VOCABULARY ACQUISITION WITH KINDERGARTEN CHILDREN USING SONG PICTURE BOOKS

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ABSTRACT OF DISSERTATION

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Abstract

Researchers have suggested a connection between music and language development (Lamb and Gregory, 1993), wherein integrating music and literacy activities can optimize student literacy learning. In particular, experiences that develop vocabulary through students’ participation in singing stories that are rich in phonemic patterns, such as rhyme and alliteration, are highly recommended. Combining books with music-integrated literacy experiences can additionally enhance young children’s exposure to language (Wiggins, 2007).

This practice-based research was conducted in an early childhood education setting with four classrooms of kindergarten students, including students with special needs and English language learners, in a vocabulary acquisition experiment.

An Analysis of Variance (one-way ANCOVA) was used with pretests and post-tests of students’ vocabulary prior to and after vocabulary instruction. Two song picture books were read to and sung with students. This research study assessed whether there was a difference in students’ acquisition of vocabulary words when song was used independent of the particular song picture book.

In addition, students’ classroom teachers used an observation protocol for documenting their students’ engagement with the song picture book when it was read and when it was sung. A follow-up interview with students’ teachers by the researcher was conducted to identify any major similarities and/or differences in student engagement.

Finally, each child participating in the study was asked whether they felt singing along with the picture book helped them to learn the ten targeted words in each of the song picture books.
The results of the switching replication quasi-experimental design determined whether students’ singing along with a song picture book significantly increased their vocabulary acquisition.

- **Keywords:** kindergarten, vocabulary development, music, song picture books, brain research.
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Chapter 1: Introduction

Early childhood professionals have long recognized the importance of vocabulary development in preparing young children to succeed in school. Knowledge of vocabulary words plays a key role in enabling the kind of early learning experiences that research shows are linked with reading achievement (Strickland & Riley-Ayers, 2006). Kindergarten children are exposed to new words daily in their classrooms through the use of stories, songs, and finger plays. Conversational and instructional interactions with teachers, peers, and family members also provide opportunities for young children to develop their vocabularies. Music is a modality that seems to actively engage children in learning and to provide a strong connection to literacy and language learning.

Purpose of the Study

Research suggests that the more words young children know, the more they are able to comprehend what they hear or read. The purpose of this study is to determine if singing along with a song picture book supports the acquisition of vocabulary words with kindergarten students. Integrating singing into story reading, through the use of song picture books, and having young children sing along to simple, silly songs may not only offer them a fun experience, but also may be a powerful tool in helping them to learn and remember new words.

Statement of the Problem

In her role as a kindergarten teacher of children with special needs, the researcher has noticed a long-standing problem for this population concerning the mastery of vocabulary words used in the curriculum. While all young children are in the process of developing language skills, children with language-based disabilities have significant difficulties learning and retaining basic vocabulary.
Over the past fifteen years, data has been collected at the Early Childhood Education Center, where the researcher teaches, regarding this problem. Standardized tests, such as the Woodcock-Johnson III, CELF Pre-school Test, Boehm Basic Concepts, the Brigance Developmental Inventory, and the Dial-R screening have been used with young children to evaluate their language skills. Students with language-based disabilities, when asked to point to specific pictures showing simple words, are unable to recognize many of them. As the researcher teaches young children who have language-based disabilities in inclusion classrooms, she notices that they are unable to:

- Follow verbal directions that are given by their teachers.
- Comprehend curriculum material that is presented.
- Participate fully in conversations and activities.

The inability to learn and retain vocabulary words is not unique to the young children at the researcher’s school. Research by the American Speech-Language-Hearing Association (2001) and the National Reading Panel (2000) suggests that vocabulary development is a concern in schools across America and can be challenging for all children and especially for children with special needs. Explicit strategies are needed for young children to support their vocabulary development and to ensure academic success (Justice & Meier & Walpole, 2005).

**Problem Significance**

Knowledge of vocabulary used in the kindergarten curriculum helps young children to build pre-reading and early mathematical skills, strengthen their existing word knowledge, and develop their self-esteem. The use of language is basic to all communication and is at the foundation of all early curriculum that is presented in pre-school and kindergarten classrooms. If
children do not learn the meaning of words and use them, they will struggle to interact with others and to understand subject matter in all areas of learning.

In the researcher’s school district, as well as others, vocabulary is used daily for many purposes including conversation, classroom instruction, reading stories, giving directions, and playing games. The daily school routine can be overwhelming for children who struggle with understanding language, processing what is being said, formulating their ideas into words and sentences, and making verbal connections. Children with language-based disabilities are at a distinct disadvantage. Developmentally appropriate strategies for developing language, as well as instructional materials for enhancing young children’s vocabulary, are necessary.

Vocabulary development is identified nationally as an essential component of all available language programs that teach young children literacy skills to learn how to read. Research confirms the importance of vocabulary development and the critical need for comprehension. Students who come to school with limited vocabularies have difficulties in learning new words, since the size of one’s vocabulary determines reading comprehension (Neuman & Dwyer, 2009).

**Research Questions**

1. To what extent does singing along with a song picture book increase kindergarten children’s vocabulary acquisition?

2. To what extent does singing along to a song picture book with a focus on vocabulary acquisition increase student engagement?

3. To what extent do young children, as self-reported, believe that singing along to a song picture book helped them to learn the targeted vocabulary words of a lesson?
Theoretical Framework

From my readings, there were aspects of complementary theories that were helpful to me in researching the use of singing along to a song picture book in developing vocabulary in young children. These are the developmental theory and information-processing theory related to brain research and music. Each of these will be addressed below.

**Developmental theories.** First, the developmental theories of Piaget, Vygotsky, and Bruner, and of the Neo-Piagetians Case and Fischer, all explore how young children learn through the use of language. Piaget’s cognitive-stage theory emphasizes that cognition plays a central role in all development. Piaget believed that thought is developed prior to language. Children can use words that denote basic concepts such as “more”, “taller”, and “the same”, but might not understand what they mean unless they have developed representational thought (Miller, 2002).

The “Neo-Piagetians” Case and Fischer were developmental psychologists who assimilated parts of Piaget’s studies and expanded it through their own research in child development and cognition. They suggest that concept development is a process that goes through stages and structural change so that lower level concepts are integrated to form higher-level concepts (Miller, 2002).

Vygotsky stressed that language is the most important psychological tool of a culture. He saw a powerful interplay between mind and language. He claimed that when children use language they are using a system of meanings that are constructed by their culture; that system shapes their attempts to make sense of their world (Miller, 2002). Vygotsky believed that collaboration with others was a source of cognitive development.
Vygotsky claimed that humans develop their intellectual functioning through activity. Learning is a dynamic process of guided discovery. A skilled adult or peer uses a “scaffolding” approach to build on the competencies that a child already has and to present activities supporting a level of competencies slightly beyond where the child is. Vygotsky defined this “distance between the child’s actual developmental level through independent problem solving and the higher level of potential development through problem solving with adult guidance or in collaboration with more capable peers” (Miller, 2002) as a zone of proximal development.

This theory is reflected in classrooms where play, interactive learning, and collaborative peer learning take place. Children are provided with many rich experiences to use their language in play, to interact with others, to share their ideas, and to communicate with others by their actions. This natural collaboration facilitates language and increases the possibilities to develop one’s knowledge. The use of language in play helps children make sense of their world and make valuable connections to develop their thinking. Children can also use their speech to talk to themselves (private speech or self-talk) to guide their thinking, help them solve a problem, and plan what they are going to do.

Bruner’s educational theory also addresses young children’s stages of cognition. He agreed with Piaget and Vygotsky that learning is an active process of inquiry in which learners construct new ideas based on current and past knowledge. Children make connections and discover relationships between concepts they already know through active engagement and experiences (Clabaugh, 2009). Through action, they construct mental representations of concepts that are summarizing images. The images, or “icons,” as Bruner called them, represent what children have learned. As children develop and their images grow increasingly detailed, they are able to find conventional symbols meaningful (Gromko, J. E., 2005).
Bruner felt that the best stimulus for learning was an interest in the material to be learned. His theory stresses that active learning is the basis for understanding and that students should be given experiences that connect prior schemata with new information. Bruner’s theory identifies three principles for instruction: concern with the experiences and contexts that make the child willing and able to learn (readiness); structure so that students can easily grasp the information being presented (spiral organization); and design to facilitate extrapolation and fill in the gaps (going beyond the information given).

All of the research by the developmental psychologists considers changes that are made in a child’s development and how these changes lead to an increase in mental capacity. The importance of environment is discussed as well as the need for appropriate opportunities and training to be provided to young children to support and develop basic language concepts. Limits in a young child’s ability to understand information in their social experiences can constrain what the child is able to learn at any developmental level.

**Information processing theory and brain research.** The second and third bodies of knowledge relevant to understanding how young children learn and remember vocabulary are the information-processing theory and current brain research. Information processing studies the flow of information through the cognitive system. Of interest are curriculum strategies that help young children process, remember, and retrieve information about vocabulary that is presented to them. Miller (2002) discusses that classroom instruction needs to take into account the individual difference in children’s knowledge and learning styles. Torgeson (1986) concurs that the knowledge of a child’s unique pattern of processing skills is helpful in planning appropriate learning. Stanovich (1986) discusses research done within the information-processing theory about the importance of a variety of linguistic, or language-based, processing skills, in explaining
development. Brown (1975) describes how cognitive processing develops in young children, as well as the relationship between children’s development of knowledge and the ability to make more connections depending on different educational approaches and strategies. Information-processing theory investigates processing and memory limitations, strategies for overcoming them, and specific behaviors involved in the process of change (Siegler, 1998). Both the developmental theorists’ research and the information-processing approach attempt to explain how more advanced concepts grow out of simpler ones (Miller, 2002).

Current brain research is affected by the developmental theory and the information processing theory, which are interrelated. Researchers have determined that the left hemisphere and the right hemisphere are different in what kinds of information they process. The left hemisphere is usually associated with logical thinking, phonics, abstract symbols, naming of objects, verbal memory, and sequencing of concepts. The right hemisphere is associated with non-verbal learning, tonal memory, drawing, holistic thinking, body awareness, musical hearing, and emotional thought (Rettig, 2005). Because of technology and imaging techniques, it is possible to look inside the brain and see which areas are most active while a person is engaged in various mental activities (Wolfe, 2010).

Electroencephalography (EEG), the recording of electrical activity along the scalp produced by the firing of neurons within the brain, is a valuable tool used in studying education-related issues such as language processing. Paula Tallal, a language expert at Rutgers University, has used EEG along with Magnetic Resonance Imaging (MRI) to determine that children with normal language skills have “lopsided” brains; that is, the left hemisphere is larger and more active than the right. An MRI is a non-invasive medical test that uses a powerful magnetic field, radio frequency pulses, and a computer to produce detailed pictures of organs,
soft tissues, bone, and virtually all other internal body structures. The left hemisphere of the
brain specializes in language processing and the production of speech. Tallal has discovered that
children with language disorders often have balanced brains with both left and right hemispheres
nearly equal in size and activity. She determined that the underpowered left hemisphere was not
fast enough to adequately process language at normal speeds (Tallal, 2000).

Discoveries made in the field of neuroscience are helping us to connect brain research
with teaching practices and to better understand the learning process. The implication of recent
brain research for teachers is that it provides a solid foundation on which to base educational
decisions. Practical classroom applications and brain-compatible teaching strategies are now
known and available for use by educators.

