasis in vocal music thirty-three years ago. Her entire teaching career has been spent at the same school, "for all these years. It's always been elementary music; kindergarten through six." Admittedly, this will be her last year teaching "her children" and she has already submitted her retirement resignation letter so that a search for a "suitable well-qualified music teacher can be found." She states her building is really an elementary school attached to a Jr.-Sr. High school. One building housing kindergarten through twelfth grades "quite literally located in the middle of a cow pasture. The district is fairly large according to square miles but much of it is farming and ranching." While she is responsible for the primary grades' music instruction, including the first grade students with whom she meets three times a week for thirty minutes of instruction, there is another music educator that is responsible for the upper grades of seven through twelve. She indicates the majority of parents are "middle to upper-middle working class and support education and school activities." While there are no Head Start or pre-kindergarten programs on site, the district is transitioning to an all day kindergarten to be starting the following school year. School 2 is one of very few schools in the state not to have a breakfast program in place mostly because of the sprawling acreage the district covers and the prevalence of busing. For those same reasons, "after-school services are limited but there is an after-school academy for supplemental activities for those students who need help in reading and math." The 349 students enrolled at School 2 are predominantly White, 91.7 percent. Of the nine schools examined, the students of School 2 have the lowest percentage of students with disabilities at 9.5 percent and are near the lowest of economically disadvantaged with 26.1 percent.

Having completed her Bachelor of Music Education degree with emphasis in elementary education, the youngest and least experienced of all the music educators in this study is Teacher A.3. She has just two years of experience to her credit, and she instructs seventeen music classes per day. School 3 is located in a rural small town and houses pre-kindergarten through fifth grade students. One music educator teaches fourth and fifth grade students while she is in charge of general music for grades one through three, each meeting daily for twenty minutes. She describes the parental community of School 3 as "quite involved, with many family connections and a very close community" while admitting "due to the number of students who are bussed in the district, after-school programs are very limited." Their enrollment of 621 includes 17.2 percent of students with disabilities, 26.1 percent economically disadvantaged students, and a majority of 91 percent White students.

Silver Burdett Making Music Participants

Silver Burdett Making Music, Scott Foresman, 2005, was the adopted text for the second group of three teachers participating in this study including Teacher B.1, Teacher B.2, and Teacher B.3. While located in the same region of the state, all accredited and all meeting Adequate Yearly Progress, AYP, their elementary school settings exhibited extensively divergent environments.

With a bachelor's degree in music and a master's degree in curriculum and instruction, School 1 is fortunate to have such an experienced music educator as Teacher B.1. She has taught at this same suburban school for the last twenty years of her total twenty-four years of experience, seeing each class of students for a total of seventy minutes per week. The parents of School 1, a designated kindergarten through fifth grade building, are described as "middle to low-middle class, very supportive, but not as active as in the past." School enrollment is listed at

370, with 90.3 percent of White ethnicity, a moderate 34.6 percent of the School 1 students are identified as economically disadvantaged, while just 10.3 percent, the second lowest of all participating schools, are recorded to have disabilities.

Teacher B.2 obtained her Bachelor of Music Education degree and then "about four or five years later, I went back and got my master's in music education and my emphasis has always been in vocal and general music, although I was primarily an instrumentalist." With twelve years of elementary school teaching experience, she is in her second year at School 2 and the sole music educator for meeting all pre-kindergarten through fifth grade students in class for thirty minutes three times a week. She depicts School 2 as a "middle to upper income neighborhood school in a suburban town with a strong community." The town is "supported by a tremendous number of churches with primarily Christian denominations. Tutoring is provided to all students during the day by various volunteers, para-professionals, and teachers, and an after-school tutoring program is offered and taught by classroom teachers, serving approximately fifty students at no additional cost to the student." The school also "offers a before-school, after-school and summer Latchkey program" to its students. While 89 percent of School 2's 290 enrolled students are listed as ethnically White and 16.2 percent are indicated with disabilities, they are the least economically disadvantaged of the nine participating schools, recording at just 20 percent.

With thirty-one years of teaching experience, ranging from general music to instrumental music, kindergarten through eighth grades, public and parochial, and having a bachelor's degree in instrumental music and a master's in curriculum and instruction, Teacher B.3 is one of two music educators at School 3. She is quite content to limit her teaching to part-time, as it allows her to remain active in other musical activities including directing a church choir, playing piano

and organ at church, and giving piano lessons. While she sees each of her kindergarten through second grade classes everyday of the school week for twenty-five minutes, another music educator teaches the upper grade levels of third through sixth grades. School 3 is located in a rural community that is considered "small but progressive in education and very supportive of music." The Building Report Card indicates the student population at 334 with 93.1 percent White students, the number of students disclosed as economically disadvantaged at 42.2 percent, and students with disabilities reported at 15.9 percent for the school year under examination.

Spotlight on Music Participants

The third grouping of participants, Teacher C.1, Teacher C.2, and Teacher C.3, all employed as their textbook, *Spotlight on Music*, Macmillan/McGraw-Hill, 2005. Other similarities of these three teachers included their individual elementary schools were from the same district, all of which were accredited, and not one achieved Adequate Yearly Progress, AYP, for the school year indicated. Their school environments and profiles were the most widely contrasting of any schools in this study.

Eighteen years of experience as a vocal music teacher, all in the same school district, all in the same building, describes the music educator at School 1, Teacher C.1. She holds a Bachelor of Music Education degree and earned her Master of Music Education degree with emphasis in special education within the past several years through a summer degree program. All 484 kindergarten through fifth grade School 1 students attend music class twice a week for forty-five minutes each. While music is offered to only kindergarten through fifth grades, this urban Title 1 School also houses an Early Childhood Special Education program and half-day pre-school program. As a designated Title 1 School, School 1 offers special services inclusive of "self-contained gifted classrooms, self-contained mentally retarded classrooms, pre-school

services and special education students of many varieties. Our school is a naturally integrated school so the majority of our students are from the immediate neighborhood and we only bus special education and gifted students. It is mostly set up in the inclusion model which includes groupings for remediation of regular education students." The Building Report Card indicates disabilities in 18.6 percent of the student population and 26.3 percent are economically disadvantaged. The ethnicity of School 1 is the most equally dispersed among the participating schools with African Americans, Hispanics, and Other, designated as Native American, Alaskan Native, Asian, Pacific Islander, or Multi-Ethnic, each reporting the second highest percentages of schools in this study, 23.4 percent, 13.3 percent, and 13.5 percent respectively, and White at a near median of 49.7 percent.

School 2 is home to Teacher C.2, the music educator in residence for the past ten years of her twenty-nine years of experience. She has "always taught elementary general music, always in the same city and in the same district" but the buildings and part-time or full-time status have changed over the years. Having completed her Master of Music Education degree four years prior, she is happy to be assigned solely at School 2 with a full-time position. While the school does provide a morning and afternoon pre-kindergarten program, all sixteen classes of kindergarten through fifth grade students from this urban Title 1 School meet with her for a total of ninety minutes each week for music instruction. Of the 415 enrolled students at School 2, the Building Report Card reveals the ethnicity breakdown with the lowest Hispanic percentage of 36.1, the second lowest White percentage of 39.3, 15.7 percent Other, and 8.9 percent African American. While 12.7 percent of the students appear disabled by the State Department of Education for the schools investigated for the 2006-2007 school year, this school has the largest margin of economically disadvantaged students of all participating schools, listed at 87.2

percent, and was the only school in this study to indicate Limited English Proficient, LEP, above 1 percent, reporting 31.8 percent of its students.

Teacher C.3 of School 3 has been teaching in the "same city public schools for twenty-nine years and had been at five different schools. I taught one year in junior high and the rest of my years, twenty-eight of them, have been in elementary school." Along with her years of experience, she has the degrees of both a bachelor's and a master's in music education to prepare her for the 485 kindergarten through fifth grade students she sees twice a week for forty-five minutes. Admittedly she notes, "You have to be really creative and find additional resources for the primary kids to fill up that 45-minute time frame; you have to do a lot more movement with them." She further shares throughout the course of the questionnaire, School 3, part of a large urban school district, is the newest of the participating schools, "built in 2004 with a FEMA safe multipurpose room and cafeteria. It includes twenty-four general classrooms, four special education classrooms consisting of severely mentally disabled, gifted, and two inter-related classrooms. Technology is incorporated in the learning process throughout the school. Each classroom has a SMART Board with projector, and a minimum of three computers per classroom. We also have palms, handhelds and clickers, and two wireless laptop carts are available for use in the classrooms." She continues to comment, "while we have before and after-school Latchkey for those parents needing those services, we also have a supportive group of parents that always volunteer to help." Reporting the highest ethnicity percentage of African Americans at 57.4 percent and the lowest percentage of Whites at 28.8 percent, School 3 additionally rates the second highest percentage of economically disadvantaged students at 69.5 and a third lowest, 10.3 percent, of students with disabilities.

Table 3.1 Participant Demographics

	A.1	A.2	A.3	B.1	B.2	B.3	C.1	C.2	C.3
Experience	10 yrs.	33 yrs.	2 yrs.	24 yrs.	12 yrs.	31 yrs.	18 yrs.	29 yrs.	29 yrs.
Setting	Rural	Rural	Rural	Suburban	Suburban	Rural	Urban	Urban	Urban
Building	K-5	K-6	PK-5	K-5	PK-5	K-6	K-5	PK-5	K-5
Enrollment	402	349	621	370	290	334	484	415	485
Ethnic Majority	95.3% White	91.7% White	91% White	90.3% White	89% White	93.1% White	49.7% White	39.9% White	57.8% African American
Disabilities	28.9%	9.5%	17.2%	20.3%	16.2%	15.9%	18.6%	12.7%	10.3%
Economically Disadvantaged	39.8%	26.1%	26.1%	34.6%	20%	42.2%	26.3%	87.2%	69.5%
AYP	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No

Data Collection

An inductive approach, as was employed for this study, is centered on creation and exploration allowing for categories and theories to emerge from the data and observation. Such an approach further provides personal contact affording the researcher to share knowledge and understanding of the experience while gaining insight from reflection on those experiences, versus taking the role of an objective outsider (Patton, 2001). Furthermore, Patton (2001) regards the researcher as an instrument in identifying three methods of data collection (detailed but open-ended interviews, direct observation, and written documents), which produce three types of data (quotations, descriptions, excerpts of documents) resulting in one narrative description product. Thus, data for this study were collected from a variety of sources: a) audio-recorded semi-structured teacher interviews; b) transcribed field notes of teacher interviews; c)

hand-written classroom observations; d) videotaped classroom observation field notes; e) questionnaire; f) teacher lesson plans; and g) additional artifacts.

The raw data from the above mentioned multiple sources of this study were systematically collected from the participants' environments. Interview sessions were recorded on individual audiotapes and transcribed into Microsoft Word documents with accurate transcript confirmation produced by the researcher performing repeated playings of the recordings to compare with written notes for verbatim accuracy. Hand-written field notes were made both before and after the interviews to record physical descriptions of the classroom, observations of developmental reading characteristics implemented by the teacher, and literacy-related features in the environment on the day of the interview. They were later transcribed by the researcher for verification by the individual teachers and for use in analysis. Participants were also asked to complete a questionnaire (Appendix C.3) to document demographic data pertaining to the population of the schools, advocacy, curriculum materials, and additional advice or comments. All transcriptions were then converted to text files as soon as possible and prepared for coding into Non-numerical Unstructured Data Indexing Searching and Theory-building software for qualitative data analysis, QRS NUD*IST 4.0, N4 *Classic*.

Pilot Study

A pilot study was conducted to identify potential areas in need of revision. While limited to one participant from a school not included in the study, it provided the opportunity for the researcher to establish the approximate interview session duration time and aid in the development of the instruments by evaluating practical application of presentation, sequence, and pacing. The researcher was allowed to modify materials and procedures, incorporating comments and suggestions from the music teacher, as result of the pilot study.

Data Collection Procedures

The qualitative interviewing techniques of this exploratory investigation were designed to gain insight into music educators' perceptions toward the role of music education in the acquisition of early literacy. Responses to open-ended questions on the interview guide provided the researcher with quotations revealing the participants' experiences and basic perceptions, which are the main source of raw data (Patton, 2001). The use of open-ended descriptive questions provided the opportunity for music teachers to individually reflect upon their own teaching with regards to literacy, stimulated the flow of conversation, encouraged participation, and allowed the teachers to describe what was meaningful to them in their own words rather than being restricted to previously designated categories.

All interview and observation sessions followed the same protocol with data being collected during first grade music classes in the schools of the nine study participants identified by the researcher. Teachers were reminded of the purpose of the study and reassured that the interest of the researcher was in their perceptions with no right or wrong answers to the questions. Any and all raw data collected from this study was secured in a locked file cabinet in the office of the researcher and is to be destroyed five years after completion of the research study, with a summary of the findings available to the teachers at their request.

As with any investigation using human subjects, this study had to meet with the approval of the Kansas State University Internal Review Board. As there were "no known risks," the Internal Review Board reviewed and granted approval for this study without any stipulations (Appendix B).

Data Collection Instruments

Teacher Interviews

In this study, the interview was used as a qualitative technique to generate the narrative accounts investigating the perceptions of the role of music education toward early literacy. Teacher interviews were conducted either before or after the classroom observations in a location of convenience on school premises. Audio-recordings of the interviews were transcribed verbatim in a timely manner, and then submitted to the teacher for verification of accuracy. The interviews consisted of open-ended questions derived from the related research literature, developed and written by the researcher.

A preliminary set of questions were compiled and edited, presented to graduate student research peers for their scrutiny and review, revised, utilized in the pilot study, further edited, and resulted in a set of ten questions (Appendix C.1).

Classroom Observation Field Notes

All classroom observations were conducted personally by the researcher and consisted of two class periods. Dependent upon the established schedule of classes for each of the nine music educators, class periods ranged in duration from forty to ninety minutes. No request was made to control the objective or content of the lesson. During classroom observations, the researcher kept written accounts recording information concerning physical descriptions of the classroom, observations of developmental reading characteristics implemented by the teacher, and literacy-related features in the environment on the day of the observation. Classroom observations were also videotaped for the purpose of environmental analysis with extreme care being given not to include any student's face or identity.

With use of sample observation instruments, Local Systemic Change Observation Protocol and Faculty Development Observation Protocol developed by Weiss (1997), this researcher devised a format to facilitate data recording of observation field notes on a three-column sheet, with observation notes recorded in the left column and reflective notes recorded in the right column (Appendix C.2). A middle column was designated for the purpose of lesson activity with an allowance of a small margin to indicate future coding notation. Hand-written classroom observation field notes and video-recordings were transcribed to text by the researcher as soon as possible following the visit and imported into the participants' Non-numerical Unstructured Data Indexing Searching and Theory-building software for qualitative data analysis, QRS NUD*IST 4.0, N4 *Classic*, software file.

Questionnaire

The prototype questionnaire administered during the pilot study yielded feedback to identify weaknesses in regards to vocabulary and ambiguous questions. The final questionnaire used (Appendix C.3) represented a modified version of ten questions intended to elicit responses that gained insight to the music educator's perspective and allowed for the emergence of themes and common qualities.

Data Collection Relationships

The following illustration (Table 3.2) served as a reference point to the relationships between the three research instruments and the research questions for this study. The data collection instrumentation and analytic techniques were listed on the top row while the research questions were listed on the left column. A relationship between the two was indicated with an "X" on the intersecting cell.

Of the three data collection instruments used in this research study, two categories were represented: self-report and researcher observation. The first data collection instrument included formal interviews from nine music educators self-reporting via verbal response, while the second data collection instrument involved classroom observations by the researcher. And the third data collection instrument consisted of a questionnaire, requiring a self-report written response to selected questions. Each of the three instruments used for data collection, having been described previously, can be found in Appendix C.

Table 3.2 Relationship of the Data Collection Instrument to the Research Question

	Data Collection		
	Teacher Interview	**Classroom Observation**	**Questionnaire**
Research Question #1: How do elementary music teachers view their role in literacy instruction?	**X**	**X**	**X**
Research Question #2: How do elementary music teachers perceive how music instruction practices impact student learning and transfer to reading development?	**X**		**X**
Research Question #3: How do music teachers perceive how their textbook series address literacy?	**X**		
Research Question #4: What factors do teachers perceive affect their knowledge of music instruction as related to early literacy?	**X**		**X**
Research Question #5: To what extent does differentiated music instruction, as determined by the textbook series used, account for the variations in the findings of questions 1-4?	**X**	**X**	**X**

Data Analysis

Merriam describes data analysis as "the process of making sense out of the data" (2001, p. 178). At a rudimental level, qualitative analysis involves examining the assembled relevant data to determine how they answer the evaluation questions. The analytical framework for this study was based on an inductive iterative process with the primary instrument for this qualitative study being the researcher.

Multiple sources of data in this case study were collected and analyzed, inclusive of a) transcribed audio-recorded teacher interviews; b) transcribed field notes of teacher interviews; c) transcribed hand-written classroom observation field notes; d) videotaped classroom observation field notes; e) questionnaire; f) teacher lesson plans; and g) additional artifacts.

N4 Classic *Qualitative Data Analysis Software*

The data collected from transcribed teacher interviews and field notes, hand-written and videotaped classroom observation transcriptions, as well as questionnaire responses, were analyzed, or coded, using Non-numerical Unstructured Data Indexing Searching and Theory-building software for qualitative data analysis, QRS NUD*IST 4.0, N4 *Classic* software in order to identify roles of music educators and the five elements of literacy instruction as stated in the report by the National Reading Panel (National Institute of Child Health and Human Development, 2000): phonemic awareness, phonics, vocabulary, fluency, and comprehension, while remaining open and reflexive to other emerging themes. N4 *Classic* was designed to facilitate coding and retrieval of qualitative data with ideas flexibly stored in annotations and rich text memos that can be coded, linked, or searched. The initial coding categories were created using roles of music educators (Appendix D), the pre-established five elements of literacy

instruction code, and supplementary codes that emerged. The N4 *Classic* software allowed further node development as coding was accomplished.

Preparing transcripts for data analysis using N4 *Classic* involved determining text unit size, the smallest piece of text possible to be referenced by N4 *Classic* and coded. A text unit could be a word, a sentence, or a paragraph and is marked with a hard return prior to importing a document into the N4 *Classic* program. For this study, the text unit was designated as a sentence. Once transcripts were prepared and text units were indicated, documents were imported into N4 *Classic*, displayed and then printed on numbered lines. The data analysis process involved repeatedly reading each line of each transcript in an effort to facilitate the researcher's understanding of the transcript, as a whole. As the process evolved, the identification of roles of music educators and literacy instruction elements, as interpreted by the researcher, fit into themes or patterns which where then coded to the appropriate children node or nodes that had been named according to the themes.

Once all transcripts were coded, N4 *Classic* produced reports that revealed only the coded roles and elements identified by the researcher. The node report was then read by the researcher and searched for slighter degrees of the pre-established literacy elements within the children nodes allowing for sub-grouping of roles into clusters. Their characteristics were then identified within the subgroups or clusters and used to develop and clarify definitions of further developing themes.