**The use of music in support of learning.** The use of music and how music can connect
to the previous discussed theories, developmental and information processing and brain research,
to enhance language development in young children and engage them in developing their
vocabularies, is the focus of this section. Howard Gardner’s theory of multiple intelligences
cites music as the first intelligence to emerge in young learners (Gardner, 1993). Many young
children appear to be naturally inclined to hum or to sing a tune so it is beneficial to build upon
their musical interests and enhance their literacy development simultaneously. Much of the basic
curriculum and instruction in schools is focused only on the left hemisphere (language,
logical/mathematical) (Rettig, 2005). An approach to teaching that puts an emphasis on the
multiple intelligences will reach both hemispheres and ensure that children learn and retain
information longer than when taught using other approaches (Fishback, 1999).

Another important point with regard to multiple intelligence research is that teachers can
help children discover what they are good at and focus on ability rather than disability. In his
book *Frames of Mind*, Howard Gardner contends that intelligence exists in at least seven separate spheres and that competence in one need not be related to competence in others. Students who are having difficulty in a certain subject might be encouraged by their teachers to capitalize on their strengths in other areas to help them overcome their difficulties. Gardner challenges teachers and students to be creative in teaching and learning and to present curriculum material in a way that is relevant to the individual child (1999).

Music is one of the multiple intelligences that could be used to enhance learning, for instance by helping young children learn new vocabulary words and remember information that is presented to them. Woodall and Zeimbroski (2002) agree that music plays an important role in language and literacy development. Strong social bonds are encouraged through music and songs beginning in pre-school. Toddlers can begin to experiment with grammatical rules and various rhyming patterns in songs. A child’s initial introduction to patterned text often occurs first in songs, chants, and rhymes, which are repeated throughout childhood. When songs, chants, and rhymes are utilized, concepts about print become more meaningful and conventions of print are learned in context.

Goodall (2006), an English composer and music expert, also proposes that it is much easier to learn new things when they are sung. Singing in learning is encouraged as a way to develop better language, social, listening, and memory skills as well as to build confidence. Singing develops a child’s self-esteem, promotes teamwork irrespective of age, gender, and background, celebrates diversity, facilitates self-expression, and is just plain fun. Music is universal and is found in every human culture. Studies show that music fosters communication, wellness, and bonding across all cultures. Children do not need any formal training to learn how to sing and dance. It was this innate feature of music that made the researcher wonder if singing
along to song picture books could be used as a powerful teaching tool to develop vocabulary in young children. Psychologist Rory Allen of Goldsmiths, University of London, has found that children who have been diagnosed with autism, a communication disorder, have no difficulties perceiving music and have the same physical responses to emotional music that typically developing children do.

Neuroscientists are studying and scanning activity in the brain, where music is experienced, to try to understand what neurons music triggers and how music can alter our biochemistry (Zimmer, 2010). Aniruddh Patel, an expert on music and the brain at the Neurosciences Institute in La Jolla, California, and his colleagues examined the parts of the brain that handle different aspects of music (e.g. tone, rhythm). They found that there is no one lobe that is dedicated to those particular jobs, but that music is interconnected to other networks of the brain. Higher cognitive operations, such as music, are an emergent property of the system as a whole (Levitin, 2008). In his recent book *Emerging Disciplines*, Patel (2008) discusses how music can activate language regions of the brain that also process words and syntax. His studies question if simply listening to music can change the brain to allow us to learn new words.

**Summary of Theoretical Frameworks**

Developmental theory, information-processing theory related to brain research, and the use of music all serve as a basis for this research regarding the potential use of singing along with song picture books to support students’ language development and vocabulary acquisition. Researchers have shared ideas with educators to better understand the learning process and to help develop teaching practices and strategies that align with current brain studies. Combining both old and new approaches to teaching and learning requires knowledge of how the brain works and how to motivate and enhance learning (Jenson, 1998).
Chapter 2: Literature Review

The questions that guided my literature review were as follows:

1. How does vocabulary develop in young children?
2. What are best practices for teaching vocabulary to young children?
3. How does music enhance student learning?
4. How does music affect the brain and the development of vocabulary?
5. How can song picture books support vocabulary development?

Vocabulary Development in Young Children

Vocabulary development is a critical aspect of preschoolers' learning experiences, given the important role that it plays in learning to read. Language, specifically vocabulary development, plays a critical role in early literacy development. However, recent findings from evaluations of numerous preschool programs designed to increase children's language and literacy skills have shown limited impacts on children's language outcomes (Wasik, 2010). These findings suggest that preschool programs may lack a critical component necessary to develop language skills in young children. Weaknesses were not found primarily in the content that was presented to young children, but rather in the lack of adequate professional development to train teachers to implement effective, research-based strategies that promote language skills in young children. It remains unclear to what extent teachers are provided with explicit guidance and training in scaffolding children's language and vocabulary development as a part of various currently popular curricula. This gap in our knowledge is profoundly important. What teachers know about vocabulary development and how they implement strategies to support vocabulary knowledge in the context of a particular curriculum has a critical impact on children’s language development.
The National Reading Panel (NRP, 2000) reported five main skill areas that are crucial for children to become literate. These elements for literacy success are phonemic awareness, phonics, comprehension, vocabulary, and fluency. In addressing the researcher’s interest of vocabulary development, knowledge and understanding of vocabulary is crucial for the ability to comprehend text according to the NRP. The panel recommended that vocabulary development be taught both directly and indirectly. The NRP reported that both oral and print vocabulary expansion was crucial to comprehension, given that larger vocabularies (both oral and print) can be correlated directly to easier comprehension of text.

The National Association for the Education of Young Children (NAEYC) describes language and communication expectations for young children as follows:

- Expands vocabulary from 4,000 to 6,000 words; shows more attention to abstract uses.
- Likes to sing simple songs; knows many rhymes and finger plays.
- Talks in front of the group with some reticence; likes to tell others about family and experiences.
- Learns new vocabulary quickly if related to own experiences (“We walk our dog on a belt. Oh yeah, it’s a leash – we walk our dog on a leash.”).

Evidence documents that children enter school with substantial disparities in the depth and breadth of their vocabulary knowledge. For many children, these disparities have a lasting effect on academic achievement (Van Kleeck, 2008). There is widespread agreement that vocabulary knowledge is important for reading achievement and comprehension, but the magnitude and direction of influence is complex.

Longitudinal studies have demonstrated both direct and indirect influences of vocabulary on reading achievement. These influences depend in part on three factors: the vocabulary
construct (studied independently or as part of a larger language construct); the outcome measure (e.g. word recognition, reading comprehension); and the interval between assessment points (Storch & Whitehurst, 2002). Studies have evaluated the early vocabulary/oral language-reading comprehension connection over extended periods of time and have provided compelling evidence that vocabulary discrepancies emerge early, relate to later reading-comprehension difficulties, and are stable in the absence of intervention (Catts, Bridges, Little, & Tomblin, 2008). At issue is how to design and deliver interventions that effectively develop young children's knowledge of vocabulary and that are important for both listening comprehension in preschool and subsequent reading comprehension. Such interventions are particularly important for preschool children whose delays in vocabulary knowledge place them at risk of later reading-comprehension difficulties.

Research has shown that there is also a relationship among vocabulary, environment, and socioeconomics. Children most at risk of early oral language and vocabulary delay come from lower-income homes in which socio-economics may disadvantage children's educational and experiential opportunities before they enter school (Farkas & Beron, 2004). A childhood lived in poverty may place a child at high risk for future academic problems. To mitigate the effects of poverty and close the vocabulary gap, interventions must begin early in preschool when the highest rate of vocabulary growth occurs and must employ evidence-based practices and intensive intervention that reduce learning gaps in language development (Farkas & Beron, 2004).

There are different curriculum programs available to teach young children literacy skills that are necessary to learn how to read. This researcher identifies vocabulary development as an essential component but one that lacks specific focus, teaching suggestions, measurable
objectives, criteria for word selection, or any type of scope and sequence. Although there is an acknowledgement that young children need to develop vocabulary skills, there is little evidence of actual teaching strategies and a proven instructional regime for teachers who want to be more effective in this area. Existing programs do not provide a deliberate attempt for frequent practice, multiple exposures to words, and systematic opportunities to use vocabulary. Many of these programs assume that children will learn vocabulary words by repeating them after the teacher or by hearing them in a story. Developmentally appropriate strategies for teaching vocabulary as well as instructional materials for enhancing young children’s vocabulary skills need improvement. In addition, teachers are often not provided professional development to teach vocabulary skills. Strategies used in meaningful contexts through semantically related activities are needed. Opportunities for children’s active participation in learning as well as concrete props are necessary to develop vocabulary skills (Neumon & Dwyer, 2009).

A well-developed curriculum is important because it provides a framework for teachers and supplies materials to support instruction. It also offers appropriate ideas for activities and structured tasks to teach young children specific concepts. However it is the quality and skill of the teacher who is implementing the curriculum that will have the most significant impact on children (Darling-Hammond & Bransford, 2005).

To foster language and vocabulary development, the nature of the teacher-child interactions and the way in which vocabulary is presented and reinforced are critical factors in children’s learning (Penno, Wilkinson & Moore, 2002). Teachers need to present and explain words and purposively use the words throughout the day in multiple and different classroom activities. Children need to hear, understand, and use vocabulary words in meaningful ways. Opportunities to scaffold children’s language are often unplanned events. Conversations that
support children's language and develop vocabulary are often part of the natural rhythm of the classroom, interwoven with children's individual interests and observations.

Research has shown that developing children’s vocabulary skills can be challenging. One of the primary problems is that teachers do not typically talk and engage young children in conversations that expand and develop their language (Dickinson, 2002). Specifically, teachers tend to spend a good deal of time giving directions and, when discussing content, often ask children questions that require only one or two words in response, while also providing just one or two words in response to children's questions and ideas (Zucker, Justice, Piasta & Kaderavek, 2010).

Changing how teachers talk with children can be difficult (Bond & Wasik, 2009). For example, in their efforts to manage many children at once, teachers must engage in a considerable amount of "business talk" in classrooms, telling children what to do and what not to do (Dickinson & Caswell, 2007). Sometimes, these managerial conversations decrease opportunities for more meaningful discussion about content. Also, teachers might not be comfortable with children talking. A quiet classroom is often equated with a well-managed, organized, "good" classroom. The result is that children have limited opportunities to learn and use language in meaningful ways.

To facilitate vocabulary development, teachers need to examine the way they interact with young children. Teachers need to recognize how children's language develops and how necessary meaningful language interaction is for children's learning. Language is supported through an adult and child talking with one another. Children who are asked open-ended questions, encouraged to expand on their language, and provided with feedback to their comments and questions have more opportunities to talk and use language and are therefore
more likely to develop language. Children learn language, and particularly vocabulary, by being exposed to language in meaningful contexts and by having to use language in purposeful and functional ways (Adger, Hoyle, & Dickinson, 2004).

**Best Practices for Teaching Vocabulary to Young Children**

Biemiller (2006) emphasizes the strong link between vocabulary development and later literacy development. The ability to read-for-meaning requires knowledge of word meanings. Such knowledge is gained through word usage. It follows that early oral language, which includes extensive practice and play with word sounds and meanings, contributes to later literacy.

Best practices in developing vocabulary in young children include accessing prior knowledge, building upon ideas that are familiar, and creating new experiences for understanding. Lessons in which children are participating and actively involved help to reinforce what is being taught. Students singing and acting out targeted unknown vocabulary words become engaged in their learning and can remember definitions and word meanings. Students also have ample opportunities to learn new vocabulary if targeted words are used in a game, such as Bingo, in which a marker is placed on a word or picture when it is heard in a story or song. Real objects, illustrations, actions and movements, in addition to music, are all helpful in activating memory in the process of learning new words. Repeating the song and activity a few times supports the word meaning and adds to understanding (Medina, 2002).