Document Analysis

Merriam asserts "documentary data are particularly good sources for qualitative case studies because they can ground an investigation in the context of the problem being investigated" (2001, p. 126). Document analysis is considered an unobtrusive method in which

to evaluate objective data sources (Merriam, 2001). This study included documents inclusive of a) transcribed audio-recorded teacher interviews; b) transcribed field notes of teacher interviews; c) transcribed hand-written classroom observation field notes; d) videotaped classroom observation field notes; e) questionnaire; f) teacher lesson plans; and g) additional artifacts such as the State Department of Education Building Report Cards, thus providing "contextual richness" to the final narrative description (Guba and Lincoln, 1981).

Establishing Trustworthiness

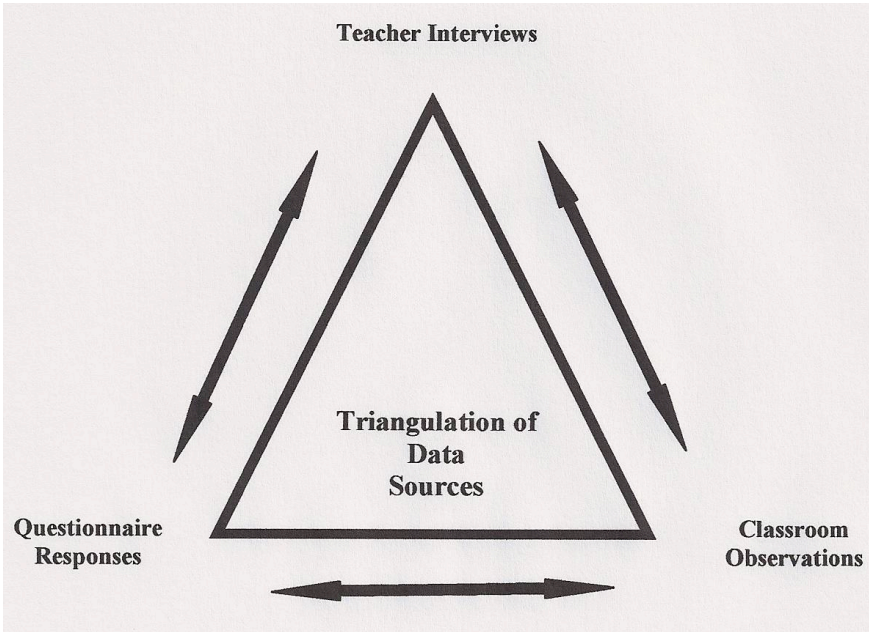
Multiple data sources strengthen this qualitative research study establishing trustworthiness through the creation of credibility, methodological rigor, and confirmability (Yin, 2002). Credibility is the most important component of trustworthiness and was established in this qualitative research study through the triangulation of data generation and collection, member checking, and the incorporation of a quantitative data component, the Building Report Card. The researcher confirmed the accuracy of transcribed responses with each participant, the primary source of data, through member checks providing a layer of assurance that the perspectives were credible, balanced, and un-biased (Patton, 2001). Methodological rigor was obtained by using multiple sources of data gathering such as audio-recorded interviews, hand-written and video-recorded classroom observations, and questionnaire responses. Multiple sources assured redundancy, allowed the emergence of themes, and provided confidence in the researcher's interpretation (Patton, 2001). Confirmability, referring to the degree in which results can be confirmed or corroborated by others, was attained by using multiple data sources and data collection modes (Yin, 2002). Data from participants' interviews, hand-written and

video-recorded classroom observations, and collected questionnaire responses achieved such quality in this study.

Triangulation

Data is triangulated through multiple data sources, thus providing corroborating evidence to confirm the data and allowing the researcher to examine the phenomenon from more than one lens (Patton, 2001). To increase the validity of the study conclusions, triangulation methods were embedded in the research process. Triangulation was achieved in this study by using multiple data sources and validating each piece of information with at least one other data source (Creswell, 1998; Merriam, 2001; Yin, 2002). Data were collected through teacher interviews, hand-written and video-recorded classroom observations, questionnaire responses, and additional artifacts for this study.

Figure 3.1 Triangulation of Data



Inter-Rater Reliability

Inter-rater reliability is necessary to guard against the introduction of subjective bias in the coding and analysis of qualitative data, which could otherwise display potentially adverse consequences and lead to inappropriate conclusions (Patton, 2001). During the triangulation process, the researcher coded three sets of transcribed interviews randomly chosen from the data pool of transcribed teacher interviews. These same coded interviews and codes with code descriptions were given to graduate student research peers with an explanation of the codes and their descriptors, as well as an opportunity for clarification questions. Following coding by both the researcher and graduate student research peers, inter-rater reliability for interview data was calculated. Inter-rater reliability was calculated for transcribed classroom observations using the same procedure for three randomly chosen classroom observations with the same codes and code descriptions as those used for the interviews.

Summary

Chapter Three provided details concerning the research design and questions including qualitative methodologies. A description of the participant recruitment, selection process, and a detailed portrait of each participant in their school environment was provided along with the instruments used for data collection in this case study. The data analysis procedures, including the Non-numerical Unstructured Data Indexing Searching and Theory-building software for qualitative data analysis, QRS NUD*IST 4.0, the N4 *Classic* process of coding and document analysis were reported, as well as the establishment of trustworthiness.

CHAPTER 4 - Analysis of Data

This qualitative case study was designed to identify music educators' perceived roles in early literacy skills of first grade students, as well as to explore possible differences based on textbook basal series selection used by the participants. The following chapter includes: 1) overview of the study; 2) results of the study; 3) discussion of the findings; 4) summation of the results; and 5) summary of the chapter.

Purpose of the Study

The purpose of this qualitative study was to provide a greater understanding of first grade general music teachers' perceptions of the role of music education in the development and acquisition of early literacy. Using a multi-site case study designed to examine and present this analysis of nine first grade general music teachers' perceptions based on music instruction provided by the three textbook series under investigation, resulted in this collective case study.

It was the goal of this exploratory investigation to contribute to qualitative research in multiple ways. The first contribution was to inform educators in the future development of literacy-based curricula. Secondly, it was to provide administration and pre-service educators with what experiences are needed to increase music educators understanding about literacy development. And the third contribution was to further development and use of qualitative methods in music education research to gain understanding.

This collective case study was directed toward better understanding first grade elementary music teachers' perceptions of the role of music education in the attainment of early literacy by the following research questions:

1. How do elementary music teachers view their role in literacy instruction?
2. How do elementary music teachers perceive how music instructional practices impact student learning and transfer to reading development?
3. How do music teachers perceive how their textbook series address literacy?
4. What factors do teachers perceive affect their knowledge of music instruction as related to early literacy?
5. To what extent does differentiated music instruction, as determined by the textbook series used, account for the variations in the findings of:
    - Question #1. How do elementary music teachers view their role in literacy instruction?
    - Question #2. How do elementary music teachers perceive how music instructional practices impact student learning and transfer to reading development?
    - Question #3. How do music teachers perceive how their textbook series address literacy?
    - Question #4. What factors do teachers perceive affect their knowledge of music instruction as related to early literacy?

Emphasis of this research focused on the public elementary school music educator. The investigation of this collective case study was conducted in a Midwestern state over a period of five weeks, from February 2007 to March 2007. The participants were from primary attendance centers that instructed first grade music from one of the three current music basal series publications: 1) *Music Expressions*, Warner Brothers Publications, 2004; 2) *Silver Burdett Making Music*, Scott Foresman, 2005; or 3) *Spotlight on Music,* Macmillan/McGraw-Hill, 2005.

The selection process involved initial contact with individual educators identified by their peers as "exemplary" in their teaching practices and meeting the criteria set forth above.

A total of nine candidates, three from each of the three publication groups, were invited to participate in the study concerning their views of music education in relation to literacy. The procedures of the study were explained regarding the role of the teacher, teacher rights and benefits, time and risk, the manner in which research results would be disseminated, and guarantee of anonymity by replacement of all proper names, including those of the teachers and their schools, with pseudonyms. All nine prospective study participants indicated their willingness to participate, committed to the project, and secured permission in accordance to individual school district policies regarding research participation.

An inductive approach was employed for this study, allowing for categories to emerge from observation and theories to emerge from the data. The data for this study were collected from a variety of sources including: a) audio-recorded semi-structured teacher interviews; b) transcribed field notes of teacher interviews; c) hand-written classroom observations; d) videotaped classroom observation field notes; e) questionnaire; f) teacher lesson plans; and g) additional artifacts. Developed from the literature review for this study, research instruments included the interview questions, the classroom observation tool, and the questionnaire.

One-on-one interviews were conducted with each of the nine music educators at her convenience in order to understand each teacher's perspective and opinion. The interviews employed open-ended descriptive questions derived from the related research literature, developed and written by the researcher, and lasted approximately forty-five minutes. Interview sessions were recorded on individual audiotapes and transcribed into Microsoft Word documents with accurate transcript confirmation produced by the researcher performing repeated playings of

the recordings to compare with written notes for verbatim accuracy. Additional questions and issues that emerged during the course of the interview were also included as data.

Classroom observations were conducted to further explore literacy development relations with a focus on the public elementary school music educators' environment. Two first grade music class sessions were observed in a close time approximation to the interview. During the classroom observations, both field notes and video-recordings were kept regarding information concerning physical descriptions of the classroom, observations of developmental reading characteristics implemented by the teachers, and literacy-related features in the environment on the day of the observation for the purpose of analysis. Hand-written classroom observation field notes and video-recordings were transcribed by the researcher to text as soon as possible following the visit and imported into the participants' N4 *Classic* software file.

Participants were also asked to complete a questionnaire to document demographic data pertaining to the population of the schools, advocacy, curriculum materials, and additional advice or comments. The questionnaire represented a modified version of ten questions intended to elicit responses that gained insight to the music educator's perspective and allowed for the emergence of themes and common qualities. Transcriptions of the participants responses were converted to text files as soon as possible upon completion of the questionnaires and prepared for coding into N4 *Classic*; QRS NUD*IST 4.0 Non-numerical Unstructured Data Indexing Searching and Theory-building software for qualitative data analysis.

Multiple data sources strengthened this qualitative research study establishing trustworthiness through the creation of credibility, methodological rigor, and confirmability (Yin, 2003). The principles of triangulation, member checks, and inter-rater reliability were incorporated into this qualitative research study to establish trustworthiness. Triangulation

methods were embedded in the research process to increase the validity of the study conclusions. It was achieved by use of multiple methods of data collection including audio-recorded semi-structured teacher interviews, field notes of teacher interviews, and classroom observation field notes. Confirmation of the accuracy of transcribed responses with each participant, the primary source of data, through member checks provided a layer of assurance that the perspectives were credible, balanced, and un-biased (Patton, 2001). The participants supplied their feedback in both written and verbal formats corroborating the findings and interpretations as presented with all responses indicating accurate representation. This study was checked for inter-rater reliability with the assistance of four graduate student peers who were currently conducting qualitative research. Concurrence was found and related with the methods, findings, and interpretation of this study.

The analytical framework for this study was based on an inductive iterative process with the primary instrument for this qualitative study being the researcher. Data analysis was ongoing, beginning with the first interview and observation as this researcher attempted to gain a deeper understanding of the participants' perspectives and continually refine their interpretations. Multiple sources of data in this case study were collected and analyzed, inclusive of a) transcribed audio-recorded teacher interviews; b) transcribed field notes of teacher interviews; c) transcribed hand-written classroom observation field notes; d) videotaped classroom observation field notes; e) questionnaire; f) teacher lesson plans; and g) additional artifacts.

Transcribed collected data were coded using N4 *Classic* software in order to identify initially the roles of music educators and the five elements of literacy: phonemic awareness, phonics, vocabulary, fluency, and comprehension. In effort to answer the research questions, the

data were analyzed as a result of repeated readings. Emergent themes were identified and serve to inform these findings.

Results

The following section of the chapter reports the analyzed findings of the quantifiable data based on the research questions in this study. Results were determined from the data collected from interviews and questionnaires of the nine study participants and are presented in the following five sections.

Research Question #1

How do elementary music teachers view their role in literacy instruction?

To address the first research question that guided this study, the researcher presented the participants with open-ended questions revolving around roles of music educators. Specifically, interview questions number two and three (Appendix C.1) and questionnaire items number two and eight (Appendix C.3) were designed to elicit responses indicating the participants' perceived roles in literacy instruction as music educators to answer research question number one. The nine study participants provided replies that identified their perceived roles as music educators mainly centered on their relation to other educators. Three themes emerged from the data of research question number one; occupational roles, independent roles, and synergistic roles. Occupational roles depicted by the study participants were described as roles common to all educators, while independent roles were those roles specific to elementary music educators. Synergistic roles were considered those roles in which the participants indicated their interaction with others.

Occupational Roles

The expansive theme of occupational roles, defined for the purposes of this study as characteristics shared with classroom teachers in developing literacy of early readers across different curricular areas. Although focused on literacy, the teachers considered the three subdivisions of instructional qualities, leadership responsibilities, and tasks and duties to be part of their work.

Incorporated in the instructional qualities sector of occupational roles, all nine participants of this study expressed the importance of teaching and educating. Three of the participants in this study further referred specifically to teaching the music standards (Appendix D). And a third instructional quality reported by seven of the nine participants was the significance of planning and preparation. Teacher A.1 explained the importance of planning and preparation by stating, "It's a good thing I'm close to the office because I'm always there. I have a pile, I'm always going in there. This week, obviously, I was doing grades. We have to have grades entered in the Power School, Power Grade, whatever it is. The "specials," art, music, and PE, have to have them in on the fifth nine weeks, or the fifth week of the nine weeks, we have to have something entered. And then, obviously, you print them off and I close my grades out a week ahead because they do have to get through three people before they get to the regular classroom teacher." She went on to say, "Getting organized. I try to make a point in my head, that this has just worked for me, every Thursday before I leave, I have to have those lesson plans done for the following week, because you never know what's going on Friday. We might have a snow day, or a sick kid, or something, and that also gives me a day, that Friday then, to get all the copies sent over to the copy center and such."

Leadership responsibilities indicated by five study participants included such functions as committee representation at department, building, or district levels for music and fine arts areas, curriculum matters, text adoption, and professional development. Two participants provided information describing the mentoring of inexperienced teachers as part of their leadership responsibilities. Teacher A.2 commented, "I no longer see K anymore, Kindergarten because I am also now a coordinator. So, I've given up Kindergarten so I can work with other students with this project. Kindergarten gets music instruction from a para with an early childhood degree. I mentor her and I oversee her. I have provided her with the materials and an over-view of where they need to be. She's doing a marvelous job." Three other participants reported involvement in professional meetings and organizations. When asked about her role in literacy instruction, Teacher B.2 mentioned those leadership responsibilities by replying, "I attend professional meetings, and I serve on various district committees for music, and curriculum, and materials selections and technology selections. Then, I also have responsibilities teaching my classes. I also spend, have time scheduled in my day where I tutor in different classrooms. So, I'm in the Kindergarten classroom, I'm in the first grade classroom, and I'm in the second grade classroom, usually working with individual students on literacy skills or helping teachers get more one-on-one time with their kids."

Identified by all nine study participants as a third occupational role were duties and tasks related to all elementary educators. Those duties mentioned included scheduling, tutoring, additional school activities, copying, janitorial/custodial duties, and creating and assembling bulletin boards. Teacher C.3 added, "Today, some things that were not in my schedule, I helped with lunch behavior problems, them we had two awards assemblies that I had to help with, and

so it's just been a very busy day. And tomorrow, we have the school carnival, which is from 4 to 8 o'clock. All of us volunteer to work at least an hour, so it's been a very busy week."

Providing further duties, Teacher C.2 shared the following, "Other than just the normal stuff, you know, I've got to help out. Like just for instance, last week, we totally turned the schedule upside down, so we could accommodate the State testing schedule; so they could have an uninterrupted block of time. Just normal, everyday stuff that we get dumped on. You know, that's just part of being a music person. During the State testing schedule, the special ed kids don't take the same test as the "regular kids," and the special ed test was given in the afternoon. So, in the morning, I had special ed guest helpers in our classroom all morning. Then when I have my three helpers and I get the Kindergarten class that has three helpers, I ended up with six guest helpers and 26 Kindergarteners. That kind of thing. And, it's not just me. PE had it; library had it. In fact, the helpers that were in the library misplaced a whole bunch of books and the librarian can't find them. I mean, they'll show up, but it's just that kind of thing. And you know, we were asked. It wasn't a mandate. But still, what do you look like if you don't? So, you know, you just kind of got to deal with it."

Additional tasks consisted of traffic guard, bus monitor, and cafeteria supervisor. Continuing education duties including workshops, classes, seminars, and conferences were also revealed as an occupational role.

Independent Roles

Among the multiple roles of elementary general music teachers indicated by the study participants, in addition to that of the occupational role, was that of an independent role, specific to music and music teaching. From the social characteristics and occupational situations specific to music educators, those certain qualifications, specialized skills, knowledge, and techniques

that music teachers possess, three themes emerged as the functions of music educator, director, and advocate.

Supplemental to the occupational role qualities, all nine of the participants' responses described the music educator as also assuming the attributes of: professional musician, composer, arranger, concert pianist and accompanist; adjudicator; coach and promoter; sound and electronic equipment expert; purchasing agent and transportation director. Teacher B.3 reported assuming some of those roles when she replied, "I teach music to the primary students but I'm also accompanying some of the junior high and high school kids for a contest. I give piano lessons to students after school and a couple of guitar lessons."

The director responsibilities of the independent roles addressed by five participants of this study included that of: producer; actor; opera director; dancer; stage manager; set designer; props crew chief; and seamstress. Teacher C.3 commented, "I have a music program coming up on Thursday with second grade, "Music Colors Our World" so we've been making sets for that. We're not using costumes this time, so that's a relief. And we're having extra rehearsals for all of the second grades, so I'm really busy. I have a fifth grade program coming up later. And we're also doing a Parent Variety Show to raise money for a bench for the courtyard because our principal is retiring, so I'm in charge of that too."

While the advocate functions expressed by each of five participants varied from supporting and promoting music, music education, and the arts; providing a liaison for students and to parents; and building rapport among multi-ages and levels, they each conveyed their belief in the value of music for its own sake. Teacher C.1 mentioned the following, "The role of myself and music education is to provide instruction and guidance to students to meet the national standards of music and to be a liaison to parents for further information and guidance as

the opportunity arises. Music is a great way to extend boundaries of the curriculum, but it's greatest value of music is for it's own sake."

Synergistic Roles

In addition to occupational and independent roles identified by the elementary music teachers that participated in this study, the theme of synergy also emerged. The synergistic roles as represented in this study include the three sectors of partnership, curricular integration, and communication. The results indicated that the participating teachers see themselves as a collaborative part of the school environment.

The partnership subdivision of synergistic roles comprised responses from all nine participants indicating a team effort with other classroom teachers, or within the whole school, was needed for providing the best education to students. Teacher B.2 stated, "I think that I play a role in everybody's, like every teacher, every staff member here, works together, you know, to make the students better educated. And its just part of the picture. So, I see myself as a friend. I see myself as a professional peer that can, that someone can rely on, relate to, ask advise from. I see being in a partnership with the classroom teacher, helping them better their curriculum. I see my curriculum improving the abilities of the students and I also think that we just work together as a good team."

All participating music teachers further specified integration with other curricular areas, inclusive of reading, mathematics, and social studies, necessary to enhance reading and literacy development among students. Teacher A.2 shared, "Our principal regards music as an important part of the curriculum. We are encouraged to integrate subjects as much as possible. When we did the math curriculum, we analyzed the music curriculum as well to see where we can plug in. Same way with reading, the PE teacher and I have done some integrated work together, and of

course, art is integrated to the music. You wear not just a music hat, but you're a part of the over-all curriculum here; of equal importance, really." And adding to the curricular integration role, Teacher B.1 replied, "I really believe that music education gives students a strong background in just about everything. It helps them, I believe, with math and with reading. I believe whole-heartedly that the brain activity that music engages them in, helps them develop reading activities. It makes them stronger in math and I just really believe that is true."

And finally, communication was designated as an essential element amongst all levels of music educators, other curricular area colleagues, teacher education programs, and the general public. In agreement, Teacher A.3 stated, "Music teachers and general classroom teachers must keep the lines of communication open between the music teacher and classroom teacher. They can partner up to enhance learning for students. Classroom teachers can keep music teachers abreast on the lessons they are teaching in the classroom so the music teacher can help reinforce lessons. Music teachers can use activities or songs to help with reading development that some students may need more help with. The whole school should work as a team to aide in the total education of students."

Table 4.1 Roles of Music Educators

	A.1	A.2	A.3	B.1	B.2	B.3	C.1	C.2	C.3
Occupational Roles									
Instructional Qualities: • *Teaching* • *Standards* • *Plan/Preparation*	X X	X	X X	X X	X X	X X	X X X	X X	X X X
Leadership Responsibilities	X			X	X		X		X
Tasks/Duties	X	X	X	X	X	X	X	X	X
Independent Roles									
Music Educator	X	X	X	X	X	X	X	X	X
Director				X	X	X	X		X
Advocate	X				X	X	X	X	
Synergistic Roles									
Partnership	X	X	X	X	X	X	X	X	X
Integration	X	X	X	X	X	X	X	X	X
Communication	X	X	X	X	X	X	X	X	X

Research Question #2

How do elementary music teachers perceive how music instructional practices impact student learning and transfer to reading development?

Interview question number four (Appendix C.1) and questionnaire items number three, six, and seven (Appendix C.3) were designed to answer research question number two. The intent of the question was to elicit from the participants their thoughts of, first, what music educators accomplish during music class that affects student learning and, secondly, how it transfers to reading development. Results of the data for research question number two, part one, identified

three emergent themes inclusive of dimensions of learning, aspects of success, and lifelong qualities.

Dimensions of Learning

Music instruction impacts all dimensions of learning in all learners regardless of specified curricular content was a theme conveyed by eight of the nine study participants. Each of the eight responses indicated music instruction to be an essential element of a total education. Not only was music instruction perceived necessary for a complete education, it was repeatedly stated by the same participants that while music can keep learners actively engaged, it also encompassed all areas of learning.

Teacher C.3 expressed to me during the interview her sincere desire to provide optimal opportunities for all of her students to experience a quality music program. One that included development of musicianship in singing, rhythmic responses, and performance skills on instruments. A program lead by a knowledgeable loving music educator who could provide experiences of exemplary music sounds, activities, and materials. A music program that provided musical experiences rich with creative expression, rhythmic movement, and quality listening activities. A program that enhanced reading literacy and offered authentic connections to math and science daily. A music program that would nurture children to become lifelong learners of the arts. I felt the students at her school, more than any of the other schools represented in this study, deserved to have every opportunity that could be afforded them, in order to improve their chances of success and to receive a total education.

The overall growth and development of the child was another area of expressed significance as five of the nine study participants indicated physical and emotional skills to be directly impacted by music instruction. Some of the detailed dimensions affirmed repeatedly

were those of cooperative group interactions, left-right orientation, and gross and fine motor skills. Teacher B.3 expressed, "Oh, I feel like music education is so important for the over-all development of the student. It helps their movement, their gross motor skills, their fine motor skill, and is helps with their reading skills. We do a lot of right side, left side movement things that help their reading skills. Music is very important for a total education program."

Six participants of the study responded specifically that they perceived music instruction to impact the brain and cognitive skills. Their responses frequently citied brain development, crossing both hemispheres, memory, growing neurons, as well as the development of critical thinking and communication skills, as aspects influenced by education in music. Teacher B.2 commented, "Music is a whole-brained activity. That is why mothers sing to their babies. It stimulates the entire brain, allowing it to learn faster, remember faster, and to be coordinated with its body. Music aids in the memorization of facts. Music aids in the understanding of the rhyme and meter in our spoken and written language. Music further enhances our ability to spell and use the alphabet by taking the concept that a symbol can represent sound; just as letters represent a phoneme in a word, notes represent a pitch in music."

The third dimension of the learning theme identified by the study respondents involved curricular connections. Curricular connections for purposes of this study are defined as integration of music instruction with other curricular content areas. Results of the data indicated that all nine participating teachers believed music instruction enhanced student learning across the curriculum. Specifically, each of the participating teachers articulated their belief that music instruction reinforced reading skills. Participant responses were also communicated in support of music education in the areas of overall academic achievement and other curricular connections, inclusive of core subject areas such as history, social studies, and science. Seven of

the nine study participants acknowledged that music instruction impacted mathematic skills. Supporting the impact of music instruction on curricular connections, Teacher B.2 stated, "Music crosses cultural boundaries, historical boundaries, and geographical boundaries, bringing understanding and acceptance among people. Music is mathematical, concrete, and abstract."

Aspects of Success

In addition to dimensions of learning, the theme of aspects of student success also emerged from the data for research question number two. The educators involved in this study perceived three aspects of music instruction to impact student success. Enhancing self-confidence and positive self-concept was one aspect expressed by five of the nine educators to be affected by music instruction. Teacher A.2 confirmed that aspect by stating, "The performing aspect of music helps develop communication skills and self-confidence. Our school mission statement, adopted years ago when the demand for curriculum and school improvement began, states, the staff and community of this elementary school believe that it is our privilege and responsibility to serve as facilitators for nurturing and developing every child's academic, physical, social, emotional, and creative potential. Music has been and continues to be an integral part of our elementary curriculum."

A second aspect of student success depicted by the same five participants indicated music instruction as an aid in academic achievement in all learners, but especially in developmentally delayed learners. In agreement, Teacher B.2 stated, "I think some students learn and find success in music, as well as all of the other arts and PE. For some children, music is the only success that they experience during the day. Music may be the bright spot in their day. And I think sometimes that their only positive part of their day. We already see that some kids not being able to get music or PE because of being pulled out for speech or for tiered-reading and things

like that. And even though the tiered-teachers who pull them out for different things like that have alternate activities and try to teach things in a different way than the classroom teacher, it's a big concern that those students aren't getting the opportunity to really excel in the one positive part of their day. They don't have to have all of the academic skills that they are missing in order to participate and find success in music."

And thirdly, three study participants described the theme of creativity to be positively influenced by education in music as an aspect of student success. Teacher B.1 replied, "I strongly believe that music education enhances a child's life. Maybe those who are not strong in reading or math and are strong in the arts, gain a little something extra part of their life. It's a part of their life that I think helps them to be creative, maybe gives them a source, or an output, that they are not able to reach in math or reading or other areas of their studies." And Teacher C.1 adds, "Music education provides students with an opportunity to find success in themselves and artistic creative abilities that deserve to be nurtured at a critical learning time in their lives."

Lifelong Qualities

The third theme to emerge from the data results supplied by the study participants responding to the research question number two was lifelong qualities. All nine of the educators participating in this study supported at least one of the lifelong qualities they perceived to enhance human life. Results of the data identified three indicators perceived to be impacted by music instruction included: appreciation, cultural value, and quality of life. Appreciation of music as part of everyday life, the first indicator, was expressed by six of the educators. This indicator of lifelong qualities was characterized by participants' repetitive responses including lifelong learners of the arts, intelligent lifelong consumers of music, and an educated and informed part of society. Expressed by Teacher A.2, "Music is a part of everyday life. It is

nearly impossible to go through a day without encountering it in some form. It is an integral part of life celebrations, worship, and even used to sell products to us. I do not expect my music students to become major performers or music educators. I have worked for many years as a professional stage hand and fully understand that to be a professional artist, one has to have remarkable talent and be will willing to make sacrifices to become a performer. Instead, it is my goal that students become life-long, intelligent consumers of music, whether they choose to appreciate it by listening to or attending performances, or whether they become involved in amateur performing groups such as church choirs, community theater, community bands or orchestras."

Cultural value was a second indicator identified by four of the educators. The participants considered music instruction to impact cultural value by describing crossing cultural boundaries inclusive of historical and geographical boundaries as well. Teacher C.3 stated, "Music education sometimes provides the only additional music activities, like the symphony and like the ballet, that these students ever get to experience. They only get to go while they're at school. A lot of times their parents will not take them because they can't afford to take a family of four or five, or the interest is not there. But we, at school, through music, can provide cultural experiences that they'll remember for a lifetime."

The third indicator of lifelong qualities, reported by six of the study participants, was expressed as quality of life. The results indicated by those six educators of this study perceived the quality of life to be enhanced by music instruction. They suggested quality of life attributes supported by music instruction include sheer enjoyment and aesthetic value.

Table 4.2 Music Impacts Student Learning

	A.1	A.2	A.3	B.1	B.2	B.3	C.1	C.2	C.3
Dimensions of Learning									
Total Education		X	X	X	X	X	X	X	X
Growth & Development:									
Physical & Emotional	X	X		X		X			X
Brain & Cognition	X	X		X	X	X		X	
Curricular Connections:									
Reading	X	X	X	X	X	X	X	X	X
Mathematics			X	X	X	X	X	X	X
Aspects of Success									
Self-confidence & Self-concept	X	X		X	X		X		
Academic Achievement	X	X		X	X		X		
Creativity				X			X		X
Lifelong Qualities									
Appreciation		X	X		X	X		X	X
Cultural Value			X		X		X		X
Quality of Life	X		X	X	X	X		X	

Research question number two was designed to obtain from the study participants two components. Part one elicited their perceptions of what music educators accomplish during music class that affects student learning, and part two how music instruction transfers to reading development. Results of the data for research question number two, part two, identified a strong connection between music and language acquisition in early literacy development. Teacher B.2 shared her thoughts by stating:

Reading Standard 1, benchmark 1, of reading corresponds with the music benchmark of reading and notating rhythm and pitch and the manipulation of these "sound producers." Benchmark 2 of reading targets fluency like in music. Music notation is read exactly like written words, top to bottom, left to right. Understanding and identifying spoken phrases and musical phrases are also alike, focusing on expression, rhythm, pacing (tempo). Music aids in being able to read fluently, too, because the music never stops for the individual to figure out the word, but makes the individual keep pace with the group. In benchmark 3, there is a association of understanding the text by using contextual clues in reading to musical clues that aid in the understanding of the overall meaning of the text in music. And reading benchmark 4 focuses on the use of various types of written language, much like our cultural study of various forms of music and the purposes they serve throughout history. Music classes also take time to find out who the composers are, much like an author. We study the form of music, just like text structure in studied in the reading and language setting, beginning, middle, end, ABA, etc.

Reading Standard 2, benchmark 2, examines the cultural connections between the reader and the author, much like music from different cultures has special connection and meaning to those from those cultures. That same music, when shared between two cultures can then bring a different perspective from a person outside that culture.

The responses from each of the educators participating in this study indicated they all perceived music instruction enhanced overall reading skills, but then specifically indicated the five components of early literacy. These five components, identified by the National Reading Panel, (2000), considered the five pillars of comprehensive reading curriculum, include phonemic awareness, phonics, fluency, vocabulary and comprehension. Teacher B.3 provided

the following examples of how music instruction enhances the five reading areas in her music room:

> Standard 1, benchmark 1, is about phonemic awareness and phonics; we do alphabet songs, use the big book pictures to help tell the story of the songs or the subject of the song. We sing songs with rhyming words, make up new rhyming words in the songs, and read rhyming words from the board. We learn a lot of nursery rhymes in song, and we use sight words to learn songs.
>
> Standard 1, benchmark 2, is about fluency; we do lots of choral readings.
>
> Standard 1, benchmark 3, is about vocabulary; we make use of picture clues and use synonyms and antonyms in songs.
>
> Standard 1, benchmark 4, is about comprehension; we discuss the text and any new words or words that have different meanings. We sing sequential songs that add words or phrases. We also act out story songs and improvise story songs.

Results of the data report all nine of the study participants positively addressing multiple indicators of the phonemic awareness and phonics reading components of early literacy. Of the educators involved with this study, seven acknowledged fluency as a perceived area of learning transfer from music instruction to reading development. The same seven participants identified the vocabulary component as well. The fifth component of a quality reading curriculum, comprehension, including the concepts of print, was designated by, again, all nine educators as a perceived area of learning transfer. Teacher A.1 indicated perceived areas of learning transfer to specific reading standards, benchmarks, and indicators addressed with specific music activities, supported by the National Music Standards. She included:

> Standard 1, benchmark 1, indicator 6; finding repeated patterns in songs, like "Down by

the Bay." National Music Standards 1, 2, 4, and 8.

Standard 1, benchmark 2, indicator 1; reading stories with sounds, like "The Grouchy Ladybug" and "Jump, Frog, Jump" and encouraging students to chorally join in on the repeated sections. Singing sequence songs with repeated passages, such as "Old MacDonald" and "This Old Man." And using songs that allow children to discover and use rhyming words "Honey, You Can't Love One." National Music Standards 1, 2, 4, and 5.

Standard 1, benchmark 2, indicator 3; doing a unit on the book, "The Grouchy Ladybug." First we share the story, then use instruments to help tell the story and encourage students to join the repeated sections with appropriate vocal expression. Learning the song "The Pretty Princess" and then acting out the song. Using echo reading in echo songs, like "The Green Grass Grew All Around." National Music Standards 1, 2, and 6.

Standard 1, benchmark 2, indicator 4; Using choral readings, such as "Three Little Muffins" or "Three Little Monkeys." National Music Standards 1, 2, 5, and 8.

Standard 1, benchmark 3, indicator 2; when learning songs, introduce and discuss the meaning of unfamiliar words and what they mean, as in "If You're Happy and You Know It." We also do a movement activity involving action words, and assign students an action word, such as stomp, punch, or fly, and have them make them into a motion piece. National Music Standards 1, 3, and 8.

Standard 1, benchmark 4, indicator 3; big book lessons that require the students to look at the picture story of a song and predict what the song will be about, or the sequence of a song, such as "There was an Old Lady who Swallowed a Fly." National Music Standards

1, 2, and 8.

Standard 1, benchmark 4, indicator 8; use of charts to aid in learning a song. story sequence cards for songs like, "Little Cabin in the Woods." National Music Standards 1, 2, and 8.

Standard 1, benchmark 4, indicator 9; use of puppets to tell a story in a song, like "Five Green and Speckled Frogs" and "The Three Pigs," or using paper figures on a background to tell the story of "Peter and the Wolf." National Music Standards 1, 8, & 9.

Standard 2, benchmark 1, indicator 3; cards that require a student to put into the correct order after hearing a sequence type song, such as "Must Be Santa" and "The Little White Duck." National Music Standards 1, 2, and 8.

Table 4.3 Reading Standards Indicators

	A.1	A.2	A.3	B.1	B.2	B.3	C.1	C.2	C.3
Phonemic Awareness & Phonics									
1.1.1		X	X		X	X	X		
1.1.2			X		X	X			X
1.1.3	X		X		X	X	X		
1.1.4	X		X		X	X		X	X
1.1.5	X		X	X	X		X	X	X
1.1.6		X	X		X				
1.1.7			X		X			X	
Fluency									
1.2.1	X	X	X		X	X	X	X	
1.2.2			X		X	X			
1.2.3	X	X	X		X			X	
1.2.4		X	X		X		X	X	
1.2.5	X	X	X					X	

	A.1	A.2	A.3	B.1	B.2	B.3	C.1	C.2	C.3
Vocabulary									
1.3.1			X		X	X	X	X	
1.3.2		X	X		X			X	
1.3.3	X		X			X			
1.3.4	X		X					X	
Comprehension									
1.4.1		X	X	X	X	X	X	X	X
1.4.2	X		X		X			X	
1.4.3	X	X	X					X	
1.4.4	X		X		X			X	
1.4.5		X	X		X	X		X	
1.4.6		X	X	X	X	X	X	X	
1.4.7	X	X	X		X		X	X	
1.4.8	X	X	X				X	X	
1.4.9	X	X	X				X	X	
1.4.10	X		X					X	
2.1.1	X	X	X	X			X	X	X
2.1.2	X	X	X	X			X	X	
2.1.3	X	X	X					X	
2.2.1	X	X	X		X		X	X	X

Research Question #3

How do music teachers perceive how their textbook series address literacy?

The third research question to guide this study was answered by interview questions eight and nine (Appendix C.1) and questionnaire items number four and five (Appendix C.3.) Study participants were presented with these open-ended questions centered upon literacy features

incorporated in their current textbook series. From the results of the data of research question number three, two themes emerged, the areas of literacy strengths and aspects of literacy limitations.

Literacy Strengths

The areas study participants indicated as perceived literacy strengths of their textbook series included statements about literacy in general but specific comments encompassing all five of the early literacy components as well. Six of the nine educators reported they perceived their textbook positively focused on the component of phonics, and five of the educators specified the component of phonemic awareness, inclusive of aural discrimination skills, a strength in the area of literacy. Teacher C.3 considered aural discrimination a strength of her textbook, and she stated, "Our current music series has excellent listening experiences for students. This is the best series that we have had that incorporates a variety of listening examples for children. Many of the listening lessons are the original. Our children must learn to aurally discriminate between sounds before we can move on in development." Teacher B.3 agreed that her textbook provided literacy strengths by replying, "It definitely leads students into the reading and all the rhythm things we do, develops hands-on skills. There's a lot of listening skills that we develop and that's important for learning literacy. We do a lot of rhyming. We'll take a song and change the words and make new verses to it."

Six participants of this study identified the early literacy component of vocabulary. Each of the educators reported generally or described areas of vocabulary as a perceived textbook literacy strength, while a single participant replied favorably to the element of fluency. Teacher C.3 commented, "Our textbook really supports literacy. At the bottom of every page, or at the end of each song material, it always has a literacy connection. Ways that we can incorporate

different ideas with our song, vocabulary words, and some ideas how to extend the lesson, etc. There is a huge connection to literacy in this textbook." And Teacher C.1 added, "This textbook has a good structure for reading literacy. It builds in some of the reading concepts and even highlights them throughout the series, so it shows what reading standard we're meeting. It gives us lots of extra ideas to support literacy." The results of the data indicated four of the nine participants perceived comprehension to be a strength of their series mentioning indicators such as comparing and contrasting information, responding to questions, and sequencing events.

Literacy Limitations

Among the results of research question number three, the study participants indicated in addition to areas of literacy strengths, their perceived textbook series deficiencies. From these aspects provided by the music educators emerged the theme of literacy limitations. All nine of the participants of this study replied to enhancing their textbook series with a variety of other resources, but eight commented on the use of other books. Teacher A.2 described her use of additional books in her curriculum as she stated, "I usually use ideas from other music series, or from workshops I've attended that I feel gets the concept across to the students in a way that reinforces the series curriculum and keeps all the students engaged in learning. When you've taught for 34 years, you've had the opportunity to work with several series and pick up the best ideas from them."