As emergent readers hear, sing, discuss, play with, and write songs, they are building important background knowledge that they will draw upon during later reading and writing experiences. With each new song, students learn concepts and word meanings that they will encounter in print (Gilles, Andre, Dye & Pfannenstiel, 1998). For example, while learning the
popular song *Grandma's Featherbed*, students learned words, concepts, and idioms including “tick”, “ballad”, “bolt of cloth”, “soft as a downy chick”, and “cobwebs filled my head”. Similarly, while laughing and singing *Clementine*, students learned words and concepts including “cavern”, “canyon”, “excavating”, “forty-niner”, and “mine”.

In 1998 the International Reading Association and the National Association for the Education of Young Children released a joint position statement outlining principles and practices of appropriate education for young children, which pointed out that "high-quality book reading occurs when children feel emotionally secure and are active participants in reading.” Anyone who has appreciated the faces of children in song can testify that music provides emotional security and active participation. Singing activities can bring many additional opportunities for students to respond and participate during classroom literacy instruction.

Another practice that teachers currently use to build vocabulary and comprehension includes the following steps:

- Writing words from a story on chart paper with accompanying pictures.
- Discussing what the words mean and connecting the words to experiences the children already know to develop understanding.
- Demonstrating and encouraging kinesthetic activity to envision the words (e.g. swimming like sea turtles).
- Talking with one another and sharing ideas (Kessler, 2010).

During class meetings and language instruction, teachers can point to the words on the chart and ask who has heard or used any of the words in their interactions. Focusing on certain words and using them in conversations repeatedly can increase young children’s vocabulary.

Tactile and kinesthetic activity provides other modes besides language for expressing
understanding and are valuable learning methods.

How teachers initially present and explain words, purposively use the words throughout the day through an entire theme or unit, and intentionally weave these words into multiple different events and activities for children have determining influences on how children hear, understand, and use these words. These methods of teaching words ultimately shape how well young children internalize and recall the content of a lesson. A curriculum without a well-trained teacher cannot support the skillful weaving of these language experiences throughout the day, over the course of a particular theme or unit, and across the school year as a whole (Smith, 2000).

Research also suggests that a successful way to develop young children’s vocabulary is to engage them in conversations emphasizing the use of certain words and using open-ended questions. Findings suggest that small amounts of linguistically and cognitively complex conversation with a trained adult can be a useful strategy for improving the vocabularies of children with low language skills (Ruston, H.P. & Schwanenflugel, P.J. 2010). McKeown and Beck (2006) explained that young children, especially those from non-dominant groups, need explicit support with comprehending the de-contextualized language in books, which they contended “is a major source of learning and thus is at the center of academic achievement.” To do this, teachers need to support expansive, thoughtful responses, “aiming to get children to explain, elaborate, and connect their ideas” (p. 293) and produce language. With respect to fostering language and vocabulary development, the nature of the teacher-child interactions and the way in which vocabulary is presented and reinforced are critical factors in children's learning (Penno, Wilkinson & Moore, 2002).
Vocabulary can be developed by the use of conversations by the adults in a child’s life. Teacher-child conversation differs in character from talk that accompanies other classroom activities such as interactive book reading (Giralometto, 2003). Scheduling regular linguistically complex conversations is a tool that teachers might use to enhance the vocabularies of young children. It is well established that language input from both parents and teachers is correlated with child language development (Huttenlocher et al., 2002). There is a strong positive correlation between the total number of words, the use of rare words, and the increased complexity of phrasing that adults use and the resultant quality of their children's language (Weizman & Snow, 2001).

Storytelling is an effective bridge to emergent literacy (Miller and Mehler, 1994) and another way that teachers can increase vocabulary development. Since we know that children are active participants in the acquisition of language, the interactive nature of show and tell or sharing time in the early grades serves as a recreation of a remembered experience (Miller and Mehler, 1994). These tales are personal stories created by the children as a result of direct experience. The language patterns learned in these social contexts while children are interacting with adults and other children are constructed and reinforced as the teller becomes more proficient in relating the story (Strickland & Morrow, 1989). Reading stories aloud or listening and interacting with a storyteller is essentially a social experience (Britsch, 1992). Studies continue to confirm that the development of vocabulary and syntactic complexity in oral language are more advanced in children who are frequently exposed to a variety of stories (Silverman, R. & DiBara-Crandell, J., 2010).

Effective vocabulary programs also include teacher professional development that trains teachers to scaffold children's language through meaningful interactions with adults.
Specifically, training teachers to talk with children and promote language development can lead to increases in children's opportunities to talk, use descriptive language, and learn new words (Dickinson & Tabors, 2001). Without this training, it is likely that implementation of even the highest quality curricula will vary across early childhood teachers, undermining efforts to build children's language skills at the very time when interventions could have the strongest long-term effects.

Book reading provides opportunities to explain the vocabulary words in the context of a meaningful story. Teacher training to expand vocabulary provides the following techniques when reading a book:

- Introduce three or four new words identified as important to comprehending the story.
- Describe words using simple, developmentally appropriate explanations for the vocabulary found in children’s dictionaries.
- Relate the vocabulary to children’s experiences; scaffold the word knowledge from what is familiar to the children to learning the new, unfamiliar words.
- Read the book at least three times to provide multiple exposures to the vocabulary.
- Reinforce the words by the pictures in the book or by the use of props to represent the vocabulary words.
- Allow children to play with the props during center time or free play.

Beyond book reading, teachers can use the vocabulary words in other activities throughout the day and in everyday conversations with children. Posting the vocabulary words with a picture in the classroom helps remind the teacher which words to focus on when speaking and teaching other lessons. It also reminds the children of the new vocabulary words that are being presented. In doing this, the teacher provides multiple opportunities for children to use
theme-related vocabulary in a meaningful context (Wasik & Bond, 2001). Teachers need to be explicit with their use of words, avoid use of words such as it or that, and use words instead of pointing at objects. Omitting the specific referent for the word does not allow children to hear the word in context, which would help children learn the word and its meaning. Being explicit with word choices helps support vocabulary development in young children (Wasik & Bond, 2001).

Giving children meaningful opportunities to share their ideas and experiences orally with others is one way that vocabulary is taught now to young children. By listening to their own talk, as well as to the talk of others, children can develop their understanding of themselves and their world. Mercer wrote, “Individually and collectively, we use language to transform experience into knowledge and understanding” (1995). Teachers need to be critically aware of how they use language in the classroom and how they encourage (or discourage) children to use language. Children need to be guided in their construction of knowledge.

**Use of Music to Enhance Student Learning**

Researchers have long suggested a connection between music and language development (Lamb & Gregory, 1993). The National Association for the Education of Young Children (NAEYC) and the International Reading Association (IRA) both present literacy and music standards that are encouraged to be used as developmentally appropriate practices in early childhood programs. A standards-based approach that integrates music and literacy activities optimizes growth and development in young learners. Strongly recommended are experiences that develop vocabulary through participation in singing stories that are rich in phonemic patterns such as rhyme and alliteration. Combining books with music-integrated literacy experiences enhances young children’s exposure to language (Wiggins, 2007).
Literacy is naturally developed through music. Beginning with Jean Piaget in the 1920s, researchers have demonstrated that young children learn best through play in an emotionally risk-free environment. Within a safe, inviting environment with opportunities for play, children learn when they engage in playful musical activities. Rhythm and rhyme increase learning, and singing frequently provides an emotional hook that can engage students in learning routine facts. By adding rhythm, music, and movement to a learning experience, messages are sent to the brain through various pathways and create a richer learning experience.

To create a stimulating environment for learning, the classroom can be decorated with attractive and eye-catching posters, student work, and learning centers. Ways that teachers can increase vocabulary development include: using picture books and song books, placing new words on a designated word wall with an illustration, introducing a word of the week, posting words from classroom stories and songs on charts, and setting up a listening center for children to hear a story again after reading the book in both large and small groups. Children will be developing literacy skills without even realizing it as they sing and move around having fun in a relaxed, stimulating environment.

Music can transform classrooms into pleasant and positive learning environments in which children thrive emotionally, socially, and academically. Exciting musical opportunities and meaningful learning experiences can be implemented to address the needs of diverse learners. Providing children with structured and open-ended musical activities, creating an atmosphere of mutual trust and respect, and sharing the joy of creativity with each other are foundational bases for the growth and development of the early childhood learner (Parquette & Reig, 2008). Music-enhanced early literacy experiences celebrate and support diversity, are representative of varied and creative instructional approaches, and inherently promote critical
Music can be naturally integrated throughout all curricular areas to develop and to extend vocabulary and comprehension skills. Music can also improve listening and oral language skill development, improve attention and memory, and enhance abstract thinking (Hill-Clarke & Robinson, 2003).

Integrating music into children’s everyday activities promotes literacy development. Music is a way for children to experience rich language in a pleasing way (Woodall & Ziembroski, n.d). In an early childhood classroom, a music- and literacy-rich environment will generate interest, encourage creativity, enable children to take an active part in the educational process, and set the stage for a positive learning environment. In the kindergarten setting, music’s engaging nature encourages children to attend during reading activities, invites them to be active listeners, and promotes comprehension and dialogue. Important skills such as reading, writing, listening, and speaking are developed.

Music is an area where children who face language obstacles can be successful in acquiring vocabulary and grammar (Medina, 2002). Music has been found to be advantageous to learners, since singing songs and listening to music is an enjoyable experience for them. Students are relaxed and feel comfortable and are receptive to learning, often singing the song over and over again. This repetition promotes self-confidence and develops vocabulary skills.

Vocabulary can be acquired incidentally in contexts of daily conversation due to cognitive processes such as verbal memory (Beals, 1997). If those who received musical instruction at an early age have greater verbal memory (Chan, Ho & Cheung, 1998; Ho, Cheung...
& Chan, 2003), it could be expected that they would also have a greater vocabulary.

One element of children's linguistic development that has been favored by participation in musical activities is that of vocabulary. Studies of third-graders showed that those who attended music classes at school performed better on the WISC vocabulary scale than those children who did not attend such classes (Galicia, 1997; Galicia & Pavon, 2001). Children with developmental delays who participated in singing songs improved their vocabulary significantly, as measured by the Peabody Vocabulary Test (Hoskins, 1988). Also, young children who received vocabulary instruction in a second language, along with songs and rhythmic discrimination activities, incorporated more words into their receptive and active vocabularies (Gan & Chong, 1998; Schunk, 1999; Overy, 2000).

A sense of narrative or discourse (Gee, 1996) is integral to music. Just as words construct verbal narratives, so can music construct musical narratives using pitch, timbre, and rhythm to convey a story. Like discourse, narrative construction is both a primal way of making meaning and sense of the world and a basis for literacy learning (Bruner, 1986; Nelson, 1996; Wells, 1999).

Music, Brain Research, and Vocabulary Development

The human brain is the most complex system on earth, yet too often it is used in schools primarily as a simple device for storage and retrieval of information (Dickinson, 2002). According to research posited by neuroscientist Marian Diamond (2003) at Berkeley, the human brain can change structurally and functionally as a result of learning and experiencing, both in positive and negative ways. As the brain is challenged with learning opportunities, it generates new neural connections and pathways, which make it possible to assimilate information in order to make meaningful choices. This creative power of the brain is released when human beings are
in environments that are positive, nurturing, and stimulating and that encourage action and interaction. Many schools are at the other extreme of the dull, boring, and rigid learning milieus in which students are the passive recipients of information. Fortunately, well-designed arts programs provide just the kind of environment that Diamond described.