The expansive theme of books reported by the eight educators used to supplement their textbook series identified three aspects, books in general, children's picture books, and past textbook series. Mentioning books in general was declared by three of the study participants, while two of the participants specified the inclusion of children's picture books to enhance their music instruction. Teacher B.3 stated, "I use a lot of seasonal materials and children's picture

books. I use some Orff and rhythm activities, and quite a bit of literacy materials from *Music K-8*. Other sources I use include past textbook curriculums, materials from workshops, and ideas from other music teachers." And the third aspect of literacy limitations incorporated the use of past textbook series. Five participants of this study described augmenting their current textbook series with textbooks from the past. Teacher C.2 supplied the following, "I supplement my current textbook series with previous adopted texts. For example, I do a unit on "Peter & the Wolf" with first grade and pull materials from older Silver Burdett textbooks. I might use songs from *Exploring Music*, or previous Macmillan adoptions."

Table 4.4 Literacy Strengths and Limitations

	A.1	**A.2**	**A.3**	**B.1**	**B.2**	**B.3**	**C.1**	**C.2**	**C.3**
Textbook Strengths									
General	X					X	X		X
Phonemic Awareness	X	X			X	X	X		
Phonics		X			X	X	X	X	X
Fluency							X		
Vocabulary	X		X		X		X	X	X
Comprehension		X	X		X			X	
Supplemental Resources									
General			X		X		X		
Children's Picture	X						X		
Past Textbooks		X				X	X	X	X

Research Question #4

What factors do teachers perceive affect their knowledge of music instruction as related to early literacy?

Interview question number ten (Appendix C.1) and questionnaire item number six (Appendix C.3) were created to answer research question number four. The intent of the research question was to obtain responses from the study participants conveying their beliefs as to what impacted their early literacy knowledge within the curricular realm of music. Responses provided by each of the nine music educators in this study revealed two emerging themes of literacy training opportunities, those dependent on the employer and those independent of the employer. For the purposes of this study, dependent opportunities were defined as those perceived by the participants as early literacy training opportunities provided within the school district and independent opportunities were those sought personally outside of the school district to affect their knowledge in relationship to music instruction.

Dependent Opportunities

Early literacy knowledge perceived to be impacted by dependent opportunities was expressed by seven of the study participants. The seven replies identified three sectors of early literacy training that were provided within the school district. The three sectors included training of literacy programs to be implemented school-wide, meetings, and workshops. Results of the data for research question number four provided two of the music educators in this study to be involved with training opportunities of school-wide literacy programs for which they believed to impact their early literacy knowledge as it pertained to music education. Teacher A.1 explained what she learned from a school-wide literacy training program by stating, "We were all trained to use a program here in our school called *Animated Literacy*. We all learned and knew the songs that went with each letter of the alphabet. In Kindergarten, they focus on a certain letter on a

certain day, and in first and second grades, we begin the year with a review of each song in the Learning Lab. We don't start social studies until we review every single character. We have a huge transfer population, and we've got to make sure everyone is caught up to start with, so we're all on the same page. *Animated Literacy* truly helped with the reading development of our students. I can see the process. I know where kids should be and where we're moving them towards. I'm going to tell you, because of this learning situation, we've got better singers and better artists. You can see the kids progressing across the board a lot faster, just by the way we use *Animated Literacy*."

The second dependent opportunities sector, meetings, was indicated by six study participants to include two classifications, staff development and faculty meetings. Of the six participants to report early literacy training provided by the school district, three participants stated training was delivered through staff development meetings by personnel beyond the building faculty in attendance. Teacher A.2 revealed literacy training she received by responding, "Through staff development meetings, we have stressed reading development and literacy at our school. We really went in and worked the curriculum, and we were all a part of that process. Everyone was included, so we have a better idea of the development process for our students. And now, on Tuesdays and Thursdays, for about five months out of the year, we have a half hour period that we all teach reading."

The second classification of meetings conveyed by the music educators of this study, faculty meetings, was reported by four study participants as a perceived factor to impact their knowledge of early literacy within their curricular area. Perceived literacy knowledge was described by Teacher C.3 as, "coming from sitting in faculty meetings with classroom teachers and attending workshops. We have a lot of workshops in the building that deal mainly with

literacy in the textbooks, and just by sitting in faculty meetings and going to workshops I've learned a lot. Just listening to conversations with the classroom teachers and the things they've shared with me has provided me with knowledge about literacy development in young students. The new reading textbook series that they're using, *Treasures*, has been given to us. So we know what unit they're working on, and we can enhance the same concepts in the music classroom. It's very, very helpful."

And the final sector of dependent early literacy training opportunities was specified as workshops. Five of the study participants communicated their perceived knowledge of early literacy came from workshop training provided by their school district. Teacher A.2 provided she experienced literacy training "by attending the workshops for the Warner Brothers textbook series; they are so research-based. The Warner Brothers series uses Edwin Gordon's theories and progressions. The people that wrote the series really connect well, I think, with the literacy development part; starting with movement, then icons, and then talking about notes."

Independent Opportunities

The theme of independent opportunities refers to the early literacy learning experiences the study participants had independently of those provided by the school district. Results of the data indicated eight educators perceived the early literacy training from independent opportunities, outside the employer requirements, impacted their literacy skills as related to music education. Their responses designated two avenues from which independent opportunities derived, higher education and books. Four study participants indicated they perceived coursework in higher education influenced their knowledge of early literacy in relation to music instruction. Teacher C.2 explained her perceived literacy knowledge acquisition resulted from, "my Master's program of study. And beyond that, it has just been trial and error. You know, all

the classroom teachers were just stressed to the max about State testing and *No Child Left Behind*. We're encouraged by the administration and by the university music people to reinforce literacy as much as we can. Reading is everybody's problem. It's not just a classroom problem, it's everybody's problem. So, I try to incorporate of as many ways as I can to reinforce reading and literacy. When there's a little blurp about the song in the book, I have the students read it aloud. You know, we talk about vocabulary, we read the words of the song, especially with the little ones, just because they need that reinforcement."

The other avenue articulated in the replies of the educators was that of books. The six educators describing books, textbooks, or other, as a perceived factor supporting early literacy information connected to music education, made the decision to seek learning experiences independently of those opportunities supplied by their school districts.

During the interview and observation of Teacher B.2, it was quite clear of her love of books. Or maybe it was even a smaller unit that that? Maybe it was words she really loved? This teacher had words everywhere! On the walls, on the ceiling, on the floor up front and in back, under the chalkboard, on instruments, and nearly every possible imaginable place in the room. And then, there were the books. She definitely had a passion for both.

When I inquired about the preponderance of books, she simply replied that these were some of her hundreds of books. She used them in her classroom to create new songs or sound pieces. Some were songs that were turned into books, and others were books that had been turned into songs. Some books she used because of their rhythm and rhyme, yet others for their form. And then there were her instructional books; all the books that instructed her how to use "books." Is it any wonder, that when asked how she perceived her literacy knowledge was obtained, she replied, "Through books."

Table 4.5 Early Literacy Learning Experiences

	A.1	A.2	A.3	B.1	B.2	B.3	C.1	C.2	C.3
Dependent Opportunities									
School-wide programs	X	X							
Meetings: • *Staff Development* • *Faculty*	X	X	X		X	X			X X
Workshops		X		X	X	X			X
Independent Opportunities									
Higher Education			X	X			X	X	
Books		X		X	X	X	X		X

Research Question #5

To what extent does differentiated music instruction, as determined by the textbook series used, account for the variations in the findings of each of the first four research questions:

Question #1: How do elementary music teachers view their role in literacy instruction?

Question #2: How do elementary music teachers perceive how music instructional practices impact student learning and transfer to reading development?

Question #3: How do music teachers perceive how their textbook series address literacy?

Question #4: What factors do teachers perceive affect their knowledge of music instruction as related to early literacy?

The intent of research question number five was to identify possible variations in the study findings affected by which textbook series was used. Participant responses to the previous four research questions were disaggregated by series usage and examined for possible trends

indicating differences attributed to differentiated materials for music instruction derived from the three different textbooks. The first three study participants, Teacher A.1, Teacher A.2, and Teacher A.3, used the *Music Expressions*, Warner Brothers Publications, 2004 textbook series. *Silver Burdett Making Music*, Scott Foresman, 2005, was the adopted text for the second group of three teachers participating in this study including Teacher B.1, Teacher B.2, and Teacher B.3. And the third grouping of participants, Teacher C.1, Teacher C.2, and Teacher C.3, all utilized as their textbook, *Spotlight on Music*, Macmillan/McGraw-Hill, 2005. The results implied by disaggregating the data only on the basis of textbook series usage are reported by the individual research questions that follow.

Research Question #1

How do elementary music teachers view their role in literacy instruction?

The intent of research question number one was to elicit responses from the nine participants providing replies that indicated their perceived roles in literacy instruction as music educators. The participants supplied answers mainly centered on their relation to other educators. Three themes emerged from the data of research question number one; occupational roles, independent roles, and synergistic roles. Occupational roles depicted by the study participants were identified as roles common to all educators, while independent roles were those roles specific to elementary music educators. Synergistic roles were considered those roles in which the participants indicated their interaction with others. Results of the disaggregated data indicated the three roles provided by the study participants offered by the three series groups were quite similar and without wide variations in the findings. Each of the three textbook series groups commented on exactly the same number of aspects in regards to synergistic roles, while

Spotlight on Music participants replied to just one more role aspect overall amongst all three roles than either of the other series.

Research Question #2

How do elementary music teachers perceive how music instructional practices impact student learning and transfer to reading development?

Research question number two was intended to elicit from the participants their thoughts of, first, what music educators accomplish during music class that affects student learning and, secondly, how it transfers to reading development. Results of the data for research question number two, part one, identified three emergent themes inclusive of dimensions of learning, aspects of success, and lifelong qualities. The disaggregated data indicated responses by participants of the three textbook series were of a narrow margin for each of the threes themes but revealed dimensions of learning had the largest difference in total responses with three. The findings of the study further reported the *Silver Burdett Making Music* participants conveyed replies more frequently to all of perceived learning aspects impacted by music instruction.

Research question number two was designed to obtain from the study participants two components. Part one elicited their perceptions of what music educators accomplish during music class that affects student learning and, part two, how music instruction transfers to reading development. Results of the data for research question number two, part two, identified a strong connection between music and language acquisition in early literacy development. Study participants selected indicators from the State Reading Standards (Appendix C.4) with which they believed were addressed through instruction in the music classroom. The responses from each of the educators in all three textbook groups participating in this study indicated they perceived music instruction enhanced overall reading skills, but also specifically indicated the five components of early literacy, phonemic awareness, phonics, fluency, vocabulary and

comprehension. However, disaggregated data presented findings representing a wide variance of results, with the exception of phonemic awareness and phonics components of early literacy, Standard 1. Benchmark1. Calculations of the disaggregated data regarding the reading standards indicators were made by adding the total number of indicators among the three teachers per series group and then dividing by the total number of possible indicators. Results showed both *Music Expressions* and *Silver Burdett Making Music* groups responded to twelve of the possible twenty-one indicators, resulting in 57%, to that indicator, while the *Music Expressions* group surpassed the other series groups with the remaining indicators by the widest margin in the study. In all, the State Reading Standards had thirty possible indicators distributed among the two standards and six benchmarks. Multiplying the thirty possible indicators times the three teachers in each series group resulted in a total of ninety overall possible indicators. While all three groups of participants designated the five reading components of literacy instruction indicators as perceived areas of learning transfer from music instruction to reading development, *Music Expressions* participants responded with far more of the ninety possible indicators. The *Silver Burdett Making Music* group provided the least amount with thirty-six total indicators, at 40% overall, and the *Spotlight on Music* series participants were centered as they recorded forty-four indicators for a 49% total. The *Music Expressions* participants were responsible for the highest amount of reading development indicators at sixty-seven indicators which resulted in 74% overall.

Research Question #3

How do music teachers perceive how their textbook series address literacy?

The third research question to guide this study was centered upon literacy features incorporated in the current textbook series. From the results of the data of research question

number three, two themes emerged, the areas of literacy strengths and aspects of literacy limitations. Findings of the disaggregated data offered perceived textbook strengths in relation to reading development by each of the series groups. Participants from all three textbook series recognized literacy strengths, but those from the *Spotlight on Music* group acknowledged the most indicators and were included all five early literacy components. Results of the disaggregated data also provided aspects of literacy limitations from each of the participating series. Each group suggested use of a variety of books as supplemental resources. The *Spotlight on Music* group was credited again, this time with the most incidences of perceived textbook limitations.

Research Question #4

What factors do teachers perceive affect their knowledge of music instruction as related to early literacy?

The intent of research question number four was to obtain responses from the study participants conveying their beliefs as to what impacted their early literacy knowledge within the curricular realm of music. Responses provided by each of the educators in all three textbook series groups in this study revealed two emerging themes of literacy training opportunities, those dependent on the employer and those independent of the employer. Dependent opportunities were early literacy training opportunities perceived by participants provided within the school district, whereas independent opportunities were those sought personally outside of the school district by participants to influence their knowledge in relationship to music instruction. The disaggregated data findings indicated replies from participants of the three series groups were very close in total number of responses. Regardless of dependent or independent opportunities, the *Silver Burdett Making Music* participants expressed one more early literacy learning

experience than the *Spotlight on Music* series participants, which in turn tallied one more experience than the *Music Expressions* group.

Discussion of the Findings

The following section presents a discussion of findings to the five research questions, previously identified, that framed this study. Through analysis of quantifiable results reported by the participants and examination of additional artifacts and documents, the following deductions were provided to address each of the five research questions.

Research Question #1

How do elementary music teachers view their role in literacy instruction?

Replies of the music educators perceived roles in literacy instruction resulted in three themes. While the first two themes, occupational roles and independent roles were duly documented, it was the third theme that truly applied to literacy instruction. Synergistic roles, as depicted by the nine participants, included the three aspects of participation, integration, and communication, but it was their synergy with which the teachers identified. They indicated unanimously that it was the collaboration of these three aspects that defined their role as part of a literacy instruction team. Teacher B.2 commented on the roles she played. "I think that I play a role in everybody's, like every teacher, every staff member here, works together, you know, to make the students better educated. I see being in a partnership with the classroom teacher, helping them better their curriculum. I see my curriculum improving the abilities of the students and I also think that we just work together as a good team." Teacher C.1 replied, "I am doing a good job of integrating language skills in my music room." While Teacher A.3 provided "Communication between the music teacher and the classroom teacher; a partnership to enhance learning for students" as an aspect of the synergistic role of music educators.

Upon further review of additional documents and observational artifacts, it was apparent the music educators participating in this study viewed themselves as a supported and validated part of the overall literacy instruction for students. Teacher C.1 expressed her view as, "I think I played a part of the gains our students made on test scores by all the reinforcement I do, especially in phonemic awareness." Teacher B.1 concurred by replying, "I think that teachers and specialists are seeing more and more value of music to the education of the child as far as working with reading skills. My school is very supportive of what I do." "Literacy involves students sounding out words phonemically, to break down the syllables and divide it out. We, as music teachers, do that everyday. We use literacy all the time in our music classrooms" was supplied by Teacher C.3 in support of literacy instruction by music educators.

The other theme that emerged from all data sources was, while the participants viewed themselves a viable part of the early literacy curriculum, they also held true to their own curricular area of music education. They demonstrated teaching early literacy skills and enhancing the curriculum of the regular classroom teacher, but they did it with a different focus. The music teachers' taught early language skills through a sequential sound before symbol process, a prevalent concept to develop music phonological awareness in young students, (Bruner, 1960; Gordon, 1977) versus a total immersion approach of many regular elementary classroom teachers (Adams, et al.; 1998).

The sound before symbol approach employed by the music educators, progressed from the elements of beat, to rhythm, to pitch before moving on to symbols of representation to develop musical literacy. They utilized a variety of multisensory experiences, aural, kinesthetic, and visual, to advance the musical development of the students. The teachers facilitated children progressing naturally from dependent to independent music and language acquisition with

meaningful sensory experiences while providing an enriched learning environment, learning first through sensory experiences before moving to the symbolic representations of music and language (Bruner, 1960; Gordon, 1977). As the music educators followed their curriculum and instructed in a natural sequential progression, early literacy development skills were actually integrated with their music curriculum and the sound before symbol approach.

Research Question #2

How do elementary music teachers perceive how music instructional practices impact student learning and transfer to reading development?

Results of the quantifiable data for part one of research question two, participants indicated their thoughts of what music educators achieve during music class that affects student learning, identified three themes inclusive of dimensions of learning, aspects of success, and lifelong qualities. The music educators provided responses representing their confirmation of overall physical and emotional growth and development attained in the music classroom. Teacher C.3 replied, "Music is a natural and important part of young children's growth and development. Music education for young children involves a developmentally appropriate program of singing, moving, listening, creating, playing instruments and responding to visual and verbal representation of sound." Teacher B.3 also supported the impact of music instruction to the overall growth and development of students by stating, "Music education is so important for the overall development of the student. It improves their movement abilities, their gross motor skills, their fine motor skills, and it helps with their reading skills. It is very important for a total education program."

After reflection on observational artifacts and documents, the topic of brain and cognition growth and development was even more prominent, reinforced by music educators' comments

such as Teacher B.2 replying, " Music is a whole-brained activity. Music stimulates the entire brain, allowing it to learn faster, remember longer, and to be coordinated with the body." In concurrence, Teacher A.2 supported the concept by stating, " Music embraces both hemispheres of the brain by building bridges across the two, allowing the brain to become more fully integrated, and by building synapses across the brain. Music can be used to enhance memorization, and it keeps students actively engaged in learning. It encourages the development of critical thinking and helps develop communication skills and self-confidence." A majority of the educators acknowledged environmental experiences and sensory stimuli developed and created new synaptic connections (Sousa, 2006; Wolfe, 2001), while cognition occurred through various neural pathways as the brain processed these experiences, which were diversely dependent upon engaged sensory systems (Bruner, 1966).

The participants illustrated their focus once more on musical literacy development by providing instruction centered on the sequential progress of beat, rhythm, and pitch. Once students displayed a firm understanding of the previous concept, new concepts were introduced. Beginning with the enactive mode of representation, (Bruner, 1960) aural and kinesthetic modalities were enlisted to expose students to music experiences which actively engaged them in the learning process allowing them to construct their own understanding and build their knowledge through experiences (Piaget, 1952). The music educators participating in this study delivered multimodal instruction with music to explore beat, rhythm and rhyme, provide opportunities for listening comprehension, and allow for student participation, learning, and response through varied modalities. The importance of engaging various neural pathways through multimodality music instruction of conceptual ideas allowing students to construct their own transferable understanding of musical concepts was stressed by Miller (2002). She further

emphasized inclusion of multiple modes of representation in the elementary music classroom with a strong foundation in aural methods. "Music is inherently an aural experience, and music class should focus on musical sounds" (Miller, 2002, p. 5).

Research question number two, part two, asked participants how music instruction transfers to reading development. All nine educators suggested a strong correlation between music and language acquisition in early literacy development in general, but specifically identified all five areas of a quality reading curriculum, including phonemic awareness, phonics, fluency, vocabulary, and comprehension as defined by the National Reading Panel (2000). The quantifiable data produced high scoring indicators from the State Reading Standards that the music educators attested to teaching in their music curriculum. The areas and indicators provided by the participants included: 1.1.4 identifies and manipulates phonemes in spoken words (phonemic awareness); 1.1.5 identifies onsets and rimes in spoken words (phonics); 1.2.4 uses knowledge of sentence structure to read fluently and instructional or independent levels (fluency); 1.3.1 demonstrates automatic recognition of sight words (vocabulary); 1.4.1 participates in discussions about narrative, expository, and technical texts read to them or text read independently (comprehension); 2.1.1 identifies and discusses characters in literature (comprehension); 2.2.1 listens to or reads text to connect personal experiences and ideas with those of other cultures in literature (comprehension).

Determined through data analysis and reflection, the music teachers employed instructional strategies parallel to both music and language by including phonological awareness, phonemic awareness, sight identification, and fluency (Hansen and Bernstorf, 2002) when they conveyed use of rhyming, repeated reading, word play activities, nursery rhymes, shared reading, predictable and repetitive literature, and visuals during musical literacy instruction. The

sequential music learning progression from aural sensory experiences to verbal-visual experiences (Gordon, 1980) supports development of early literacy experiences as well as Bruner's theory of learning transfer (1977). He described in his transfer of learning theory the transfer of cognitive processes from one context to another. Based on the cognitive structure of music literacy experiences then, the music educators were supported in their perceptions and responses of how music instruction transfers to reading development.

Research Question #3

How do music teachers perceive how their textbook series address literacy?

Participants of the study were presented questions centered upon literacy features incorporated in their current textbook series. From the results of the interview and questionnaire data, two themes emerged, the areas of literacy strengths and aspects of literacy limitations. The more significant theme of textbook literacy strengths perceived by the music educators, once again, exemplified their commitment to the process of music literacy acquisition, and thus the paralleled early language by indicating the five components of a quality early literacy curriculum. Teacher C.1 expressed her thoughts of literacy similarities as "I can see many places where I can assist students in language skills in the context of the music classroom. There are many opportunities for learning rhyming skills, fluency and vocabulary in the music room. Expressing language skills such as retelling, and acting out characters would naturally lend themselves to an artistic expression in the music room." Teacher B.1 stated, "I use music as much as possible to aid in the teaching of reading; sounds - beginning and ending, phrasing - expression in reading sentences, and rhyming." And Teacher B.2 confirms, "Music aids in the understanding of the rhyme and meter in our spoken and written language. Music further

enhances our ability to spell and use the alphabet by taking the concept that a symbol can represent sound; just as letters represent a phoneme in a word, notes represent a pitch in music."

Aspects of this research include artifacts and documents inclusive of lesson plans, classroom observations, observational field notes, district and school improvement goals, board of education documents, and state department of education documents Analysis of these additional artifacts and documents established support of music instruction, as indicated by the participants of this study, affecting transfer of specific literacy-related developments of basic reading skills and language development. Results of this study provided music educator statements that supported the transfer of specific music literacy development experiences to specific literacy development components. Teacher B.2 conveyed her beliefs of transfer by reporting "A correlation exists between music and reading development. Music notation is read exactly like written words, top to bottom, left to right, and front to back. The identification of rhyming sounds and patterns is a function of fluency, and making predictions is comprehension."

Research Question #4
What factors do teachers perceive affect their knowledge of music instruction as related to early literacy?

Results of the quantifiable data conveyed the beliefs of the participants as to what impacted their early literacy knowledge within the curricular realm of music. Responses revealed two emerging themes of literacy training opportunities, those dependent on the employer and those independent of the employer. For the purposes of this study, dependent opportunities were defined as those perceived by the participants as early literacy training opportunities provided within the school district and independent opportunities were those sought personally outside of the school district to affect their knowledge in relationship to music

instruction. While nearly all participants mentioned both dependent and independent literacy opportunities as factors of early literacy knowledge, examination of additional documents and artifacts, inclusive of district and school improvement plans and state accreditation reports provided more information on the subject.

Those participants indicating school-wide reading programs, staff development meetings, and workshops, within the dependent opportunities theme, were in fact involved with reading training provided by the school district under the direction of the State Department of Education. At the time of this study, as part of the State Quality Performance Accreditation, QPA, process, all schools in the state were required to include reading as one of the three areas targeted in their School Improvement Plan, SIP, for Cycle 1, if they wished to be considered for accreditation.

Accreditation, for purposes of this study, was defined as the status assigned to a school that met the minimum performance and quality criteria established by the State Board of Education, and a School Improvement Plan was defined as a multiyear plan for five years or less that was developed by a school and stated specific actions for achieving continuous improvement in student performance.

Furthermore, the State also required, for accreditation consideration, results-based staff development plans, consisting of school identified research-based strategies, practices, programs, and/or interventions to raise achievement levels of all students, to be on file for each certified teacher. Regardless of the opportunities provided or required by the school districts or the State Department of Education, ultimately, eight of the nine music educators opted to enhance their own education, knowledge, and understanding of early literacy through coursework in higher education or literacy development instruction through independent reading. Their additional training related to their roles as music educators in literacy instruction.

The music educators participating in this study shared their learning and teaching experiences in terms of literacy development. Teacher B.1 defined literacy as, "How students learn the sounds in order to pick up the way the words move and work together, the letters work together, and how sounds and symbols work together." And Teacher A.1 explained what she learned from a literacy development workshop by stating, "It taught me about the development of vowels, development of consonants and vowels, and what procedure to go through." Upon further reflection and review of responses, participants described the transfer of music literacy to reading development, but explicitly to the area of phonemic awareness, as Teacher A.2 stated, "Music emphasizes aural discrimination skills."

Participants revealed through observational data and additional artifacts of lesson plans and field notes their plans and use of early literacy instruction activities inclusive of those centered on fluency, vocabulary, choral readings, read aloud, phonics, phonemic awareness, comprehension, and aural language activities. These activities exemplified the expressed interest the study participants placed on the discrimination of aural skills in music instruction. Thus, their attention and significance of these very aural skills, in particular phonemic awareness, as they enhanced early language literacy and development was taught on a routine basis. Supporting the participants, Tucker's research reported music instruction enhanced pre-reading skills as both music and reading use a symbol structure (1981). He further noted that both can be decoded into sounds that have meaning and require visual and auditory discrimination.

Phonemic awareness is the understanding that the sounds of spoken language work together to make words and is defined as "the ability to hear, identify, and manipulate individual sounds-phonemes-in spoken words" (Armbruster, Lehr, and Osborn, 2003, p.10)) with phonemes described as the smallest part of spoken language and entirely dependent upon auditory ability

(Hansen and Bernstorf, 2002). Thus phonemic awareness, defined as understanding the symbolization of spoken language is of primary importance in a child's acquisition of literacy skills and necessary to progress from early literacy to independent reading (Adams, et al.; 1998).

The sound before symbol approach employed by the music educators of this study, progressed from the elements of beat, to rhythm, to pitch before moving on to symbols of representation to develop musical literacy. Gromko's research proposed music benefited young children's development of phonemic awareness, an aural skill, which enhanced their language literacy (2005). Her study findings support the participants' music instruction attending to beat, rhythm, and pitch sound experiences together with developmentally appropriate symbols, supporting the near-transfer theory and may enhance development of cognitive processes leading to improved phonemic awareness reading skills.

Research Question #5

To what extent does differentiated music instruction, as determined by the textbook series used, account for the variations in the findings of each of the first four research questions.

The intent of research question number five was to identify possible variations in the study findings affected by which textbook series was used. Participant responses to the previous four research questions were disaggregated according to series usage and examined for possible trends indicating differences attributed to differentiated music instruction derived from the three different textbooks.

Results of research question number one presented music educators' perceived roles in literacy instruction. Findings of the disaggregated data were quite similar and without wide variations among the three textbook series groups compared in this study.

Research question number two, part one, reported participants' thoughts of how music instruction affects student learning. Disaggregated data results indicated a narrow margin of differences among participants of the three textbook groups. Research question number two, part two, provided disaggregated data results of participants' perceptions of how music instruction transfers to reading development. The findings represented the widest variance of results in this study as *Music Expressions* participants responded with far more than the other series groups.

Research question number three supplied responses centered on textbook literacy features. Findings of the disaggregated data reflected relatively small differences in the three groups of participants compared in this study.

Results of research question number four described participants' beliefs as of what impacted their early literacy knowledge. The disaggregated data findings indicated replies from participants of the three textbook series groups were very close in total number of responses.

Overall findings of the disaggregated data, along with further review of additional documents and observational artifacts, reflected very little difference amongst the three groups of participants compared in the study. No clear pattern of variation established by textbook differentiated music instruction was observed based on the results of disaggregated data analysis.

Summation of the Results

The purpose of this section was to provide a summary of the findings related to music teachers' perceptions of the role of music education in the acquisition of early literacy. The overall schema of this study can be viewed as one over-arching theme with two levels. The major theme, the progression of education, was described on the level of student learning and on

the level of teacher learning. The summary of results followed the development of the two levels of learning through each research question of the study.

Student Learning

In research question number one, the music educator participants indicated they played a collaborative role in early literacy instruction. They recognized they were part of overall literacy instruction, but their focus was different than regular classroom teachers. The music teachers approached early literacy instruction through a sequential music literacy development process with multimodal aural experiences coming before any visual representation. Music educator participants also identified that early literacy instruction was naturally integrated with music literacy instruction and did not need to be the other way around. The music teachers furthermore illustrated through their responses the development of music literacy using the sound before symbol approach (Bruner, 1960; Gordon, 1977) to progress from the enactive, through the iconic, to the symbolic modes.

Results of research question number two produced multiple ways that music instruction impacted student learning, from brain and cognition, growth and development, supporting neural pathways, to multimodalities, to transfer of cognitive processes from one context to another (Bruner, 1960). Music literacy development, via the sound before symbol approach, provided students multiple varied experiences to be actively engaged in the learning process, allowing them to construct their own understanding and build their own knowledge through their experiences (Piaget, 1952). Other findings reported in response to research question number two, included parallels of music and language literacy acquisition, the general identification of the five areas of reading development (National Reading Panel, 2000), and music and literacy parallel instructional strategies for students.

While research question number three requested music teachers' perceptions of early reading literacy exposed in textbooks, participants replied with responses describing in more detail the process of music literacy development for students using the sound before symbol approach. Specific music literacy development activities were expressed as related to specific areas of a quality early literacy curriculum and the transfer of such was supported by Catterall (2002).

From research question number four the music educators participating revealed training opportunities that affected their knowledge of early literacy. Their responses indicated refinement of the reading development five components and specifically targeted phonemic awareness. The educators depicted music literacy development activities for students dependent on auditory skills, in particular aural discrimination skills, which were supported in the literature by Gromko (2005).

As for research question number five, the contention remained of no clear pattern of variation of responses based on differentiated materials for music instruction.

In conclusion, the progression of education focused on student learning was directed toward literacy acquisition through music instruction. The student level progressed from music literacy development, via sound before symbol approach, to brain and cognition, growth and development, and was supported by the transfer of learning theory (Bruner, 1977), and multimodal experiences and construction of own transferable understanding and knowledge (Piaget, 1952). As perceived by the teachers, it then continued to identify parallels to language literacy, and in general the five areas of reading development, before progressing to specific music activities related to specific reading development areas, and transfer supported by Catterall (2002). And it concluded with refined components of reading development, phonemic

awareness in particular, affected by music literacy activities focused on aural discrimination skills, was supported by Gromko (2005) and the near-transfer theory.

Teacher Learning

The progression of education theme focused on teacher learning began with research question number one in this study from responses of the music educator participants that indicated they played a synergistic collaborative role in literacy instruction. They viewed themselves a vital part of the early literacy curriculum, but through a natural sequential music literacy process of development. They expressed they were fully aware that music teachers teach early reading literacy through music.

In research question number two, the music teachers identified factors they perceived to impact student learning. They also indicated how they perceived music transferred to reading development inclusive of brain and cognition growth and development, multimodalities, and parallels to language literacy acquisition. There was also an interesting observation in the responses to research question number two, part two, regarding the number of indicators selected on the reading standards. While some participants responded quite liberally, selecting nearly every indicator, others were equally conservative in their approach. Generally, the number of indicators selected by each participant was consistent throughout each standard and benchmark, thus the analysis of the data remained overall essentially the same.

The focus of teacher learning was apparent in research question number three when music educator participants replied to their textbook series literacy strengths and limitations. It should be noted here that responses to interview question number six (Appendix C.1) indicated one participant used her textbook series nearly exclusively with very little to no use of supplemental resources, four music teachers reported using their textbooks as a basis for regular

teaching with some use of supplemental resources, and four music educator participants stated they used their textbooks as resources. Of the supplemental resources mentioned by the participants of this study, eight of the music teachers identified books, and of five of those eight indicated the use of past textbooks to strengthen the literacy content of their current textbook series. It may have been a choice of ease, as the past textbook was readily available, or a choice based on comfort level because they were used to it or simply like it. For whatever reason the teachers were searching for additional resources to complement their textbook with supplementary literacy activities to enhance early reading development experiences, they achieved expanding their own knowledge and understanding of literacy development.

Results from research question number four furthered the progression of teacher learning as a majority of participants responded that it was through books that they gained literacy training affecting their knowledge of early literacy. Each of the participants that indicated books, also identified another means of literacy training opportunities in which they would have heard information delivered, inclusive of school-wide programs, meetings, workshops, and higher education coursework. In all of those opportunities the music teacher study participants experienced the "sound" portion of their own music literacy development approach, sound before symbol. The teachers admitted to the pursuit of additional reading development information and their need to know more. They intentionally wanted to improve and sought more knowledge and understanding of how and what they delivered through music instruction impacted literacy through text. They continued their own growth and development of brain and cognition and transferred of their own knowledge. They engaged actively in the learning process with multiple varied experiences, which allowed them to construct their own understanding and build their own knowledge through their continued experiences. The music educators described

themselves as lifelong learners, the very aspect they hoped to instill in their students. They modeled by example. They taught sound before symbol and they, too, learned by the same approach. The cycle was completed. A classic example of Bruner's (1960) *The Process of Education*.

Summary

Chapter Four included a detailed overview of the study, an examination of the results through data analysis, a discussion of the findings, and a summation of the results. The results of quantifiable data were reported in numeric order by research questions. Each research question was summarized by theme in a table at the end of each section. A discussion of the findings provided by the five research questions that framed this study was addressed through analysis of the quantifiable results and examination of additional observational artifacts and documents. And the summation of results section was dedicated to the culmination of results and findings expressed by the views of the researcher.

The following chapter will include the following sections: 1) a summary of the study, 2) implications of the study, and 3) conclusions.

CHAPTER 5 - Summary, Implications, and Conclusion

This chapter contains a summary of the study, implications of the findings with recommendations for practice and suggestions for further research, along with conclusions to the study.

Summary of the Study

The purpose of this qualitative study was to gain understanding of how music teachers perceive the role of music education in the acquisition of early literacy. Using a multi-site case study design to examine and present this analysis of nine first grade general music teachers' perceptions based on music instruction provided by the three textbook series under investigation, resulted in this collective case study.

It was the goal of this exploratory investigation to contribute to qualitative research in multiple ways. The first contribution was to inform educators in the future development of literacy-based curricula. Secondly, it was to provide administration and pre-service educators with what experiences are needed to aid music educators about literacy development. And the third contribution was to further development and use of qualitative methods in music education research to gain understanding.

This study was directed toward gaining understanding and meaning of first grade elementary music teachers' perceptions of the role of music education in the attainment of early literacy by the following research questions:

1. How do elementary music teachers view their role in literacy instruction?
2. How do elementary music teachers perceive how music instructional practices impact student learning and transfer to reading development?
3. How do music teachers perceive how their textbook series address literacy?
4. What factors do teachers perceive affect their knowledge of music instruction as related to early literacy?
5. To what extent does differentiated music instruction, as determined by the textbook series used, account for the variations in the findings of:
    - Question #1. How do elementary music teachers view their role in literacy instruction?
    - Question #2. How do elementary music teachers perceive how music instructional practices impact student learning and transfer to reading development?
    - Question #3. How do music teachers perceive how their textbook series address literacy?
    - Question #4. What factors do teachers perceive affect their knowledge of music instruction as related to early literacy?

Emphasis of this research focused on the public elementary school music educator. The investigation of this collective case study was conducted in a Midwestern state over a period of five weeks, from February 2007 to March 2007. The nine participants were from primary attendance centers that instructed first grade music from one of the three current music basal series publications: 1) *Music Expressions*, Warner Brothers Publications, 2004; 2) *Silver Burdett Making Music*, Scott Foresman, 2005; or 3) *Spotlight on Music,* Macmillan/McGraw-Hill, 2005.

An inductive approach was employed for this study, allowing for categories to emerge from observation and theories to emerge from the data. The data for this study were collected from a variety of sources including: a) audio-recorded semi-structured teacher interviews; b) transcribed field notes of teacher interviews; c) hand-written classroom observations; d) videotaped classroom observation field notes; e) questionnaire; f) teacher lesson plans; and g) additional artifacts.

The data were analyzed and disclosed the following strands of music educators' role in early literacy instruction. They perceived their role as collaborative in nature, and considered themselves to be a part of the overall literacy instruction team. They provided students various multi-sensory literacy experiences delivered through music instruction to augment the literacy instruction of the regular classroom. Supported in the literature were the sequential process of music literacy acquisition paralleled to early language literacy acquisition, the transfer of music literacy development to the five areas of reading development, and music literacy instruction focused on auditory discrimination skills enhancement of early literacy development, specifically the development of phonemic awareness.

Implications of the Study

Themes emerging from the analysis and discussed with relation to the research questions provided implications for both practice and research in the field of early literacy in relation to music education.

Recommendations for Practice

Recommendations follow for university instructors, pre-service teachers, school administrators, and music educators.

Teacher Education Programs

The findings of this study revealed a need to incorporate early literacy instruction during teacher preparation in music education programs. It is suggested that music education coursework at the undergraduate and graduate levels should include issues related to early literacy development. Ideally, a required separate course devoted to early language literacy issues as related to music literacy alone would be included in a students' program of study. But, in lieu of that, a more practical suggestion would be to include a literacy acquisition development component to an already existent course to optimally assist future educators of the student literacy transfer potential within their curricular area. Furthermore, it would be helpful if supervisors and cooperating teachers with practical knowledge and experience of music literacy development and the parallels to language literacy acquisition and reading development skills would begin to model such instruction in their own teaching.

Administration

District and school administrators should be reminded that children learn best through multi-sensory experiences and that music education provides multiple opportunities for them to be actively engaged in their own learning which transfers to enhanced understanding and knowledge. It would be helpful for music education to be recognized by administrators for the importance of music for it's own sake and as a vital component of a core curriculum, but also as an integral part of literacy instruction for optimal student learning. It is further suggested that all administrators understand the need for collaborative efforts on the part of all educators involved with student literacy instruction, including music educators, in the endeavor of more effective delivery methods.

By providing music educators and classroom teachers more professional development opportunities on literacy development issues related to improving reading instruction, district and school administrators could produce greater overall student achievement. An additional recommendation to administrators would suggest being proactive versus retroactive in the fight on literacy. This would lessen the need for interventions and recovery programs by acknowledging the window of opportunity for prime literacy acquisition and student success. Recognizing that children have sensitive time frames usually occurring between the ages of five through eight (Sousa, 2006) in which literacy instruction is promoted at its peak, it would seem pertinent to afford them with multiple literacy learning opportunities at this time in their development.