According to Franklin, Fernandez, Mosby, and Fernando (2004), participation in the arts positively influences brain performance. For instance, music, painting, dance, and drama have been cited as essential to academic and emotional development. They help to reduce stress, improve learning outcomes, enhance intrinsic motivation, regulate brain chemistry, augment body memory, and literally rewire neural pathways.

Research indicates that to maximize learning, the left and right hemispheres must work harmoniously. Thus, attention to whole brain learning is the current guiding vision among many educators. Whole brain instruction is geared to pedagogical practices that amplify and unite the knowledge about left and right brain characteristics. One of the long held means of achieving whole brain instruction in schools has been the fine arts (Walker, 1995).

The Use of Song Picture Books to Support Vocabulary Development

Song picture books support emergent literacy by building on familiarity and enjoyment, providing repetition, expanding vocabulary, teaching story structures, promoting critical thinking, and fostering creative expression (Jalongo & Ribblett, 1997). Song picture books can be especially useful because they demonstrate the link between the kinesthetic, pictorial representations of the concepts of the songs and print (Isenberg & Jalongo 2009, in press). Many published articles have promoted music as a way to enhance reading comprehension by having children read print while singing (Miller & Coen 1994; Smith, 2000).
Stephen Krashen (1989) is best known for his work on two hypotheses, the “Input” and “Affective Filter” hypotheses. According to Krashen’s “Input Hypothesis,” new, unfamiliar vocabulary is acquired when its significance is made clear to the learner. Meaning is conveyed by providing extra-linguistic support through the use of illustrations, actions, photos, and real objects. Vocabulary is incidentally acquired through stories because of the following:

- Familiar vocabulary and syntax contained in the stories provide meaning to less familiar vocabulary.
- Picture illustrations clarify the meaning of unfamiliar words.

There is evidence that picture illustrations succeed at supporting the reading process by clarifying the meaning of incoming verbal information. In short, meaning is critical to the acquisition of vocabulary.

Music use in the classroom is consistent with both of Krashen’s hypotheses. When language learners hear “story songs”, that is, stories that have been set to song, it is possible to acquire vocabulary. As in the case of orally read stories, “story songs” that are presented with picture illustrations, photos, or gestures provide the necessary extra-linguistic support to result in language acquisition. Furthermore, because of the positive effects music has upon young children, “story songs” might motivate and captivate their attention in ways that oral stories cannot.

Krashen’s second hypothesis, the “Affective Filter Hypothesis,” is also tied to music use in the classroom. According to this hypothesis, the extent to which linguistic input is received from the environment depends largely upon the learner’s “affect,” or his inner feelings and attitude. Negative emotions, functioning much like a filter, can prevent the learner from making total use of the linguistic input from his environment. If a child is anxious, unmotivated, or
simply lacks confidence, language acquisition will be limited. It is in the interest of the teacher to provide an environment that evokes positive emotions. Music does precisely that. Whether learners simply listen to instrumental music, listen to vocals in the target language, or sing in unison, it is a pleasurable experience. Furthermore, as reported in the literature, singing songs in unison produces a sense of community and increases student confidence in learning language. Thus music, when it is used in the classroom, evokes positive emotions that can lower the “affective filter” and bring about language acquisition.

In 2006, a study was done on preschool children’s vocabulary development after a musical program was implemented with some of the children. The results showed significant increases in receptive vocabulary only for the group exposed to the program with musical activities (Moyeda, Gomez & Flores, 2006). The educators involved with the study offered evidence that the use of music in literacy classes develops students’ potential in many areas, especially auditory discrimination, psychomotor coordination, memory development, expressive abilities, and critical thinking. Their study denotes the positive influence of musical activities on different areas of child development, especially those related to language. The songs of preschool children, in particular, are considered as providing children with fluency of oral expression and good diction, as well as helping them learn to form phrases, use words correctly, understand the meaning of words, and even to enjoy the poetic quality of children's rhymes (Aquino, 1991).

**Literature Review Conclusion**

The literature review demonstrates that widespread agreement exists that vocabulary knowledge is important for reading achievement and comprehension. Research suggests that integrating music into children’s everyday activities promotes literacy development. To
facilitate language and vocabulary development, it is critical that teachers examine the ways they interact with young children and use language in the classroom in purposeful and functional ways.

The literature suggests that developmentally appropriate approaches for teaching vocabulary as well as instructional materials for enhancing young children’s vocabulary skills need improvement. Strategies used in meaningful contexts through semantically related activities are needed. Opportunities for children’s active participation in learning are necessary to develop vocabulary skills.

With this in mind, my research study used song picture books to help young children acquire vocabulary, using best practice strategies to engage students in meaningful ways and adding information to ways in which young children can learn new words.

**Chapter 3: Research Design**

This study was designed to assess whether students’ acquisition of vocabulary is enhanced with students’ singing along to a song picture book. Students’ vocabulary was assessed prior to and after classroom vocabulary instruction with the use of students’ singing along to a song picture book and without singing along to a song picture book. Analysis of student gains in vocabulary with and without students’ singing along to the song picture book determined whether singing along with a song picture book significantly enhanced students’ acquisition of vocabulary.

In addition to this quantitative analysis, observations of the vocabulary instruction with and without the use of singing along were used to identify any differences in student engagement, as decided through a pre-determined observation protocol (See Appendix H).

All participating students were interviewed after the use of the song picture books with
and without singing along to ascertain whether they believed singing along benefited their learning. Students were also asked two additional questions: 1) which book they liked best and why and 2) which they liked to do better when learning new words, listen or sing along (See Appendix G).

**Research Questions**

The following three questions were informed by the theoretical framework and were guided by the literature review research:

1. To what extent does kindergarten children’s singing along with a song picture book increase their vocabulary acquisition?

2. To what extent does singing along to a song picture book with a focus on vocabulary acquisition increase student engagement?

3. To what extent did young children, as self-reported, believe that singing along to a song picture book helped them to learn the ten targeted vocabulary words of a lesson?

The developmental theory, information process theory, and recent research about the brain and how music affects the brain in the development of vocabulary informed my research questions. The theories emphasize learning, memory, and language. Music is integrally related to all of these brain processes. Readings suggest that music may serve as a significant modality that supports children’s vocabulary acquisition as well as developing other important social and academic learning skills.

**Hypotheses**

The following were the researcher’s beliefs based upon investigation of the problem of practice and literature review:

**Hypothesis A.** Students who are introduced to vocabulary words with a song picture
book through the use of singing along will acquire more vocabulary words than students introduced to vocabulary words in a song picture book without the use of singing along.

Hypothesis B. Classroom teachers will observe more engagement among students when learning new vocabulary words in a song picture book when singing along is included as part of the lesson than without singing along. Teachers will notice that children are attending to the story, answering questions asked about the targeted words, and actively participating in the story by singing the words to the song, moving to the music, and/or acting out the words to the vocabulary lesson when singing along is used as a learning modality.

Hypothesis C. When asked, students will answer that they enjoyed having both stories read to them, but that they liked singing along to the stories and moving as a way of learning vocabulary words more than without the use of singing along.

Methodology

This practice-based research employed both quantitative and qualitative data and analyses. This mixed method research approach was chosen in order to determine whether the way that vocabulary words are presented to students makes a difference in their learning.

This study identified whether students’ musical engagement with a song picture book in the context of learning new vocabulary words enhanced students’ learning of those words. The research also identified how students engage with a story when singing along is present. In addition, students shared how they felt they learned vocabulary words best, either by listening when a song picture book was read to them or by singing along to the words in the book.

Site and participants. An early childhood education center in the northeastern portion of the United States was the site of this research study. About 350 children attend the center,
both pre-school children and kindergarten children, ages three to seven years old. The center is the public school for the town in which it is located.

Four kindergarten classrooms in which the researcher teaches were chosen for the study. They were classrooms where the teachers had not read the books from which the researcher had chosen to collect data, *Down by the Station* by Will Hillenbrand and *Down by the Bay* by Raffi. Eighty-six kindergarten students were eligible for the study. The students were five, six, and seven years old. They were either male or female and represented typically developing young children as well as those who receive support services through an Individualized Educational Program (IEP). They were chosen because they are enrolled in the inclusion classes in which the researcher teaches. Seventy-one of the eighty-six kindergarten students returned permission slips and remained eligible to be part of this research study. In each of the four classrooms where the study took place, there were twenty-one or twenty-two children. Three or four of the children in each class had been identified for special needs with language development delays. In each of the classrooms there were also two or three children who spoke English as a second language. Children represented mostly White, Hispanic, or Black Americans, from lower middle class to upper middle class economic levels.

Classrooms in Group A and Group B were very similar for the numbers of children who had been identified with special needs. However, permission to be part of the research study was not provided by a number of the families of students with special needs in Group B.

The specific break down of each group that were given permission to be in the study is as follows:

Group A, Class 1 and Class 2: Thirty-seven children in Group A were part of the research study; eighteen children in Class 1 and nineteen children in Class 2. Both classrooms were
inclusion classrooms with twenty-eight typically developing children and nine children identified as having special needs as follows:

- Four children were on educational plans for developmental delays with language skills. One of those four children also spoke English as a Second Language.
- Three children spoke English as a Second Language.
- Two of the children were in a substantially separate kindergarten for special needs, but joined Class 2 for literacy lessons.

Group B, Class 3 and Class 4: Thirty-four children in Group B were part of the research study; fifteen children in Class 3 and nineteen children in Class 4. Both classrooms were inclusion classrooms with thirty-one typically developing children and three children identified as having special needs as follows:

- Two children were on educational plans for developmental delays with language skills.
- One child spoke English as a Second Language.

Each of the four classrooms in which the study took place has a teacher and an aide working with the children. Two of the teachers in the classrooms have Masters degrees in special education, one has a Masters degree in creative arts and another has a Masters degree in reading instruction. The teaching aides in the classrooms are paraprofessionals with college degrees.

The teachers all share the school philosophy, which strives to provide children with opportunities to learn, explore, discover, create, interact, communicate, and grow in a safe and nurturing environment. The kindergarten curriculum is aligned with the Massachusetts State Frameworks and is age-appropriate. The teachers in the classrooms that were chosen all tend to recognize and respect the uniqueness and importance of each child, their developmental needs,
cultural and family background, and learning style. Through this attitude of respect, the teachers hope to foster each child’s feelings of self-worth and to encourage all children’s respect for differences they will find in the world.

The researcher’s role at the early childhood education center is one of a kindergarten special needs teacher. The researcher’s undergraduate degree is in human development and her Masters degree is in special education and early childhood education. The researcher teaches in the four inclusion classrooms chosen to be part of the study, four times a week for thirty minutes a day. The researcher plans activities with each of the four classroom teachers in the study to benefit all students and makes special accommodations for students with special needs on instructional educational programs (IEPs). Being one of the teachers of the participating students enabled the researcher to present the vocabulary lessons with each of the four classrooms during the half hour of time that she normally teaches them. Literacy lessons and supporting activities are what the researcher typically teaches children when she is with them in their classrooms. Students often participate in creative movement activities or sing songs and engage in fingerplays as part of literacy lessons. The researcher was interested to learn if singing along when stories are being read would benefit young children in acquiring new vocabulary.

Permissions and agreements secured. Written permission from the Superintendent of Schools and the principal of the researcher’s school to conduct the study was requested and granted (Appendices A and B). A letter to obtain consent for participation in the study was sent by the principal of the early childhood education center to the participants’ parents/guardians along with an IRB-approved parent/student permission form (Appendix C). Agreements with the four classroom teachers who were willing to participate in this experiment were verbally obtained. Verbal permission was also asked of the students who participated before they were
asked the twenty targeted words from the two song picture books (Appendix D). Students’ permission was also asked after both lessons had been completed and before the student interview where they shared their ideas about their participation and learning.

**Treatment and data collection activities.** Two song picture books were used with students with ten targeted words to be taught in each book. Ten words were chosen to introduce to students as a number that would not be too overwhelming for them to learn at one time. Both books have animals in them and bright, colorful illustrations, which are of interest to young children. Both books can be read or sung and have a similar number of pages.

The song picture books and ten targeted words in each book are as follows:

1. *Down by the Station* by Will Hillenbrand

   Set 1: Ten targeted words: station, lever, calf, flamingos, chick, cub, tigers, seals, kangaroos, and joey.

2. *Down by the Bay* by Raffi

   Set 2: Ten targeted words: bay, watermelon, goose, moose, whale, polka dot tail, fly, tie, comb, and llamas.

*Down by the Station* by Will Hillenbrand is a song picture book adapted from a traditional children’s song. It’s a happy story about baby animals shown with their parents who are picked up by a train early in the morning and delivered to a children’s zoo. The animals wave good-bye to their parents and the train chugs along, picking up different baby animal passengers along the way. A school bus arrives at the zoo around the same time as the train with the baby animals. Young children, representing diverse ethnic backgrounds, bound off the bus for a day of play with the baby animals. The story has a repetitive pattern in the words that tell the story. The illustrations are bright and colorful. A red balloon is seen on each page and
guides the train along through each animal’s habitat until the children’s zoo is reached. There is one scene of danger when part of the train becomes detached and some of the animals fall into the crocodile pool. There is a clever rescue and the train continues on to its destination.

*Down by the Bay* by Raffi is a song picture book by a popular children’s singer. It is a silly story that uses animals and objects to introduce rhyming words to young children. The humor and repeating refrain, which is part of the story, appeals to children and holds their interest. It also has detailed illustrations depicting different animals involved with impossible situations, such as llamas eating their pajamas and a goose kissing a moose. The chorus mentions not daring to go home to hear funny things that the narrator’s mother will say, which are the ridiculous rhymes of the song. Both song picture books follow a repetitive pattern in the story text and have a refrain that is repeated, making it easy for young children to learn the words quickly and sing along.

Before the research study began with the four chosen classrooms, a preliminary assessment of the twenty targeted words was done with ten students in a different kindergarten classroom that was not part of the study. The purpose of this activity was to determine if a fair number of the targeted words were ones that kindergarten children typically do not know yet.

There were at least five words in each story that were unknown to the kindergarten students who were asked. Therefore, the research study was able to continue as planned. If the ten students had been able to name most of the ten targeted words, then the researcher would have needed to identify different song picture books that contained vocabulary words that students could not name.

**Step 1.** Students in the study were assessed on the ten targeted vocabulary words in Set 1 and the ten targeted vocabulary words in Set 2 before hearing the stories *Down by the Station*
and Down by the Bay. For the pretest, the researcher worked with each student individually to collect the data. The actual pictures from the books were shown one at a time to each student in order of their appearance in the book. Students were asked to name each of the ten pictures from Down by the Station and each of the ten pictures from Down by the Bay. The question asked for each word was, “What is this?” as the picture in the book was pointed to. Each student’s responses were recorded on their own individual recording sheet; one for each story (See Appendices E and F). The assessment process followed testing procedure from standardized vocabulary tests that have been given to young children by the researcher.

Step 2. Kindergarten students were divided into Group A, two kindergarten classrooms, and Group B, two different kindergarten classrooms. The researcher determined which two classrooms comprised Group A and which two classrooms comprised Group B. The goal was to have as close an equal number of students in each group as possible and equivalent size classrooms in each group.

Group A students were told by the researcher, “Today we’re going to sing a story and learn some new words. Let’s look at the words first and then I’ll sing the story.” The researcher showed the students pictures of the ten targeted words (Set 1) one by one. The students were asked to say the words after her. The ten targeted words were hung on a portable bulletin board where the students could see them as the story was sung. Each of the ten targeted word pictures was mounted on its own piece of cardboard and laminated. They were the same pictures that students were shown for the pretest from the song picture book, Down by the Station. Next, Group A students listened to the song picture book Down by the Station being sung. The researcher read the title of the book, the author, and the introduction on the front flap of the book: “Did you ever wonder, who rides the train, early in the morning, before the zoo opens?”
Shhh! It’s a big secret. Come on down to the train station, climb aboard, and find out!” The researcher said, “Listen first and then we’ll talk about the new words.” The story was sung from the beginning to the end and targeted words were pointed to as the story was sung. Then the researcher said, “Let’s look at some of the words in the story and talk about what they mean.” The ten targeted words (Set 1) were shown with the corresponding picture, one by one, just as they appeared in the story. In order to acquire the new vocabulary, students were asked to repeat the targeted words again. The researcher asked the group, “What is a __________?” for each targeted word while showing students the picture. Students were invited to answer the questions. After students who chose to participate answered, the researcher said, “Now that we have talked about the new words, let’s sing the story again.” The story was sung a second time with the students. The students chose whether to join in the singing of the song picture book and/or perform actions for the targeted words.

Group B students were told by the researcher, “Today we’re going to read a story and learn some new words. Let’s look at the words first and then I’ll read the story.” The researcher showed the students a picture of the ten new words (Set 1) one by one. They were the same pictures that they were shown for the pretest from the song picture book. The students were asked to say the words after the researcher. The ten targeted words were hung on the portable bulletin board where the students could see them as the story was read. Group B students heard the same introduction read to them as the students in Group A, but they listened to the song picture book Down by the Station being read. The researcher said, “Listen to the story being read and then we’ll talk about the new words.” The researcher pointed to the picture illustrations of the targeted vocabulary words in Set 1 as the story was being read from beginning to end. Then the researcher said, “Let’s look at some of the words in the story and talk about
what they mean.” The ten targeted words (Set 1) were shown with the corresponding pictures, one by one, just as they appeared in the story. Students were asked to repeat the targeted words again. The researcher asked the group, “What is a ________?” for each targeted word while showing students the pictures. Students were invited to answer the questions. The researcher said, “Now that we have talked about the new words, let’s read the story again.” Children were invited to listen to the song picture book a second time. Students chose whether to attend to the song picture book being read and/or perform actions for the targeted words.

**Step 3.** The lessons were repeated in exactly the same way with each group the next day. Group A students were told by the researcher, “Let’s look again at the new words that we learned yesterday.” The students were shown the new words one by one and asked to repeat them after the researcher. They were hung again in the classroom where the students could see them as the story was being sung. The researcher said, “Let’s sing the story Down by the Station again.” The story was sung, and the researcher pointed to the ten targeted vocabulary words as they appeared in the book. At the end of the story, the researcher said, “Let’s talk again together about the meaning of the new words that we learned yesterday.” The ten targeted vocabulary words in Set 1 were repeated one by one. The researcher asked the group, “What is a ________?” for each targeted word while showing students the pictures. Students were invited to answer the question for each targeted word. The story was sung one more time. Students chose whether to join in singing and/or use actions to go with the words that were being sung. Group B students were told by the researcher, “Let’s look again at the new words that we learned yesterday.” The students looked at the pictures on the portable bulletin board and repeated them after the researcher. The researcher said, “Let’s read the story that we heard yesterday, Down by the Station.” The story was read, and the researcher pointed to each of the
ten targeted words as they appeared in the book. The ten targeted vocabulary words in Set 1 were read one by one by the teacher and repeated by the students. The researcher asked the group, “What is a __________?” for each targeted word while showing students the picture, and students were invited to answer the questions. The story was read one more time. Students chose whether to attend to the reading of the story and/or use actions to go with the words that were being read.

**Step 4.** All students in Group A and Group B were given a posttest the day after the second lesson was presented with the same vocabulary words (Set 1) that were in the pretest. The answers students gave after having participated in the vocabulary lessons were recorded on their same individual recording sheet (Appendix E).

**Step 5.** Next, both groups of students (Group A and Group B) participated in the same sequence of vocabulary lesson activities with the song picture book *Down by the Bay* by Raffi and the new set of ten targeted words (Set 2). Students were shown the book and had the title and author read to them. This time, Group A and Group B’s learning method was reversed. Group A had the song picture book *Down by the Bay* read to them while Group B had the song picture book *Down by the Bay* sung with them. The following procedure was followed two days in a row with each group.

**Group A.** Students were taught the lesson related to the ten targeted vocabulary words (Set 2) by having the song picture book read to them. The researcher said, “Today we’re going to hear a story and learn some new words. First, let’s look at the new words and then, I’ll read the story.” Students were shown the picture cards on the portable bulletin board with each of the ten targeted words from *Down by the Bay* and asked to repeat them. The ten targeted words were hung where the students could see them as the story was read. Then the researcher said, “Listen
to the story and then we’ll talk about the new words.” The researcher pointed to the picture illustrations of the targeted vocabulary words in Set 2 as *Down by the Bay* was being read. The ten targeted words (Set 2) were introduced with the corresponding pictures, one by one, as they appeared in the story. Students were asked to repeat the targeted words. The researcher asked the group, “What is a __________?” for each targeted word while showing students the picture, and students were invited to answer the question. Children were then asked to listen to the story again as it was read. Students chose whether to attend and/or participate with movements and actions.

**Group B.** Students were taught the lesson related to the targeted vocabulary words (Set 2) by having the song picture book sung with them. The researcher said, “Today we’re going to sing a story and learn some new words. First, let’s look at the new words and then we’ll sing the story.” Students were shown picture cards with each of the ten targeted words from *Down by the Bay* and asked to repeat them. They were hung again in the classroom where the students could see them as the story was being sung. Then the researcher said, “Listen first and then we’ll talk about the new words.” The story *Down by the Bay* was sung from the beginning to the end, and targeted words were pointed to as the story was sung. Then the researcher said, “Let’s look at some of the words in the story and talk about what they mean.” The ten targeted words (Set 2) were introduced with the corresponding picture, one by one, just as they appeared in the story. In order to acquire the new vocabulary, students were asked to repeat the targeted words. The researcher asked the group, “What is a __________?” for each targeted word while showing students the pictures and students were invited to answer the questions. Then the story was sung again. Students chose whether to sing along and/or participate with movements and actions.

**Step 6.** A posttest was given to each child after the second song picture book was either
sung along with or read to them two days in a row. Students were presented with the same vocabulary words (Set 2) that they were asked to identify in the pretest. Their answers were recorded on the same recording sheet. At this time, the students were also asked various questions about the vocabulary lessons and to assess how they felt they learned the new words best, whether through the use of song or without song. Their ideas were recorded on a separate recording sheet (Appendix G).

**Timeline.** This experimental study began at the end of May and was finished during the second week in June. The researcher did pretesting for the targeted vocabulary words with the seventy-one participating students from four classrooms. Each song picture book vocabulary lesson was taught within a two-day time period following the pretest. Both song picture lessons took place within one week. Students in Group A and Group B were assessed on targeted words acquired the day after the lessons were completed. The activities for each group were as follows:

1. **Group A**
   - **Day 1**) *Down by the Station* was sung twice to teach the ten targeted vocabulary words (Set 1). Time: 30 minutes
   - **Day 2**) *Down by the Station* was sung twice again to review the ten targeted vocabulary words (Set 1). Time: 30 minutes

2. **Group B**
   - **Day 1**) *Down by the Station* was read twice to teach the ten targeted vocabulary words (Set 1). Time: 30 minutes
   - **Day 2**) *Down by the Station* was read twice again to review the ten targeted vocabulary words (Set 1). Time: 30 minutes
3. Group A

- **Day 1**) *Down by the Bay was read* twice to teach the ten targeted vocabulary words (Set 2). Time: 30 minutes

- **Day 2**) *Down by the Bay was read* twice again to review the ten targeted vocabulary words (Set 2). Time: 30 minutes

4. Group B

- **Day 1**) *Down by the Bay was sung* twice to teach the ten targeted vocabulary words (Set 2). Time: 30 minutes

- **Day 2**) *Down by the Bay was sung* twice again to review the ten targeted vocabulary words (Set 2). Time: 30 minutes

**Data Analysis**

Both quantitative and qualitative data were collected for analysis to assess the benefits of learning vocabulary by singing along to song picture books. The intent of this mixed method study was to determine how many students learned vocabulary words from having the song picture book read to them compared with how many students learned the vocabulary words from singing along with the song picture book.