The final recommendation to administrators is to suggest having textbook adoption committees utilize a literacy inventory focused on current scientifically based literacy research when analyzing possible textbooks before district adoption in the curricular areas of language arts and music. Rich literacy development experiences provided by compelling textbook support in both areas would benefit students substantially.

Music Educators

Music literacy instruction employing the sound before symbol approach presents multiple similarities in the way children acquire music and language literacy. Music educators should continue to develop and utilize instructional strategies and practices that support the development of early literacy experiences for their students following the sequential process of music literacy development. It is the inherent nature of music to be multi-sensory, so music teachers should use it to provide enriched experiences in other curricular areas in addition to reading with integrity to enhance student achievement.

The findings of this study revealed that knowledge and understanding of the five areas of reading development, phonemic awareness, phonics, fluency, vocabulary, and comprehension, were realized by the nine music educators. It seems plausible that if all nine of these participants recognized the influence music instruction had on literacy development, then other music educators are open to the same knowledge. Music educators would be wise to use that information to look forward and progress as professionals as they continue to guide students through early literacy to independent reading in both music and language literacy.

Reading is an integral part of human life. So much so, that learning to read is vital for students not only for grade level success and achievement but also for enhanced daily life. And music education plays a part in the acquisition of beginning reading skills. The unique role of music in young children's education provides multi-sensory experiences, which in turn promotes aural discrimination skills. The refinement of aural discrimination skills is the basis of phonemic awareness, which is the foundation of early language literacy.

Phonemic awareness is an important pre-reading ability involving all processes of literacy learning, but particularly the understanding that sounds of oral language work together to make words. Defined as "the ability to hear, identify, and manipulate individual sounds, phonemes," (Armbruster, Lehr, and Osborn, 2003, p. 10), phonemic awareness is an aspect of early literacy that is experienced in regular music instruction.

Phonemes, the smallest part of oral language, are entirely dependent upon auditory ability and that is at the foundation of music education. Thus, the unique role of music in young children's education emphasizes phonemic awareness, which impacts the acquisition of literacy skills, and is necessary to progress from early literacy to independent reading. It is awareness of this unique role of music education that should be expressed to music teachers, as well as

classroom teachers and administrators. Awareness of the fact that what is already transpiring at the foundation of regular music instruction is also of primary importance to the acquisition of early literacy. Music educators would be wise to use this awareness to advocate the magnitude of music education in the schools.

Awareness of the unique role that music can play in a young child's development is critical for music educators already in the field, but it may be even more so for those in training as future music educators. Unfortunately, all too often is the case in which those training to be music educators spend years training to be musicians, leaving little time and available credit hours in their program of study for training as educators. By doing so they omit the importance and value of this unique role of music education and the part it plays in their own education and in the development of children. It would be helpful to recognize the duet between the musician and educator is necessary in order for future music teachers to play in concert with the rest of the literacy ensemble members and accompany students through music and language literacy development.

Recommendations for Further Research

In addition to implications for practice, this study suggests a need for additional research with respect to literacy instruction.

The implications suggested by the findings are limited in terms of their applicability to other school settings and teachers who have different life and educational experiences. The size of the sample of this study included nine music educators. Further research is needed to examine how a different sample size would possibly change the results in regards to literacy instruction. While this study was conducted in elementary schools located in the same Midwest state, future

studies conducted in differing attendance centers from other regions of the United States may provide different perceptions based on different experiential backgrounds to compare.

In this study, the sample population was limited to exclusively female music educators. Perhaps a future study inclusive of male population may provide insight regarding how music literacy may be perceived differently due to gender differences. This study was also limited to the study of first grade students. Future research is needed to explore how music educators teaching in grades beyond first grade use music literacy development as students emerge through phonemic awareness and onto phonics and beyond.

While countless studies of quantitative nature exist in the fields of music education and reading development, there is very limited qualitative literature available with regards to music education and early reading development, with a notable gap of any case studies involving music education and early literacy. To add to the body of research, an additional recommendation is suggested for further case studies investigating music education and early literacy.

Another avenue for future inquiry could include the relationship between music literacy development and the non-English speaker. The role of music education with its foundation in aural skills and emphasis on phonemic awareness could serve a role in aiding English language learners as they progress through language literacy development.

And lastly, a recommendation for further research is advised to study the potential effects of the music literacy development sound before symbol approach in adult patients undergoing rehabilitation for sustained head or brain injuries resulting in reading memory loss. Perhaps, the effectiveness of literacy acquisition instruction for children will transfer to the re-teaching in others. The possibilities of the brain and human body are many.

Conclusion

The final chapter contained a summarization of this study. It also included implications suggested by the study findings as recommendations for practice directed toward teacher education programs, administrators, and music educators, as well as suggestions for further research regarding the impact of music education on early literacy acquisition in first grade students. This chapter highlighted the need to incorporate early literacy instruction during teacher preparation in music education programs, as well as it underscored the necessity to make administrators cognizant of the role of music educators during the early literacy acquisition stage of development. And finally it provided recommendations addressed toward music educators.

Music educators are a vital part of the literacy development team. They provide an array of multi-sensory experiences, which complement the reading curriculum experiences offered by the regular classroom teacher. Music educators are encouraged to continue the use of "multiple systems of reading through the medium of music" (Hansen, Bernstorf, and Stuber, 2004, p. 64), to direct young students through early language literacy. And they should be reminded to be confident while remaining dedicated to their own curricular area of music. It is with the varied experiences afforded by the entire literacy team that young children are given the opportunity to progress through the stages of literacy development.

It is awareness of the unique role of music education that current music teachers can defend the importance of music in the schools and the necessity of their positions as trained musicians and knowledgeable educators. Awareness of this role can support future music educators and continue the cycle, like the participants in this study, the cycle of student learning begets teacher learning, the progression of education. As music educators look to the future of the profession, let them be assured of their place, of music in education, and continue to guide

young students through early literacy to independent reading in both music and language learning.

> *I would teach the children music, physics and philosophy, but the most important is music, for in the patterns of the arts are the keys to all learning.* *~Plato*

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Appendix A - Research Participant Consent Form

Kansas State University
Department of Music
109 McCain Auditorium
Manhattan, KS 66506 -4702
785-532-5740
Fax: 785-532-6899
E-mail: musicd@ksu.edu
http://www.ksu.edu/musicd/

Dear ,

As per our prior communications, thank you for agreeing to participate in my research on teacher's perceptions regarding the role of music education and early literacy with first grade students. Your expertise and knowledge in this area will provide an opportunity to explore connections between music instruction and early literacy, and to derive an understanding of possible implications for teaching practices in both music and first grade classrooms. This information will contribute to research in the field of music education, reading instruction, and early childhood education and may be beneficial to teachers, principals, staff development coordinators, and curriculum specialists.

Participation in this study will involve an observation at an agreed upon convenient and prearranged time during the 2007 spring semester. I will observe you instructing first grade students, during which time I will take field notes. At the conclusion of the observation, a copy of the notes will be provided to you for review and confirmation. Following the observation, we will conduct a taped interview, with a transcript of the audiotape to be provided as soon as possible for you to review and confirm, as well. Upon acceptance of the interview manuscript, the audiotape will then be destroyed.

The data collected and analyzed during this study will be shared in my dissertation and potentially other publications and presentations. To assure anonymity preservation, individual identities will be removed from all records, and confidentiality will be protected to the full extent permitted by law.

Your decision as to whether or not to participate is voluntary and will not prejudice your present or future association with the researcher, your administration, or Kansas State University. You are free to withdraw your consent and discontinue participation at any time. Remember, your name will not be associated with the research findings in any way, and your identity as a participant will be known only to the researcher.

Your signature below indicates that you have decided to participate in this study and that you have read and understood the information in this consent form. A completed copy of this form will be provided for your records. Should you have any questions about the study, please contact me at (785) 527-0918 or Dr. Jana Fallin, chair of my dissertation committee, Kansas State University, at (785) 532-3827. Thank you for considering this request.

Sincerely,

Susan D. Holmberg

I voluntarily agree to participate in Susan Holmberg's study, *The Role of Music Education in Early Childhood Literacy*. I understand that my individual identity will be removed from all records at the completion of data collection.

_____ _____

(Signature) (Date)

Appendix B - Internal Review Board Documents

University Research
Compliance Office
203 Fairchild Hall
Lower Mezzanine
Manhattan, KS 66506-1103
785-532-3224
Fax: 785-532-3278
http://www.ksu.edu/research/comply

TO: Jana Fallin
Music
232 McCain Auditorium

Proposal Number: 4160

FROM: Rick Scheidt, Chair
Committee on Research Involving Human Subjects

DATE: January 5, 2007

RE: Proposal Entitled, "The Role of Music Education in Early Childhood Literacy"

The Institutional Review Board (IRB) for Kansas State University has reviewed the proposal identified above and has determined that it is exempt from further review.

This exemption applies only to the proposal currently on file with the IRB. Any change affecting human subjects must be approved by the IRB prior to implementation and may disqualify the proposal from exemption.

Exemption from review does not release the investigator from statutory responsibility for obtaining the informed consent of subjects or their authorized representatives, as appropriate, either orally or in writing, prior to involving the subjects in research. The general requirements for informed consent and for its documentation are set forth in the Federal Policy for the Protection of Human Subjects, 45 CFR 46.116-117, copies of which are available in the University Research Compliance Office and online at http://ohrp.osophs.dhhs.gov/humansubjects/guidance/45cfr46.htm#46.116. In cases of remote oral data collection, as in telephone interviews, oral consent is sufficient and the researcher is required to provide the respondent with a copy of the consent statement only if the respondent requests one. The researcher must, however, ask the respondent whether he or she wishes to have a copy. The initiative in requesting a copy must not be left to the respondent. Regardless of whether the informed consent is written or oral, the investigator must keep a written record of the informed consent statement, not merely of the fact that it was presented, and must save this documentation for 3 years after completing the research.

The identification of a human subject in any publication constitutes an invasion of privacy and requires a separate informed consent.

Injuries or any unanticipated problems involving risk to subjects or to others must be reported immediately to the Chair of the Committee on Research Involving Human Subjects, the University Research Compliance Office, and if the subjects are KSU students, to the Director of the Student Health Center.

FOR OFFICE USE ONLY: IRB Protocol # _____ Application Received: _____
Routed: _____ Training Complete: _____

Committee for Research Involving Human Subjects (IRB)

Application for Approval Form
Last revised on March 2006

ADMINISTRATIVE INFORMATION:

- **Title of Project:** (if applicable, use the exact title listed in the grant/contract application)
  The Role of Music Education in Early Childhood Literacy

- **Type of Application:**
  ☒ New, ☐ Addendum/Modification,

- **Principal Investigator:** (must be a KSU faculty member)

Name:	Dr. Jana Fallin	**Degree/Title:**	Chair-Music Ed. Division
Department:	Music	**Campus Phone:**	523 3827
Campus Address:	232 McCain Aud.	**Fax #:**	785 532 6899
E-mail	jfallin@ksu.edu		

- **Contact Name/Email/Phone for Questions/Problems/Emergencies:**
  Dr. Jana Fallin
  785 532 3827
  jfallin@ksu.edu

- **Does this project involve any collaborators not part of the faculty/staff at KSU?** (projects with non-KSU collaborators may require additional coordination and approvals):
  ☒ No
  ☐ Yes

- **Project Classification** (Is this project part of one of the following?):
  ☐ Thesis
  ☒ Dissertation
  ☐ Class Project
  ☐ Faculty Research
  ☐ Other: _____

- **Please attach a copy of the Consent Form:**
  ☒ Copy attached
  ☐ Consent form not used

- **Funding Source:** ☐ Internal ☐ External (identify source and attach a copy of the sponsor's grant application or contract as submitted to the funding agency)
  ☐ Copy attached ☒ Not applicable

- Based upon criteria found in 45 CFR 46 – and the overview of projects that may qualify for exemption explained at http://www.ksu.edu/research/comply/irb/about/exempt.html, I believe that my project using human subjects should be determined by the IRB to be exempt from IRB review:
  ☒ No
  ☐ Yes (If yes, please complete application <u>including</u> Section XII. C. 'Exempt Projects'; remember that only the IRB has the authority to determine that a project is exempt from IRB review)

If you have questions, please call the University Research Compliance Office (URCO) at 532-3224, or comply@ksu.edu

Human Subjects Research Protocol Application Form

The KSU IRB is required by law to ensure that all research involving human subjects is adequately reviewed for specific information and is approved prior to inception of any proposed activity. Consequently, it is important that you answer all questions accurately. If you need help or have questions about how to complete this application, please call the Research Compliance Office at 532-3224, or e-mail us at **comply@ksu.edu**.

Please provide the requested information in the shaded text boxes. The shaded text boxes are designed to accommodate responses within the body of the application. As you type your answers, the text boxes will expand as needed. After completion, print the form and send the original and one photocopy to the Institutional Review Board, Room 1, Fairchild Hall.

Principal Investigator: Dr. Jana Fallin
Co-Investigator: Susan Holmberg

Project Title: The Role of Music Education in Early Childhood Literacy

Date: 15 Dec. 2006

NON-TECHNICAL SYNOPSIS (brief narrative description of proposal easily understood by nonscientists):

To observe and interview music educators to gain knowledge and insight of their perceptions of the role of music education in the attainment of early childhood literacy.

I. **BACKGROUND** (concise narrative review of the literature and basis for the study):

An increasing number of American children do not read well enough to enable them to understand and to meet the demands of an increasingly competitive economy, despite the national efforts of reading emphasis and educational reform. While many educational research studies support the relationship of phonemic awareness and reading success and much focus has been placed on achievement in core academic areas, until recently there has been little research including the importance of music education enhancing student learning ability. Considering limited literature available on the effects of music on academic achievement, especially in the area of early childhood literacy, and much less of qualitative nature, a very real need is upon us for further investigation.

II. **PROJECT/STUDY DESCRIPTION** (please provide a concise narrative description of the proposed activity in terms that will allow the IRB or other interested parties to clearly understand what it is that you propose to do that involves human subjects. This description must be in enough detail so that IRB members can make an informed decision about proposal).

This study involves the observation of nine first grade Kansas public school music teachers, three from each of the three currently published music series, presenting a lesson from their textbook series followed by a 35 minute interview. The observations will focus on how and to what extent the teachers adhere to the published lessons, while the interviews will focus on their perceptions of the role of music education in early childhood literacy as exemplified in the provided interview protocol.

III. **OBJECTIVE** (briefly state the objective of the research – what you hope to learn from the study):

To better understand first grade general music teachers' perceptions of the role of music education in the attainment of early childhood literacy.

IV. **DESIGN AND PROCEDURES** (succinctly outline formal plan for study):

A. Location of study: Nine elementary school music classrooms across Kansas

B. Variables to be studied: Music educators perceptions of their use of music textbooks, their role functions, and their impact on student learning.

C. Data collection methods: (surveys, instruments, etc – **PLEASE ATTACH**) Classroom observation followed by interview

D. List any factors that might lead to a subject dropping out or withdrawing from a study. These might include, but are not limited to emotional or physical stress, pain, inconvenience, etc.: NA

E. List all biological samples taken: (if any) NA

F. Debriefing procedures for participants: Review and confirmation of transcribed field notes

V. RESEARCH SUBJECTS:

A. Source: NA

B. Number: 9

C. Characteristics: (list any unique qualifiers desirable for research subject participation) Three general elementary Kanssas music educators, using each of the three currently published textbook series under investigation.

D. Recruitment procedures: (Explain how do you plan to recruit your subjects? Attach any fliers, posters, etc. used in recruitment. If you plan to use any inducements, ie. cash, gifts, prizes, etc., please list them here.) Respondents to invitaions of participation sent to educators of professional music organization and/or professional development affiliation filling charactersitcs profile.

VI. RISK – PROTECTION – BENEFITS: The answers for the three questions below are central to human subjects research. You must demonstrate a reasonable balance between anticipated risks to research participants, protection strategies, and anticipated benefits to participants or others.

A. **Risks for Subjects:** (Identify any reasonably foreseeable physical, psychological, or social risks for participants. State that there are "no known risks" if appropriate.)
No known risks

B. **Minimizing Risk:** (Describe specific measures used to minimize or protect subjects from anticipated risks.)
NA

C. **Benefits:** (Describe any reasonably expected benefits for research participants, a class of participants, or to society as a whole.)
NA

In your opinion, does the research involve **more than minimal risk** to subjects? ("Minimal risk" means that "the risks of harm anticipated in the proposed research are not greater, considering probability and magnitude, than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests.")

☐ Yes ☒ No

VII. CONFIDENTIALITY: Confidentiality is the formal treatment of information that an individual has disclosed to you in a relationship of trust and with the expectation that it will not be divulged to others without permission in ways that are inconsistent with the understanding of the original disclosure. Consequently, it is your responsibility to protect information that you gather from human research subjects in a way that is consistent with your agreement with the volunteer and with their expectations. If possible, it is best if research subjects' identity and linkage to information or data remains unknown.

Explain how you are going to protect confidentiality of research subjects and/or data or records. Include plans for maintaining records after completion.

Audiotapes will be destroyed after transcription and individual identities will be removed from all records.

VIII. INFORMED CONSENT: Informed consent is a critical component of human subjects research – it is your responsibility to make sure that any potential subject knows exactly what the project that you are planning is about, and what his/her potential role is. (There may be projects where some forms of "deception" of the subject is necessary for the execution of the study, but it must be carefully justified to and approved by the IRB). A schematic for determining when a waiver or alteration of informed consent may be considered by the IRB is found at http://www.ksu.edu/research/comply/irb/images/slide1.jpg and at http://ohrp.osophs.dhhs.gov/humansubjects/guidance/45cfr46.htm#46.116. Even if your proposed activity does qualify for

a waiver of informed consent, you must still provide potential participants with basic information that informs them of their rights as subjects, i.e. explanation that the project is research and the purpose of the research, length of study, study procedures, debriefing issues to include anticipated benefits, study and administrative contact information, confidentiality strategy, and the fact that participation is entirely voluntary and can be terminated at any time without penalty, etc. Even if your potential subjects are completely anonymous, you are obliged to provide them (and the IRB) with basic information about your project. See informed consent example on the URCO website at http://www.ksu.edu/research/comply/irb/app.html). It is a federal requirement to maintain informed consent forms for 3 years after the study completion.

Yes	No	Answer the following questions about the informed consent procedures.
☒	☐	a. Are you using a written informed consent form? If "yes," include a copy with this application. If "no" see b.
☐	☒	b. In accordance with guidance in 45 CFR 46, I am requesting a waiver or alteration of informed consent elements (See Section VII above). If "yes," provide a basis and/or justification for your request.
☐	☒	c. Are you using the online Consent Form Template provided by the URCO? If "no," does your Informed Consent document has all the minimum required elements of informed consent found in the Consent Form Template? (Please explain) Yes, it does include all of the minimum required elements of informed consent as evidenced in the provided document.
☐	☒	d. Are your research subjects anonymous? If they are anonymous, you will not have access to any information that will allow you to determine the identity of the research subjects in your study, or to link research data to a specific individual in any way. Anonymity is a powerful protection for potential research subjects. (An anonymous subject is one whose identity is unknown even to the researcher, or the data or information collected cannot be linked in any way to a specific person).
☒	☐	e. Are subjects debriefed about the purposes, consequences, and benefits of the research? Debriefing refers to a mechanism for informing the research subjects of the results or conclusions, after the data is collected and analyzed, and the study is over. (If "no" explain why.)