**Quantitative analysis.** For the quantitative part of the study, the difference in students’ vocabulary acquisition using song and not using song across books was compared. A one-way Analysis of Variance (ANCOVA) test was used. The one-way ANCOVA determined whether there was a difference in vocabulary words gained with and without the use of song, independent of the book used with song. The dependent variable was the difference in pre-post vocabulary gains between using song and not using song in the vocabulary lessons across two different song picture books. The two independent variables were Book (Book 1 or Book 2) and Use of Song
(With Song and Without Song). Treatment and data collected across Groups A and B are both provided in Table 1.

Table 1. 

*Treatments and Quantitative Data Collected Across Groups*

<table>
<thead>
<tr>
<th>Group A</th>
<th>Group B</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Book 1 Vocabulary Words (Set 1)</strong></td>
<td><strong>Without Song Pre-Post Differences</strong></td>
</tr>
<tr>
<td><strong>Book 2 Vocabulary Words (Set 2)</strong></td>
<td><strong>With Song Pre-Post Differences</strong></td>
</tr>
</tbody>
</table>

Qualitative analysis: teacher observations. During the course of each vocabulary lesson by the researcher (with and without song), the classroom teacher recorded observations of her students and their level of engagement using a researcher-provided observation protocol (See Appendix H). On the observation sheet, the names of the children in the class were on the left side of the paper. Next to each name was a box for the teacher to check if the child was singing along when the song picture book was sung or attending when the story was read. There was a column for the teacher to record how the child was responding when the story was either being sung with or read to the students. In addition, on a second sheet, the classroom teacher recorded students’ comments about the vocabulary words and which students shared their ideas (Appendix I).

Since the classroom teacher knows her children well, she was able to record the information as to who was engaged in listening to the story and responding to the questions and who was singing the vocabulary words and showing active engagement. Observations can enable one to draw inferences, view aspects of the participants’ perspectives, and provide an
understanding of students’ actual views (Maxwell, 2009).

The observation protocols (Appendices H and I) were provided to each classroom teacher to complete as the lesson was taking place. Beforehand, the researcher discussed with each classroom teacher how to use the protocols prior to the classroom teacher’s observation of her class during the lessons. Upon completion of the lessons, the researcher reviewed the observation sheets for qualitative differences in evidence of student engagement across lessons with and without song. Differences were noted and catalogued, including frequency across lessons and differences occurring among students and classes.

In addition to the above, the researcher interviewed each classroom teacher with the observation protocols that the teacher filled out for the vocabulary lessons taught with and without song. The classroom teacher was asked the following questions (also provided in Appendix J):

- What did you notice about your students when the story was being read to them?
- What did you notice about your students when the story was being sung with them?
- Was there a difference in their engagement and what evidence did you observe supporting this difference?
- Why do you feel your students reacted that way?

Upon completion of the interviews, the researcher reviewed the answers to each of these questions from the four classroom teachers to see if there were (1) any significant commonalities in their observations and explanations and/or (2) strong differences as observed by the teacher across classrooms.

**Qualitative analysis: students’ perceptions.** Students’ comments were collected through a brief set of interview questions following their participation in the two vocabulary
instruction lessons with the two different song picture books; one using singing and one using reading to learn the new vocabulary words (Appendix G). Students were interviewed after the posttest for the second set of vocabulary words (Set 2). Students were asked to reflect on the lessons and share their ideas on which method of learning they enjoyed the most and why. The interview with each child was casual and conversational in nature.

Students met individually with the researcher and were asked about the lessons in a quiet spot just outside of their classroom. Both song picture books were on a table and the covers were shown to the student. The questions asked were as follows:

- We learned new words in both these books. Did you like one book better than the other? Which one? Why?
- We learned new words in both these books. One of them I read, and the other we sang together. What did you like better, (a) when I read the book to you or (b) when we sang the book together?
- Why did you like (a) or (b) better?
- We were learning new words when we read or sung these books. Do you think that you learned the new words better by listening to the story or by singing along with the story? Why?

The reason for employing both a quantitative and qualitative analysis of data was to better understand this research topic by using numeric trends, teacher observations, and the ideas of students. It was also the researcher’s hope to learn more about how young children acquire new vocabulary and to contribute information that could be used by teachers in their classrooms and others who are interested in this topic. It is hoped that when teachers interact with young
children and use language in the classroom, they will do so in purposeful and functional ways.

The literature suggests that developmentally appropriate approaches for teaching vocabulary, as well as instructional materials for enhancing young children’s vocabulary skills, need improvement. Strategies used in meaningful contexts through semantically related activities are needed. Opportunities for children’s active participation in learning are necessary to develop vocabulary skills.

With previous vocabulary research about best teaching practices in mind, my study to use song picture books to help young children acquire new words provided ways for students to engage in meaningful conversations, interactions, and movement as they were learning.

**Validity and credibility.** Limitations to the proposed study might have occurred if a significant number of students in the study had previous knowledge of the targeted vocabulary words in the two song picture books that were presented. For example, if students knew 19/20 of the words before the lessons were even presented, the study would not have provided much additional information. Using a pilot group, who were not part of the research study, reduced the likelihood of this happening.

Another limitation might have been that students were absent for one of the stories; then it would not be possible to assess the words that they had learned or to compare which lesson they enjoyed more during the student interview.

Also, some students might be familiar with the stories from reading they have done at home with their families or that previous teachers have already presented to them in their school experience.
The researcher had asked the classroom teachers beforehand in Group A and Group B if the stories chosen for the research study were read or sung during this school year. None of the teachers had presented these stories to their classes.

Although the researcher has known all the students chosen for the study for eight months, it might have been difficult to interview certain children. Some children might have limited conversational skills to share their ideas about the lessons.

Procedures to prevent or minimize internal validity threats were considered according to Creswell’s recommendations for designing research (Creswell, 2008). Both Group A and Group B experienced the same events during the song picture book lessons. The students involved in both Group A and Group B are all kindergarten students with about the same levels of development. The four classrooms comprising Group A and Group B were chosen to ensure that the total number of students in each group was as equivalent as possible. Eighty-five children was a sample large enough to allow for unforeseen reasons that participants would not be part of the study. The students in Group A and Group B were all in separate classrooms so it was unlikely that communication about the song picture book lessons would take place between classes.

**Protection of Human Subjects**

**Ethical issues.** The vocabulary lessons that were planned use teaching methods that are routinely used by teachers at the researcher’s school. Song picture books are often read with students as a way to actively engage students in their learning.

The superintendent of schools and the researcher’s principal were asked by written permission to allow the study to take place at this school with kindergarten students (See Appendix A).
Trust and respect had been established with the students in the research study as the researcher had worked together on different literacy lessons with them since September 2010. The researcher’s principal sent a letter and an informed consent form to the eighty-five families of children whom the researcher wanted to participate in the study. Seventy-one families signed the consent form giving their child permission to be part of this study (See Appendix C). The form acknowledged that the child’s rights would be protected during the data collection.

Verbal permission of kindergarten students was acquired before they were assessed on the vocabulary words from the two song picture books. Permission was asked of the students again when they were assessed after the vocabulary lessons and when they were interviewed about the song picture books that were sung with them or read (See Appendix D).

Chapter 4: Report of Research Findings

The focus of this research was to determine the following:

- If students’ singing along with a song picture book increases the acquisition of vocabulary words with kindergarten children.
- If students’ singing along with a song picture book increases student engagement.
- If young children believe that singing along to a song picture book helps them to learn new words in a vocabulary lesson.

This chapter presents the results of the assessments that were conducted with young children in their acquisition of vocabulary words before and after song picture books were presented to them either by being read or by being sung. The four classroom teachers’ observations of their students when the story was either read to them or sung is presented and discussed, as well as the students’ views about the vocabulary lessons and how they felt they learned new words best.
Research Question #1: To what extent does kindergarten children’s singing along with a song picture book increase their vocabulary acquisition?

The first research question is: To what extent does kindergarten children’s singing along with a song picture book increase their vocabulary acquisition? The researcher’s hypothesis was:

Students who are introduced to vocabulary words with a song picture book through singing will acquire more vocabulary words than students introduced to vocabulary words in a song picture book without the use of music and singing.

Data collection and analysis. Two different groups were part of the research study. Group A was comprised of two classes, Class 1 and Class 2. Group B was also comprised of two classes, Class 3 and Class 4. Prior to the experiment, the researcher identified the number of targeted words each student knew from each song picture book. Words students did and did not know were also noted using the pre-assessment tool as presented in Appendices E and F. Both groups were taught new vocabulary words from the song picture books Down by the Station by Will Hillenbrand and Down by the Bay by Raffi, either by having the story read to them or sung with them. There were 37 students in Group A and 34 students in Group B. A scatter plot was used to identify whether certain populations of students could be considered outliers to the analysis.

To determine whether students acquired a greater number of vocabulary words after having a song picture book either read to them or sung with them, an analysis of covariance (ANCOVA) was used. The number of words known after reading or singing with the song picture book was the covariate. Whether the book was read to the students or whether students sung along with the book was the contrasting factor.
The results are shown through tables and text and discussed as follows:

- Analysis of outliers.
- Number of words students knew before and after the two song picture books were read and sung.
- Analysis of ten targeted words known prior to and after the vocabulary lessons using the song picture books either read or sung.
- Summary of results.

**Identification and analysis of outliers.** Prior to running an ANCOVA for all students using the number of words known before and after being read or singing along with a song picture book, the researcher looked at the data to consider whether there were any significant outliers that should not be validly included in the analysis. In particular, there were two children with significant special needs and three children who spoke English as a Second Language. All of these students were in Group A with no students with significant special needs or speaking English as a Second Language in Group B.

The researcher was interested to know whether any of these students might have scored substantially different from the rest of the student population, and whether this difference might be significant enough to consider them as outliers in the study. While it is important to recognize the results with these two populations, it was also important to identify whether these students might be justifiably excluded from the large group analysis given that all these students were in one group (Group A) and not in the other group (Group B). If any could be validly regarded as significant outliers and were kept in the analysis, the overall findings could be compromised.

In reviewing the results across all students in Group A, the two children who were taught in a substantially separate classroom for students with significant special needs for most of their
school day did indeed score significantly different than the rest of the children in the research study. The two children with significant special needs knew fewer words when they were pre-assessed on the targeted words than typically developing students. In addition, the two children with significant special needs continued to know a significantly fewer number of words than their typically developing classmates, independent of whether the song picture book was read or sung. One child did not learn any new vocabulary words when the story was read. The child’s score was 2-2 for *Down by the Bay*, meaning two words out of ten were known before the lesson and two words out of ten were known after the lesson. The child knew the same two words before and after the reading of *Down by the Bay*. The same child scored 1-2 for *Down by the Station*; the child knew one word before *Down by the Station* was sung and two words after the lesson. The second child with significant special needs learned one new word when each story was read and one new word when each song picture book was sung. The second child’s scores were 1-2 and 1-2. Both these findings were significantly different from the rest of the class, as will be presented in the next section.

Given that there were no students in Group B who were taught in a substantially separate classroom, the researcher decided to exclude the scores of the two students in Group A, identified as children with significant special needs, from the analysis in order to have an accurate depiction of results across classrooms. Thus Group A decreased from 37 students to 35 students, which was similar to the size of Group B (34 students).

Three students in Group A, who spoke English as a Second Language, knew one or two fewer words than most of the other non-ESL students during the pre-assessment of targeted words. However, they learned as many new vocabulary words as the non-ESL students when the

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1 They are included daily in Class 2 with typically developing students for the researcher’s literacy lessons outside of this study.
song picture books were read and sung. The only exception was one of the ESL students who was hearing impaired, who learned only one word when *Down by the Station* was sung and three words when *Down by the Bay* was read. Given this finding, it was decided to keep all the ESL students in the population.

**Number of words students knew before and learned after the two song picture books were read and sung.** Figure 1 shows the results for the sixty-nine students included in the analysis of this study, broken down by group, book, and whether the book was read to or sung with the students.

![Figure 1](image)

**Figure 1**

**Number of Words Known Before and Learned After Song Picture Books Were Read and Sung**

Figure 1 demonstrates that the number of words that students learned pre-to-post reading or singing along with each book significantly increased for all cases. The solid red line shows the vocabulary words Group A students knew before and after *Down by the Bay* was read with them. The dotted red line shows the vocabulary words Group A students knew before and after
“Down by the Station” was sung with them. The solid blue line indicates the vocabulary words Group B students knew at the pre- and post-assessments when “Down by the Station” was read to them. The dotted blue line shows the vocabulary words Group B knew before and after “Down by the Bay” was sung with them.

Table 2 shows the results broken down by group, book, and whether the story was read to or sung with the students.

Table 2

*Mean Number of Words Known Pre and Post Reading or Singing Along With Each Book by Group*

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Pre</th>
<th>Post</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group A</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Down by the Station</em> Sung</td>
<td>35</td>
<td>M (SD)</td>
<td>M (SD)</td>
<td>5.1</td>
</tr>
<tr>
<td><em>Down by the Bay</em> Read</td>
<td></td>
<td>3.7 (1.3)</td>
<td>8.8 (1.5)</td>
<td></td>
</tr>
<tr>
<td>Group B</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Down by the Station</em> Read</td>
<td>34</td>
<td>4.5 (1.4)</td>
<td>9.1 (1.2)</td>
<td>4.6</td>
</tr>
<tr>
<td><em>Down by the Bay</em> Sung</td>
<td></td>
<td>6.1 (1.4)</td>
<td>9.4 (1.2)</td>
<td>3.3</td>
</tr>
</tbody>
</table>

As can be seen in Table 2, the number of words that students knew after singing along with the song picture books or having the books read to them increased for both groups. Group A went from knowing a mean of 3.7 words to a mean of 8.8 words in “Down by the Station” after singing along with the song picture book, and went from a mean of 5.1 words to a mean of 9.3 words in “Down by the Bay” after reading along with the song picture book. Group B went from
knowing a mean of 4.5 words to a mean of 9.1 words in *Down by the Station* after reading along with the song picture book, and went from a mean of 6.1 words to a mean of 9.4 words in *Down by the Bay* after singing along with the song picture book. It is important to note here that after the books were either sung along with or read to them, all students retained the number of words that they had known beforehand.

To determine whether there was a significant difference between groups in number of words acquired either reading or singing along with a song picture book, an analysis of covariance test was used. The ANCOVA was used to determine whether a group acquired more words singing along with a song picture book or having a book read to them using the number of words known prior to reading or singing along as the covariate. Using the ANCOVA, it was found that the number of words known after either being read to or having sung along with a song picture book was not statistically significant for either group or book. For *Down by the Station*, there was no significant difference between Group A and Group B, $F (1,66)=0.00$, $p=.987$. For *Down by the Bay*, there was also no significant difference between Group A and Group B, $F (1,66)=1.99$, $p=.163$.

Table 3 breaks the collected data down further to show by Class the number of words known before and after the song picture books were sung along with or read.

<table>
<thead>
<tr>
<th>Class</th>
<th>Pre-Mean</th>
<th>Post-Mean</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group B</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
As can be seen in Table 3, the number of words that students learned after the song picture book was read or sung increased for all classes. From Figure 1 and Tables 2 and 3, the following results can be noted:

- Students in both Group A and Group B learned new vocabulary words whether the song picture book was read or sung.
- Students in Group B knew more of the targeted words in both song picture books to start.
- Students in Group B learned more words when the story was read while Group A students learned more words when the story was sung, although this difference was not statistically significant.
- Students in both groups knew more of the ten targeted words in *Down by the Bay* than in *Down by the Station* before the lessons were taught (pre-assessment).
- The researcher’s hypothesis was tested with two different books with four different classes of kindergarten students. The data showed that the difference between the
number of students learning new vocabulary words when the song picture book was read with the number of students than when the song picture book was sung was not significant in all cases.

**Analysis of ten targeted words known prior to and after the vocabulary lessons using the song picture books either read or sung.** The researcher wanted to learn which words students knew before and after the lessons were presented for each of the song picture books that were read and sung. It was also interesting to note which words were already part of the kindergarteners’ vocabulary and which words were new for most of the students. Tables 4 and 5 present this data. Table 4 presents how many students knew each word prior to and after each song picture book was either sung along with or read. Table 5 represents this data in terms of the percentage of students who knew each word prior to and after being read or singing along with each song picture book.
Table 4
Number of Students by Group Knowing Ten Targeted Words from Two Song Picture Books Pre and Post Vocabulary Lessons

<table>
<thead>
<tr>
<th>Down by the Station</th>
<th>Group A - SUNG</th>
<th>Group B - READ</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
</tr>
<tr>
<td>Station</td>
<td>1</td>
<td>32</td>
</tr>
<tr>
<td>Lever</td>
<td>4</td>
<td>26</td>
</tr>
<tr>
<td>Calf</td>
<td>0</td>
<td>23</td>
</tr>
<tr>
<td>Flamingo</td>
<td>27</td>
<td>33</td>
</tr>
<tr>
<td>Chick</td>
<td>0</td>
<td>32</td>
</tr>
<tr>
<td>Cub</td>
<td>3</td>
<td>30</td>
</tr>
<tr>
<td>Tiger</td>
<td>30</td>
<td>33</td>
</tr>
<tr>
<td>Seal</td>
<td>20</td>
<td>31</td>
</tr>
<tr>
<td>Kangaroo</td>
<td>34</td>
<td>34</td>
</tr>
<tr>
<td>Joey</td>
<td>10</td>
<td>34</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Down by the Bay</th>
<th>Group A - READ</th>
<th>Group B - SUNG</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
</tr>
<tr>
<td>Bay</td>
<td>0</td>
<td>25</td>
</tr>
<tr>
<td>Watermelon</td>
<td>30</td>
<td>34</td>
</tr>
<tr>
<td>Goose</td>
<td>5</td>
<td>34</td>
</tr>
<tr>
<td>Moose</td>
<td>26</td>
<td>34</td>
</tr>
<tr>
<td>Whale</td>
<td>24</td>
<td>35</td>
</tr>
<tr>
<td>Polka-dotted Tail</td>
<td>15</td>
<td>34</td>
</tr>
<tr>
<td>Fly</td>
<td>24</td>
<td>32</td>
</tr>
<tr>
<td>Tie</td>
<td>18</td>
<td>33</td>
</tr>
<tr>
<td>Comb</td>
<td>28</td>
<td>32</td>
</tr>
<tr>
<td>Llamas</td>
<td>7</td>
<td>33</td>
</tr>
</tbody>
</table>
Table 5
*Percentage of Students by Group Knowing Ten Targeted Words in Two Song Picture Books Pre and Post Vocabulary Lessons*

<table>
<thead>
<tr>
<th></th>
<th><strong>Down by the Station</strong></th>
<th></th>
<th><strong>Down by the Bay</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Group A - SUNG</strong></td>
<td></td>
<td><strong>Group B - READ</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Pre</em></td>
<td><em>Post</em></td>
<td></td>
<td><em>Pre</em></td>
</tr>
<tr>
<td>Station</td>
<td>3%</td>
<td>91%</td>
<td></td>
<td>9%</td>
</tr>
<tr>
<td>Lever</td>
<td>11%</td>
<td>74%</td>
<td></td>
<td>24%</td>
</tr>
<tr>
<td>Calf</td>
<td>0%</td>
<td>66%</td>
<td></td>
<td>6%</td>
</tr>
<tr>
<td>Flamingo</td>
<td>77%</td>
<td>94%</td>
<td></td>
<td>82%</td>
</tr>
<tr>
<td>Chick</td>
<td>0%</td>
<td>91%</td>
<td></td>
<td>3%</td>
</tr>
<tr>
<td>Cub</td>
<td>9%</td>
<td>86%</td>
<td></td>
<td>21%</td>
</tr>
<tr>
<td>Tiger</td>
<td>86%</td>
<td>94%</td>
<td></td>
<td>94%</td>
</tr>
<tr>
<td>Seal</td>
<td>57%</td>
<td>89%</td>
<td></td>
<td>82%</td>
</tr>
<tr>
<td>Kangaroo</td>
<td>97%</td>
<td>97%</td>
<td></td>
<td>97%</td>
</tr>
<tr>
<td>Joey</td>
<td>29%</td>
<td>97%</td>
<td></td>
<td>29%</td>
</tr>
<tr>
<td></td>
<td><strong>Group A - READ</strong></td>
<td></td>
<td><strong>Group B - SUNG</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Pre</em></td>
<td><em>Post</em></td>
<td></td>
<td><em>Pre</em></td>
</tr>
<tr>
<td>Bay</td>
<td>0%</td>
<td>71%</td>
<td></td>
<td>0%</td>
</tr>
<tr>
<td>Watermelon</td>
<td>86%</td>
<td>97%</td>
<td></td>
<td>88%</td>
</tr>
<tr>
<td>Goose</td>
<td>14%</td>
<td>97%</td>
<td></td>
<td>18%</td>
</tr>
<tr>
<td>Moose</td>
<td>74%</td>
<td>97%</td>
<td></td>
<td>94%</td>
</tr>
<tr>
<td>Whale</td>
<td>69%</td>
<td>100%</td>
<td></td>
<td>94%</td>
</tr>
<tr>
<td>Polka-dotted Tail</td>
<td>43%</td>
<td>97%</td>
<td></td>
<td>62%</td>
</tr>
<tr>
<td>Fly</td>
<td>69%</td>
<td>91%</td>
<td></td>
<td>74%</td>
</tr>
<tr>
<td>Tie</td>
<td>51%</td>
<td>94%</td>
<td></td>
<td>68%</td>
</tr>
<tr>
<td>Comb</td>
<td>80%</td>
<td>91%</td>
<td></td>
<td>88%</td>
</tr>
<tr>
<td>Llamas</td>
<td>20%</td>
<td>94%</td>
<td></td>
<td>21%</td>
</tr>
</tbody>
</table>
The following highlights from Tables 4 and 5 are noted:

*Down by the Station*

- When *Down by the Station* was read, more students learned the ten targeted words, with the exception of the words “cub” and “joey”.
- The same number of students learned the words “calf”, “flamingo”, “chick”, and “kangaroo” regardless of whether the story was read or sung.
- The words “station”, “lever”, “calf”, “chick”, and “cub” are not a strong part of this kindergarten population’s vocabulary.
- Group B students knew more of the ten targeted words before the lessons were presented.