*** It is a requirement that you maintain all signed copies of informed consent documents for at least 3 years following the completion of your study. These documents must be available for examination and review by federal compliance officials.**

IX. PROJECT INFORMATION: (If you answer yes to any of the questions below, you should explain them in one of the paragraphs above)

Yes	No	Does the project involve any of the following?
☐	☒	a. Deception of subjects
☐	☒	b. Shock or other forms of punishment
☐	☒	c. Sexually explicit materials or questions about sexual orientation, sexual experience or sexual abuse
☐	☒	d. Handling of money or other valuable commodities
☐	☒	e. Extraction or use of blood, other bodily fluids, or tissues
☐	☒	f. Questions about any kind of illegal or illicit activity
☐	☒	g. Purposeful creation of anxiety
☐	☒	h. Any procedure that might be viewed as invasion of privacy
☐	☒	i. Physical exercise or stress
☐	☒	j. Administration of substances (food, drugs, etc.) to subjects
☐	☒	k. Any procedure that might place subjects at risk
☐	☒	l. Any form of potential abuse; i.e., psychological, physical, sexual
☐	☒	m. Is there potential for the data from this project to be published in a journal, presented at a

conference, etc?

☐ ☒ n. Use of surveys or questionnaires for data collection
IF YES, PLEASE ATTACH!!

X. **SUBJECT INFORMATION:** (If you answer yes to any of the questions below, you should explain them in one of the paragraphs above)

Yes	No	Does the research involve subjects from any of the following categories?
☐	☒	a. Under 18 years of age (these subjects require parental or guardian consent)
☐	☒	b. Over 65 years of age
☐	☒	c. Physically or mentally disabled
☐	☒	d. Economically or educationally disadvantaged
☐	☒	e. Unable to provide their own legal informed consent
☐	☒	f. Pregnant females as target population
☐	☒	g. Victims
☐	☒	h. Subjects in institutions (e.g., prisons, nursing homes, halfway houses)
☐	☒	i. Are research subjects in this activity students recruited from university classes or volunteer pools? If so, do you have a reasonable alternative(s) to participation as a research subject in your project, i.e., another activity such as writing or reading, that would serve to protect students from unfair pressure or coercion to participate in this project? If you answered this question "Yes," explain any alternatives options for class credit for potential human subject volunteers in your study.
☒	☐	j. Are research subjects **audio** taped? If yes, how do you plan to protect the recorded information and mitigate any additional risks? After transcription of the interview, the tape will be destroyed.
☐	☒	k. Are research subjects **video** taped? If yes, how do you plan to protect the recorded information and mitigate any additional risks?

XI. **CONFLICT OF INTEREST:** Concerns have been growing that financial interests in research may threaten the safety and rights of human research subjects. Financial interests are not in them selves prohibited and may well be appropriate and legitimate. Not all financial interests cause Conflict of Interest (COI) or harm to human subjects. However, to the extent that financial interests may affect the welfare of human subjects in research, IRB's, institutions, and investigators must consider what actions regarding financial interests may be necessary to protect human subjects. Please answer the following questions:

Yes	No	
☐	☒	a. Do you or the institution have any proprietary interest in a potential product of this research, including patents, trademarks, copyrights, or licensing agreements?
☐	☒	b. Do you have an equity interest in the research sponsor (publicly held or a non-publicly held company)?
☐	☒	c. Do you receive significant payments of other sorts, eg., grants, equipment, retainers for consultation and/or honoraria from the sponsor of this research?
☐	☒	d. Do you receive payment per participant or incentive payments?
		e. If you answered yes on any of the above questions, please provide adequate explanatory information so the IRB can assess any potential COI indicated above.

XII. **PROJECT COLLABORATORS:**

A. **KSU Collaborators – list anyone affiliated with KSU who is collecting or analyzing data:** (list all collaborators on the project, including undergraduate and graduate students)

Name:	Department:	Campus Phone:
NA		

B. **Non-KSU Collaborators:** (List all collaborators on your human subjects research project not affiliated with KSU in the spaces below. KSU has negotiated an Assurance with the Office for Human Research Protections (OHRP), the federal office responsible for oversight of research involving human subjects. When research involving human subjects includes collaborators who are not employees or agents of KSU the activities of those unaffiliated individuals may be covered under the KSU Assurance only in accordance with a formal, written agreement of commitment to relevant human subject protection policies and IRB oversight. The Unaffiliated Investigators Agreement can be found and downloaded at (http://www.ksu.edu/research/comply/irb/forms/invagree.pdf). The URCO must have a copy of the Unaffiliated Investigator Agreement on file for each non-KSU collaborator who is not covered by their own IRB and assurance with OHRP. Consequently, it is critical that you identify non-KSU collaborators, and initiate any coordination and/or approval process early, to minimize delays caused by administrative requirements.)

Name:	Organization:	Phone:
NA		

Does your non-KSU collaborator's organization have an Assurance with OHRP? (for Federalwide Assurance and Multiple Project Assurance (MPA) listings of other institutions, please reference the OHRP website under Assurance Information at: http://ohrp.osophs.dhhs.gov/polasur.htm).

☐ No
☐ Yes **If yes, Collaborator's FWA or MPA #** _____

Is your non-KSU collaborator's IRB reviewing this proposal?

☐ No
☐ Yes **If yes, IRB approval #** _____

C. **Exempt Projects:** 45 CFR 46 identifies six categories of research involving human subjects that may be exempt from IRB review. The categories for exemption are listed on the KSU research involving human subjects home page at http://www.ksu.edu/research/comply/irb/about/exempt.html. If you believe that your project qualifies for exemption, please indicate which exemption category applies (1-6). Please remember that only the IRB can make the final determination whether a project is exempt from IRB review, or not.

Exemption Category: _____

XIII. CLINICAL TRIAL ☐Yes ☒No
(If so, please give product.)

Post Approval Monitoring: **The URCO has a Post-Approval Monitoring (PAM) program to help assure that activities are performed in accordance with provisions or procedures approved by the IRB. Accordingly, the URCO staff will arrange a PAM visit as approprate; to assess compliance with approved activities.**

If you have questions, please call the University Research Compliance Office (URCO) at 532-3224, or comply@ksu.edu

INVESTIGATOR ASSURANCE FOR RESEARCH INVOLVING HUMAN SUBJECTS

(Print this page separately because it requires a signature by the PI.)

P.I. Name: Dr. Jana Fallin

Title of Project: The Role of Music Education in Early Childhood Literacy

XII. ASSURANCES: As the Principal Investigator on this protocol, I provide assurances for the following:

A. Research Involving Human Subjects: This project will be performed in the manner described in this proposal, and in accordance with the Federalwide Assurance FWA00000865 approved for Kansas State University available at http://ohrp.osophs.dhhs.gov/polasur.htm#FWA, applicable laws, regulations, and guidelines. Any proposed deviation or modification from the procedures detailed herein must be submitted to the IRB, and be approved by the Committee for Research Involving Human Subjects (IRB) prior to implementation.

B. Training: I assure that all personnel working with human subjects described in this protocol are technically competent for the role described for them, and have completed the required IRB training, modules found at: http://www.ksu.edu/research/comply/irb/training/index.html. I understand that no proposals will receive final IRB approval until the URCO has documentation of completion of training by all appropriate personnel.

C. Extramural Funding: If funded by an extramural source, I assure that this application accurately reflects all procedures involving human subjects as described in the grant/contract proposal to the funding agency. I also assure that I will notify the IRB/URCO, the KSU PreAward Services, and the funding/contract entity if there are modifications or changes made to the protocol after the initial submission to the funding agency.

D. Study Duration: I understand that it is the responsibility of the Committee for Research Involving Human Subjects (IRB) to perform continuing reviews of human subjects research as necessary. I also understand that as continuing reviews are conducted, it is my responsibility to provide timely and accurate review or update information when requested, to include notification of the IRB/URCO when my study is changed or completed.

E. Conflict of Interest: I assure that I have accurately described (in this application) any potential Conflict of Interest that my collaborators, the University, or I may have in association with this proposed research activity.

F. Accuracy: I assure that the information herein provided to the Committee for Human Subjects Research is to the best of my knowledge complete and accurate.

_____ _____

(Principal Investigator Signature) (date)

University Research
Compliance Office
203 Fairchild Hall
Lower Mezzanine
Manhattan, KS 66506-1103
785-532-3224
Fax: 785-532-3278
http://www.ksu.edu/research/comply

TO: Jana Fallin
Music
232 McCain Auditorium

Proposal Number: 4160

FROM: Rick Scheidt, Chair
Committee on Research Involving Human Subjects

DATE: January 5, 2007

RE: Proposal Entitled, "The Role of Music Education in Early Childhood Literacy"

The Institutional Review Board (IRB) for Kansas State University has reviewed the proposal identified above and has determined that it is exempt from further review.

This exemption applies only to the proposal currently on file with the IRB. Any change affecting human subjects must be approved by the IRB prior to implementation and may disqualify the proposal from exemption.

Exemption from review does not release the investigator from statutory responsibility for obtaining the informed consent of subjects or their authorized representatives, as appropriate, either orally or in writing, prior to involving the subjects in research. The general requirements for informed consent and for its documentation are set forth in the Federal Policy for the Protection of Human Subjects, 45 CFR 46.116-117, copies of which are available in the University Research Compliance Office and online at http://ohrp.osophs.dhhs.gov/humansubjects/guidance/45cfr46.htm#46.116. In cases of remote oral data collection, as in telephone interviews, oral consent is sufficient and the researcher is required to provide the respondent with a copy of the consent statement only if the respondent requests one. The researcher must, however, ask the respondent whether he or she wishes to have a copy. The initiative in requesting a copy must not be left to the respondent. Regardless of whether the informed consent is written or oral, the investigator must keep a written record of the informed consent statement, not merely of the fact that it was presented, and must save this documentation for 3 years after completing the research.

The identification of a human subject in any publication constitutes an invasion of privacy and requires a separate informed consent.

Injuries or any unanticipated problems involving risk to subjects or to others must be reported immediately to the Chair of the Committee on Research Involving Human Subjects, the University Research Compliance Office, and if the subjects are KSU students, to the Director of the Student Health Center.

Appendix C – Data Collection Instruments

C.1 Interview Protocol

Interview Protocol

Project: The Role of Music Education in Early Childhood Literacy

Date:
Time:
Place:
Participant Code:

Introduction:
Set up tape recorder
Segue from observation to interview with light conversation, recap/memorable moments, etc.

1) Tell me about your educational background?
(Education, teaching experience, plus in that district, building)

2) As an experienced music teacher then, what tasks do you perform?

3) And what roles do you see yourself and music education playing?
(In the regular classroom, the school, the curriculum…)

4) If music education was to be eliminated in this building/district, how would it affect student learning in this building/district?

5) Describe the music textbook selection process in this district.
(Who, when, selected on what merit/criteria; how many years with series; what was used previously & for how many years; formal adoption/selection process)

6) Tell me about how you use your textbooks/series.
(As designed; make changes, why; adherence/deviation of the series; meet needs, needs align with text; district expectations of use, align with other music teachers; skip around, supplement with use of other materials etc.; developmental sequence/scope; complete the book in the year?)

7) How do you define literacy?

8) What are the strengths of your current series in relation to literacy?

9) What do you perceive as the weaknesses of your series in relation to literacy?

10) Thinking about literacy/reading development in relation to music education, how did you obtain that knowledge?
(Where, how, in what ways, what factors contribute)

Closure:
So, what's coming up with you and your kids?
(Program, concert, etc.)
Lots to do! Time is precious. I wish you the best. I thank you for your time and cooperation today, with luck, we'll see each other soon. 'Til then…

C.2 Observation Protocol

Observation Protocol

Project: The Role of Music Education in Early Childhood Literacy

Date:
Time:
Place:
Participant Code:

(Greetings; sign consent form; inform that I write a lot/don't be startled; pre-set before class enters)

Descriptive Notes	Purpose	Reflective Notes	Code

Other considerations:
*Engaging student learning

*Classroom management
(Student behavior; flexibility/responsiveness)

*Assessment of student learning

*Physical Environment

C.3 Questionnaire

Questionnaire

1. Describe your school setting. Include areas regarding:

- rural, urban, or suburban classification;
- parents;
- community;
- special services;
- special students status;
- Pre-K or Head Start on premises or "feeder";
- pull-outs/tutoring;
- after school situations;
- other considerations.

2. Using the following definitions, is there anything you would like to add to your previous interview responses regarding roles you see yourself and music education playing in the regular classroom, the school, the curriculum, and tasks that you perform?

Role: a character assigned or assumed; a socially expected behavior pattern; a function or part performed especially in a particular operation or process.

Task: a usually assigned piece of work often to be finished within a certain time; something hard or unpleasant that has to be done; task implies work imposed by a person whether self-imposed or by another.

3. If you were asked to present to the Board of Education in a community forum to keep music funding and programs in this building/district, what specific examples (3-5 essential areas) of long-term impact of music education would you include?

4. If/when you "pull" other materials to supplement your curriculum, describe when, what, from where, and why you do so.

5. Comment on your perceptions of the currently used textbook series in regards to listening and aural discrimination skills.

6. Locate the Early Reading Assessment (ERA) information from the 1st grade this year.

What objective and quantifiable data did it contain?

Describe the process of acquisition you went through.

What did the records mean to you as a music educator?

Will you change your teaching with the current ERA information? Why or why not?

7. As you review the Kansas State 1st grade Reading standards, PDF attachment included below, are there any correlations to what you "do" as a music educator? How? Which standards, benchmarks, indicators apply?
http://ksde.org/Default.aspx?tabid=142

8. What words of advice, recommendations, or perceived needs would you offer to enhance the role of music education in regards to early literacy/reading development to:

- other music educators,
- general classroom teachers,
- administration and district professional development
- teacher education programs
- other entities?

9. Please include any additional items, suggestions, or comments regarding this topic or study.

C.4 Kansas State Reading Standards - 1st Grade

Standard 1: Reading **FIRST GRADE**

Reading: The student reads and comprehends text across the curriculum.

Benchmark 1: The student uses skills in alphabetics to construct meaning from text.

First Grade Knowledge Base Indicators	Instructional Examples
The student... 1. identifies sounds of both upper and lower case letters of the alphabet. (Letter-sound Relationships)	The teacher... (a) links sound symbols to students' names • ABC Charts • Individual ABC Books
2. ▲ identifies names of both upper and lower case letters of the alphabet.	2. (a) provides students with letter tiles. The teacher begins with auditory practice in demonstrating which words begin with the same sound, saying the first or last sound in a word or combining separate sounds to say the word or breaking the word into its separate sounds. The teacher then shows the students the connections between the letter tiles or letter cards with written word on the board or overhead.
3. identifies and distinguishes between letters, words, and sentences.	3. (a) uses a flip chart or big book with words, letters, and sentences and has students identify each. (b) models *one-to-one match*. (c) demonstrates a word sort activity. The teacher creates a sheet of pictures or words for the students to cut and sort. The teacher makes larger copies of the needed pictures or words to work with in front of the class of students. The teacher has the students match the beginning and ending sounds to the pictures or words he/she is revealing to letters from alphabet tiles.
4. ▲ identifies and manipulates *phonemes* in spoken words (e.g., *phoneme isolation*, *identification*, *categorization*, ▲*blending*, ▲*segmentation*, ▲*deletion*, ▲*addition*, ▲*substitution*). (*Phonemic Awareness*)	4. (a) provides students with letter tiles. The teacher begins with auditory practice in determining which words begin with the same sound, saying the first or last sound in a word or combining separate sounds to say the word or breaking the word into its separate sounds. After the demonstration, the students manipulate their tiles to sound out and spell words.

	(b) provides students with letter tiles or letter cards, then... • demonstrates segmenting words into sounds (e.g., What letters/sounds do you hear in the word "pet") at the beginning and at the end? • demonstrates sounds in short-term memory and combine them to form a word (e.g., What word do we have when you put these sounds together: /p/, /a/, /t/?) • demonstrates detecting and manipulating sounds within words (e.g., Is there a /k/ in the word bike?) • demonstrates sequences of sounds in words (e.g., How many sounds do you hear in the word "fish?" - /f/, /i/, /sh/) • demonstrates isolated beginning, middle, and ending sounds (e.g., "What are the first sound, medial, and ending sounds in "dog"?) • demonstrates using known words to make analogy for new words (These are on-going processes throughout the school year.) (c) has students monitor their reading and self-correct when an incorrectly identified word does not fit with cues provided by either the letters in the word (visual) or the context surrounding the word (meaning and structure) by asking "Does it look right, sound right, and make sense?". (d) provides initial practice in controlled connected text in which students can apply their newly learned skills successfully. (e) models an activity using sound boards for beginning/ending consonants and blends. The teacher makes a sheet of pictures for the students containing the studied sounds and the letter to either the initial sound, blends, or ending sound. As the teacher holds up a letter or blend card representing a particular sound, the students find their corresponding picture card with matches the sound. For example, the students' picture card may be a clip art of a flag. The teacher holds up a blend card with the letters f-l. The students should hold up the card with the clip art of the ship. This is a non-threatening activity as students can self-check their responses. (g) produces rhyming words and has students distinguish rhyming words from non-rhyming words.

	(h) prepares a sound box for students. Using a three-pocket folder, the teacher selects words which contain three letters (e.g., sun) and makes cards to fit into the pockets which contain the letters to the studied word (making sure the letters are shown when the card is inserted into the pocket). The teacher labels the first pocket with the word beginning, the second pocket with the word middle, and the third pocket with the word end. The teacher holds up the card with the letter "s" and randomly selects a student to put letter card in the correct pocket to indicate the letter is the sound of the beginning, middle, or end. The teacher may also put the letter cards into the pockets backwards (not showing the letter). The teacher stresses the sound of the word and the students take turns turning the card (beginning, middle, or end) which he/she thinks is the correct sounds. (i) demonstrates *phoneme* manipulation, for example, students are shown a picture of a bee and are asked to take off the /b/ and add a /s/ to the word to create a new word using magnetic letters, letter tiles, or white boards with markers. (This is an year long activity.)
5. ▲ identifies *onsets* and *rimes* in spoken words (e.g., *alliteration, intonation, rhyme*). (*Phonological Awareness*).	5. (a) reads nursery rhymes and riddles to students in order for them to hear the sounds. (b) and students make class rhyming books and individual rhyming books for familiar reading. (c) selects several grade-appropriate words which rhyme. The teacher has the students listen to a song which contains rhyming words. Using the teacher selected rhyming words, the teacher and students create their own rhyming word song. (d) reads a picture book to students which contains several grade-appropriate rhyming words. Before reading the story, the teacher makes a word card using the rhyming words from the story and also some other words which do not rhyme. The students cut the cards then can either play memory or can play go fish with the cards.

	(e) provides practice for locating rhyming patterns with posters, Big Books, and transparencies.
6. ▲ uses knowledge of letter-sound correspondences (e.g., ▲consonant-vowel patterns, *blends*, ▲*digraphs*, *word families*) when reading unknown words. (*Phonics*)	6. (a) helps students understand why they are learning the relationships between letters and sounds. (b) uses a wheel to reinforce the letter patterns. The teacher makes sure that have worked in whole and small groups to sort the words from the various word families. (b) uses decodable text based on specific lessons in the early part of the first grade as an intervening step between explicit skill-acquisition and the student's ability to read quality trade books. Decodable steps should contain phonetic elements and sight words that students have been taught. However, the text should be unfamiliar to students so that they are required to apply word-analysis skills and not simply to reconstruct text they have mentioned. (c) provides repeated opportunities to read words in contexts in which students can apply their knowledge of letter-sound correspondences. (This is a year long activity) (d) begins instruction with word families and word patterns (e.g., reading orthographic units of text: at, sat, rat, and fat). (This is an on-going process throughout the school year.) (e) provides learning activities in graphophonemic relationships, letter-sound associations, letter-sound correspondences, sound-symbol correspondences, and sound-spellings.
7. manipulates *onsets* and *rimes* in spoken words (e.g., *alliteration*, *intonation*, *rhyme*). (*Phonological Awareness*)	7. (a) will build a set of onset and rime cards and divide them through the middle like a small puzzle in order for students to put them back together. (b) will write a phonogram or word family ending on the board. Students are given consonant, *consonant cluster*, or *digraph* cards and asked to raise their hands if they think they are holding a card with a letter or letters what will turn the rime into a real word. The teacher will put a new rime on the board, and repeat the activity.

	(The instructional examples provided in this document are **only** examples of teaching strategies and are not intended to endorse any one specific idea or concept. These examples should not be used exclusively for instruction.)
Teacher Notes:	

Reading: The student reads and comprehends text across the curriculum.

Benchmark 2: The student reads fluently.

First Grade Knowledge Base Indicators	Instructional Examples
The student... 1. applies *concepts of print* when reading (e.g., front-to-back, top-to-bottom, left-to-right, capitalization).	The teacher... 1. (a) models fluent reading by reading aloud to demonstrate return sweep and *one-to-one match*. (b) provides experience with different genre through read-aloud books of different types that have been selected by a student in order to increase motivation of individual reading. (c) includes sufficient independent practice time to read familiar texts to develop fluency. (d) incorporates *assisted reading* with each reading passage. (e) models repeated oral reading. (f) works with sign language interpreter to demonstrate the inflectional patterns of sign language.
2. uses punctuation at *instructional* or *independent reading levels* while reading.	2. (a) has students read in pairs. They may highlight punctuation before they read orally. (b) works with sign language interpreter to demonstrate the rhythm of sign language.
3. reads expressively with appropriate *pace*, *phrasing*, *intonation*, and rhythm of speech with familiar text.	3. (a) provides books that makes use of a variety of text fonts. (b) introduces passage reading soon after students can read previously taught and irregular words. (c) introduces passages that contain commonly used high-frequency and low-frequency irregular words.

	(d) allows students ample time to listen to recorded books. (e) models echo reading. The teacher reads a picture book story to the students. The second time the teacher reads the story, the teacher reads couple of sentences and has the students echo the teachers' modeling by reading the same sentences using the same intonation and phrasing as the teacher. (f) uses *Paired Reading* or cross-age reading opportunities to provide practice in oral reading. This can be a reading pair between a student with an adult or a student with another student. One person in the pair must be able to model good reading fluency. (g) allows time for Sustained Silent Reading (SSR).
4. uses knowledge of sentence structure to read fluently at *instructional* or *independent reading levels.*	4. (a) provides opportunity for *choral reading* or *Reader's Theatre*. (b) introduces fluency practice after students read words in passages correctly. (c) selects a story (at times several with the same theme and at different readability levels) for the students to read through guided reading. The teacher first selects unfamiliar words tailored to the needs of the students. Before reading of the text, the teacher initially introduces and often guides the students through the text. During and after reading the text, the teacher encourages discussion and questioning of the text. After discussions have taken place, the teacher may expand comprehension through a writing activity about the text. (d) provides time for independent reading.
5. uses a variety of *word-recognition* strategies (e.g., practicing words in isolation) to read fluently.	5. (a) uses *choral reading*. Copy a short story or poem onto a poster or large sheet of paper or project with the overhead. Have the students read the text repeatedly over several days. Once students can read with few errors, invite older students or adults to witness the success. (b) models a think aloud on what strategy is chosen and explains why this strategy is being used.

	(c) uses analogy to get from known word to new word. (d) uses meaning guided by syntax and visual information to read informational text. (The instructional examples provided in this document are **only** examples of teaching strategies and are not intended to endorse any one specific idea or concept. These examples should not be used exclusively for instruction.)
Teacher Notes: Promote reading habits with students (especially those students with limited resources at home) by allowing them opportunities to check out personal-interest books from the school library. ****NOTE: Students should not be asked to participate in whole class or small group student-by-student, "round-robin" oral reading. This practice does not support fluency or comprehension, and is therefore not recommended.**	

Reading: The student reads and comprehends text across the curriculum.

Benchmark 3: The student expands vocabulary.

First Grade Knowledge Base Indicators	Instructional Examples
The student... 1. demonstrates automatic recognition of *sight words.*	The teacher... 1. (a) a) asks students to locate sight words within the environment, familiar text, and new text. The teacher writes these words on a clipboard or cards. After returning to the classroom, discuss the sight words with the students. (b) offers a limited number of irregular words so that the students will not become overwhelmed and frustrated. (c) strategically separates high-frequency words (e.g., was, saw, them, they, and there) that are often confused by students. (d) models the word through a draw and label activity. The teacher shows the student a picture of the word to be learned, draws a picture representing the word, and labeling the word under the picture. Student activities on the following days will require the students to recall the word, match the picture with the word (cut and paste), and draw and label. (e) writes several sight words onto brightly colored shapes, then, puts them near the door. Each time the students line up to leave the room, the teacher reviews the selected sight words with them. Once the words have been mastered, the teacher has the students orally use the word in a sentence. (f) demonstrates automatic recognition of *sight words*.
2. determines the meaning of unknown words or phrases using picture clues and *context clues* from sentences.	2. (a) demonstrates checking picture clues with syntax and visual information to confirm meaning. (b) models the concept of searching for context clues by writing sentences from the text which relate to the unfamiliar word onto flip chart paper, on the overhead, or on the board and highlights the

	words (context clues) during the modeling. (e) uses leveled text with familiar content and high-utility vocabulary to establish meaning a clue source in reading.
3. identifies *synonyms* and *antonyms* to determine the meaning of words.	3. (a) builds *word walls* containing *synonyms* and *antonyms* and discusses the meaning of the new words. (b) assists students to construct (over a long period of time) an individual thesaurus. (c) will give groups of students cards on which several *synonyms* are written. The teacher will ask the students to pair them together like the game Concentration. The same could be done with *antonyms*.
4. determines meaning of words through knowledge of word structure (e.g., *compound nouns*, contractions, inflectional endings).	4. (a) will use the *word wall* to demonstrate which of these words are nouns or contractions and which words have inflectional endings. (b) tells the students they are going to hear some words in a very strange way. The teacher starts by segmenting compound words, pausing for a second between syllables for a few seconds. (c) tells students that they are going to hear some harder words now. The teacher uses words that are not compound words. The teacher tells students they have to be sound detectives and very good listeners to figure out these words. Students are then asked to pretend that their arms are popcorn and they will need to put one arm out to the side and say "pop". Leaving the first arm up, extend the other arm and say "corn". Students are directed to put both arms together and say the new word "popcorn". (d) chooses an unfamiliar word of the week. While introducing the unfamiliar word, the teacher has the students pantomime, draw pictures or play word detective with the word. Motivate students to use the word regularly by using the unfamiliar word throughout the day in conversation or writings. (e) asks students to look for a familiar apart of the word (familiar chunk, known word within a word) in order to get through text

	structure of an unfamiliar word. (The instructional examples provided in this document are **only** examples of teaching strategies and are not intended to endorse any one specific idea or concept. These examples should not be used exclusively for instruction.)
Teacher Notes:	

Standard 1: Reading **FIRST GRADE**

Reading: The student reads and comprehends text across the curriculum.

Benchmark 4: The student comprehends a variety of text (*narrative*, *expository*, *technical*, and *persuasive*).

First Grade Knowledge Base Indicators	Instructional Examples
The student... 1. participates in discussions about *narrative*, *expository*, and *technical texts* read to them or text read independently.	The teacher... 1. (a) sends notes home in the parents' home language encouraging volunteers to read to the students in the classroom. The teacher provides books in different languages available for volunteers to read to the student. (b) selects a story (at times several with the same theme and at different readability levels) for the students to read through guided reading. The teacher first selects unfamiliar words tailored to the needs of the students. Before reading of the text, the teacher initially introduces and often guides the students through the text. During and after reading the text, the teacher encourages discussion and questioning of the text. After discussions have taken place, the teacher may expand comprehension through a writing activity about the text. (c) models how students can respond through talk, movement, music, art, and drama to a variety of stories and poems in ways that reflect understanding and interpretation.
2. locates and discusses title, author, illustrator, and illustrations.	2. (a) models how to state the title, illustrator, and author when orally reading a book.
3. uses pictures, content, and prior knowledge to make predictions.	3. (a) asks the students to look at a picture or title and tell what they think will happen next. (b) has the students make text-to-self connections. (c) explains that any logical prediction is a good prediction. (d) models predicting the outcome of an event or action and uses the text to confirm or contradict the prediction.

4. responds logically to literal, inferential, and *critical thinking* questions before, during, and after listening to or reading the text.	4. (a) assigns student *dyads*, where students ask each other questions about the story. (b) designs instruction to teach children to answer "who", "what", "when", "where", and "how" questions. (c) has the student use the *QAR Framework* and poses questions to assist students in their understanding of the text. This process can be used to activate prior knowledge, to make predictions based on illustrations, and to recall important events and details presented in the text.
5. uses picture clues, text, and prior knowledge to make inferences and draw conclusions.	5. (a) show pictures before reading, ask students to share what is happening and why they believe that. (b) has the student organize sentence strips, word, or pictures depicting the main events after listening to or reading *narrative text*. (c) uses books that show strong emotions but do not state the emotion. Ask students what the *characters* are possibly feeling. (d) asks students to make text-to-self, text-to-text, or text-to-world connections.
6. develops awareness of text structure (e.g., *sequence*, *problem-solution*, *comparison-contrast*).	6. (a) has students act out important events in stories. (b) provides a *graphic organizer* (e.g., *Venn Diagram*). (c) provides a literary element chart that includes at least *setting* and main *character*. (d) models retelling, using the *setting*, *characters*, and important events as the recall anchors.
7. ▲ sequences events according to basic story structure of beginning, middle, and end.	7. (a) models *DRTA (Directed Reading Thinking Activity).* (b) uses elements of story grammar as a structure for recalling and retelling the story in logical/sequential order. (c) has students discuss the elements orally and make comparisons

	with other stories. (d) uses graphs, charts, or signs to organize information.
8. compares and contrasts information (e.g., *topics*, *characters*) between texts.	8. (a) assists the students in creating a timeline. (b) introduces text in which the components of text are explicit (beginning, middle, and end being obvious). (c) has the students discuss the elements orally and make comparisons with other stories.
9. ▲ *retells* or role plays important events and *main ideas* from *narrative* and *expository* texts.	9. (a) for *narrative text,* divide the class into small groups in order to create a play that retells the story, for *expository text*, act out the *main idea*. (b) models retelling with the students by drawing pictures of the organized ideas from a story, thus, to promote students to create an imaged gestalt (visualization). Encourages students to visualize while reading. (c) models the concept of retelling the story by *using* puppets to retell story.
10. identifies the *topic* and *main idea* in appropriate-level texts.	10. (a) divides the class to identify the *topic* of a story read out loud and discuss *main idea*. This should happen on a regular basis. (b) reads a story and prompts the students with the "wrong" information concerning the *topic* and *main idea*. Then the teacher asks the students to give the "correct" information. (c) models how to identify *topic/main idea*.
	(The instructional examples provided in this document are **only** examples of teaching strategies and are not intended to endorse any one specific idea or concept. These examples should not be used exclusively for instruction.)

Teacher Notes:
Promote reading habits with students (especially those students with limited resources at home) by allowing them opportunities to check out personal-interest books from the school library.

****NOTE: Students should not be asked to participate in whole class or small group student-by-student, "round-robin" oral reading. This practice does not support fluency or comprehension, and is therefore not recommended.**

Standard 2: Literature **FIRST GRADE**

Literature: The student responds to a variety of text.

Benchmark 1: The student uses literary concepts to interpret and respond to text.

First Grade Knowledge Base Indicators	Instructional Examples
The student... 1. identifies and discusses *character*(s) in literature.	The teacher... 1. (a) gains the assistance of the art and/or music teacher(s) to assist in creating a puppet show emphasizing the *characters* and *setting* of a story. (b) models story mapping.
2. identifies and describes *setting*.	2. (a) has students draw the *setting*. They should show the picture as they describe the *setting* to the class. (b) models story mapping.
3. follows events in a *plot*.	3. (a) teaches students to generate questions for a peer about a story that is read to them. (b) allows for class discussion regarding problem and solution. (c) reads aloud a variety of genres to the class. (d) conducts group discussions in literature circles explaining the conflicts in a story. The teacher has the student discuss the author's ideas and how they relate to their own ideas. (e) models story mapping.
	(The instructional examples provided in this document are only examples of teaching strategies and are not intended to endorse any one specific idea or concept. These examples should not be used exclusively for instruction.)

Teacher Notes:

Standard 2: Literature **FIRST GRADE**

Literature: The student responds to a variety of text.

Benchmark 2: The student understands the significance of literature and its contributions to various cultures.

First Grade Knowledge Base Indicators	Instructional Examples
The student... 1. listens to or reads text to connect personal experiences and ideas with those of other cultures in literature.	The teacher... 1. (a) reads poems and nursery rhymes to the students. (b) enlists the assistance of the school librarian in locating read-aloud materials from a variety of cultures. (c) models personal experiences with other cultures. (d) models text-to-self, text-to-text, or text-to-world connections. (The instructional examples provided in this document are **only** examples of teaching strategies and are not intended to endorse any one specific idea or concept. These examples should not be used exclusively for instruction.)
Teacher Notes:	

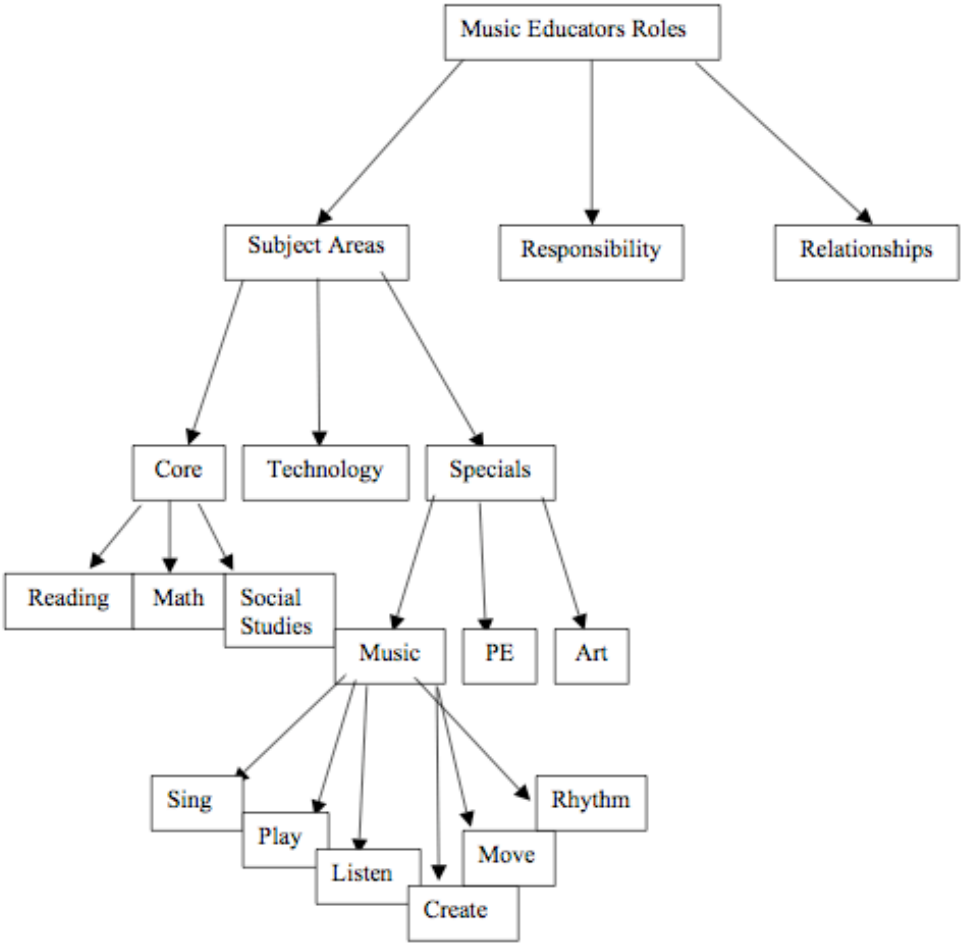
Appendix D – N4 Classic Initial Coding

Initial Nodes

(2) Subjects/areas
(2 1) "Core"
    (2 1 1)Reading
    (2 1 2)Math
    (2 1 3) Social Studies
(2 2) Technology
(2 3) "Specials" (The Arts)
    (2 3 1) Music (aural)
        (2 3 1 1) Concepts/Elements
            (2 3 1 1 1) Sing
            (2 3 1 1 2) Play
            (2 3 1 1 3) Listen
            (2 3 1 1 4) Compose/create
            (2 3 1 1 5) Movement
            (2 3 1 1 6) Rhythm
        (2 3 1 2) Music for Life
    (2 3 2) Art (visual)
    (2 3 3) PE (kinesthetic)

(3) Responsibility
    (3 1) Teaching
        (3 1 1) General Classroom Music
        (3 1 2) Other
            (3 1 2 1) Lessons
                (3 1 2 1 1) Musical
                (3 1 2 1 2) Other areas
            (3 1 2 2) Accompany
    (3 2) Schedule
        (3 2 1) Classes
    (3 2 2) Students
    (3 2 3) Frequency
    (3 2 4) Duration
    (3 3) Advocate
    (3 4) Organization
        (3 4 1) Record keeping
        (3 4 2) Copying
        (3 4 3) Planning

Coding Tree


Music Educators Roles
Subject Areas
Responsibility
Relationships
Core
Technology
Specials
Reading
Math
Social Studies
Music
PE
Art
Sing
Play
Listen
Create
Move
Rhythm

Appendix E - National Music Education Standards

National Standards for Music Education

1. Singing, alone and with others, a varied repertoire of music.
2. Performing on instruments, alone and with others, a varied repertoire of music.
3. Improvising melodies, variations, and accompaniments.
4. Composing and arranging music within specified guidelines.
5. Reading and notating music.
6. Listening to, analyzing, and describing music.
7. Evaluating music and music performances.
8. Understanding relationships between music, the other arts, and disciplines outside the arts.
9. Understanding music in relation to history and culture.