*Down by the Bay*

- When *Down by the Bay* was read, more students learned the ten targeted words.
- The same number of students learned the words “watermelon”, “moose”, “tie”, and “comb” regardless of whether the story was read or sung.
- The words “bay”, “goose”, and “llamas” are not a strong part of this kindergarten population’s vocabulary.
- Group B students knew more of the ten targeted words before the lessons were presented.

*Overall*

- 100% of all students learned at least three of the ten targeted words from each story when the story was sung and when it was read.
- Of the 69 students, 59 (75%) learned at least 9 of the 10 targeted vocabulary words in each book regardless of whether it was read or sung.
• Of the 45 students who knew 4 or fewer words in *Down by the Station*, all but 6 (87%) learned at least 5 new words.

• Of the 14 students who knew 4 or fewer words in *Down by the Bay*, all but 2 (85%) learned at least 5 new words.

• The percentage of students in both groups learning the targeted words was significant when a song picture book was read or sung to students four times.

**Summary of results.** The researcher’s hypothesis was: *Students who are introduced to vocabulary words with a song picture book through the use of music and singing will acquire more vocabulary words than students introduced to vocabulary words in a song picture book without the use of music and singing.*

After the investigation, the researcher found that students did learn new vocabulary words. The number of words that students knew at the post-assessment increased significantly from the pre-assessment whether the song picture book was sung along with or read.

In Group A, there were two outliers, students with special needs taught in a substantially separate classroom, who did not learn new words when the song picture books were read or sung. Their scores were eliminated from the final analysis of the study to provide a more accurate depiction. The scores of students who speak English as a Second Language and students with special needs in inclusion classrooms were kept in the analysis, since they were able to learn new words at the same rate as typically developing students.

Students in both groups knew more of the ten targeted words in the song picture book *Down by the Bay* than in *Down by the Station* during the pre-assessment.

Students in Group B knew more vocabulary words than the students in Group A before and after the lessons presented, regardless of whether the song picture book was read or sung.
Students did not acquire significantly more words when new vocabulary words were introduced with music or when they were singing along with a song picture book.

**Research Question #2: To what extent does singing along to a song picture book with a focus on vocabulary acquisition increase student engagement?**

The second research question is: To what extent does singing along to a song picture book with a focus on vocabulary acquisition increase student engagement? The researcher’s hypothesis in response to this question was:

*Classroom teachers will observe more engagement among students when learning new vocabulary words in a song picture book when music and a sing along is included as part of the lesson than without. Teachers will notice that children are attending to the story, answering questions asked about the targeted words, and actively participating in the story by singing the words to the song, moving to the music and/or acting out the words to the vocabulary lesson when music and singing along is used as a learning modality.*

**Data collection and analysis.** The researcher developed a common observation tool to be used by each of the four classroom teachers. They were given a list of the students in their class with four observation sheets, one for each story for Day 1 and one for each story for Day 2 (See Appendices H and I). The researcher met with them before the lessons to explain how to record their observations. While the story was being read or sung the four classroom teachers were recording the answers to the following questions:

1. How many children were attending to the song picture story being read or singing along with the story?

2. How many children were answering questions being asked about the targeted words and what were they saying?
3. How many children were moving to the song picture books and/or acting out the words as they were being read or sung?

Teachers put a check mark next to the names of the children who were attending to the lesson when the song picture book was being read. When the lesson was being sung, students who sang along with the researcher had a check mark put next to their names. Teachers described how students were engaged and if they were singing or acting out the new vocabulary words as they were being read or sung. In addition, teachers recorded which students answered the question, “What is a____?” for the ten targeted vocabulary words from each book and what each student said.

The researcher also provided a teacher observation sheet (Appendix J) for each classroom teacher to reflect on her class’s participation after the lessons were taught and whether students were showing more engagement learning targeted words when singing along was used to teach new vocabulary or when the song picture book was being read.

Two different groups were part of the research study: Group A, which was comprised of Class 1 and Class 2, and Group B, which was comprised of Class 3 and Class 4. Both groups were taught new vocabulary words from the song picture books Down by the Station by Will Hillenbrand and Down by the Bay by Raffi. Group A was read Down by the Bay and sung along with Down by the Station. Group B sung along with Down by the Bay and was read Down by the Station.

Group A and Group B classes were very similar with regard to the numbers of children who had been identified with special needs and ELLs (English Language Learners). Unfortunately, permission to be part of the research study was not provided by a number of the families of students with special needs and ELLs (English Language Learners) in Group B.
The analysis results are shown through tables and text and discussed as follows:

- The results of the observation sheets completed by each of the four classroom teachers while the vocabulary lessons were being taught.
- Teachers’ perceptions of how their classes responded to the song picture books being sung along with or read.
- Teachers’ observations and recordings of students’ answers to questions about the targeted words during the lessons when the song picture books were being sung along with and read.
- Amount of vocabulary words learned in relation to students’ participation in attending/singing and discussion by group.
- A summary of the analysis.

**Results of observation sheets completed by four classroom teachers during vocabulary lessons.** Each classroom teacher was asked to record the number of students in her class who were attending to the story being read or singing along with the story both times the lesson was presented on Day 1 and for both times the lesson was presented on Day 2. When the song picture book was sung, attending was recorded if the student joined in singing along. Each classroom teacher was asked to record which students answered the question, “What is a ___?” about the ten targeted vocabulary words and what the students said. Each classroom teacher also recorded which students were engaged in self-initiated movements such as tapping, clapping, or motions that were related to the stories and what actions the students did. These results are recorded in percentages and are shown in the following table:
Table 6

Results of Observations Sheets Completed by Four Classroom Teachers During Vocabulary Lessons

<table>
<thead>
<tr>
<th></th>
<th>Day 1</th>
<th>Day 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1st Time</td>
<td>2nd Time</td>
</tr>
<tr>
<td></td>
<td>Read</td>
<td>Sung</td>
</tr>
<tr>
<td>Students Attending to the Story</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class 1</td>
<td>83%</td>
<td>56%</td>
</tr>
<tr>
<td>Class 2</td>
<td>100%</td>
<td>74%</td>
</tr>
<tr>
<td>Class 3</td>
<td>100%</td>
<td>60%</td>
</tr>
<tr>
<td>Class 4</td>
<td>100%</td>
<td>42%</td>
</tr>
<tr>
<td>All Classes</td>
<td>96%</td>
<td>58%</td>
</tr>
<tr>
<td>Students Answering Questions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class 1</td>
<td>56%</td>
<td>83%</td>
</tr>
<tr>
<td>Class 2</td>
<td>58%</td>
<td>53%</td>
</tr>
<tr>
<td>Class 3</td>
<td>73%</td>
<td>60%</td>
</tr>
<tr>
<td>Class 4</td>
<td>79%</td>
<td>74%</td>
</tr>
<tr>
<td>All Classes</td>
<td>66%</td>
<td>67%</td>
</tr>
<tr>
<td>Students Engaged in Movements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class 1</td>
<td>39%</td>
<td>17%</td>
</tr>
<tr>
<td>Class 2</td>
<td>16%</td>
<td>16%</td>
</tr>
<tr>
<td>Class 3</td>
<td>0%</td>
<td>20%</td>
</tr>
<tr>
<td>Class 4</td>
<td>58%</td>
<td>11%</td>
</tr>
<tr>
<td>All Classes</td>
<td>28%</td>
<td>16%</td>
</tr>
</tbody>
</table>

Table 6 addresses whether there was a difference in student engagement when a song picture book was sung along with or read in the three areas shown: students attending to the story, students answering questions, and students engaged in movements. The following highlights from the table are noted by area:

**Students attending to the story.** The number of students attending to the story each time
and each day that the lesson was presented either by reading or singing along was recorded by the teacher of each class. The researcher tabulated the numbers, found the percentages for each class, and made the following observations from Table 6:

- On average, the very first time that the song picture book was read or sung, all teachers indicated more attention when the story was read.

- The second time that the song picture book was read or sung on both days, there was less of a difference in the percentage of students who were attending.

- When the song picture book *Down by the Station* was sung with them, more children attended (joined in singing) on the second day of the lesson in both Class 1 and Class 2.

- More children in Class 1 attended when the song picture book *Down by the Bay* was being read to them than when *Down by the Station* was being read to them.

- There was no change in the number of children attending to *Down by the Bay* being read from the first day to the second in both Class 1 and Class 2.

- Students in Class 3 and Class 4 were very attentive to the song picture book *Down by the Station* being read. Every child in both classes was focused on the book *Down by the Station* for all four readings.

- Fewer children in Class 3 and Class 4 attended to the song picture book *Down by the Bay* on Day 1 the first and second time that the story was sung compared to when *Down by the Station* was read to them.

- Class 3 showed even less interest in singing along with *Down by the Bay* on Day 2 when the book was sung.

- Class 4 showed the same amount of interest on Day 2 in singing along with *Down by the Bay* as when *Down by the Station* was read to them.
• On Day 2, Class 3 attended to the singing and had children singing along, but Class 4 had 100% participation in singing along with to *Down by the Bay* both times.

**Students answering the questions.** Each of the four classroom teachers recorded which students answered the question, “What is______?” for each of the ten targeted vocabulary words in *Down by the Station* and *Down by the Bay* and what the students said. The researcher tabulated the number of students answering in each class and found the percentage.

Observations from Table 6 are as follows:

• More students in Class 1 participated in discussing the new vocabulary words in the song picture book *Down by the Station*, which was being sung to them, and that number stayed constant from one day to the next.

• Students in Class 2 participated more in discussion when *Down by the Bay* was read to them and that number stayed constant from one day to the next.

• Many of the students in Class 3 and Class 4 were engaged in answering questions about the ten targeted vocabulary words being taught. More children participated in answering questions about the ten targeted words each time that the song picture book *Down by the Station* was read to them than when the song picture book *Down by the Bay* was sung with them.

• Children in Class 4 who had participated on Day 1 continued to do so for both readings of *Down by the Station* on Day 2.

• More children participated in sharing their ideas the second time the vocabulary words were taught on both Day 1 and Day 2 whether the song picture book was read or sung.

• More discussion took place on Day 2, the fourth time that the new words were presented, whether the song picture book was read or sung.
Students engaged in movements. Each of the four classroom teachers recorded how students reacted to the song picture books being read or sung and the actions and movements that took place. The researcher tabulated the number of children who responded with a physical motion to the new vocabulary words when they were read or sung, and a percentage was found. Observations of the results from Table 6 are as follows:

- When the song picture book *Down by the Station* was sung with Class 1 and Class 2, there was more engagement the second time that the song was sung on the first day and then, the number of children moving to the song stayed constant.

- On the second day *Down by the Station* was sung in Class 1 and Class 2, the number of children moving to the song stayed constant from the first time singing the story to the second time.

- The level of engagement increased each time the song picture book *Down by the Bay* was read to Class 1. By the fourth reading, most of the children were engaged in moving or doing actions to the new words.

- Not many children in Class 2 were engaged in a lot of movement when a song picture book was sung or read.

- The children in Class 3 did not initiate any movements while *Down by the Station* was being read either time on the first day. They became more engaged on Day 2.

- The children in Class 4 responded almost immediately to the words and pictures in *Down by the Station* being read about the baby animals and the sounds of the train, “Puff, Puff, Toot, Toot.” They used their arms and hands to make appropriate motions related to the animals and train whistle. More children in Class 4 became animated imitating one another and copying each other’s movements.
• Students engaged in movements in Class 3 and Class 4 when *Down by the Bay* was sung.

• Class 3 was more engaged in movements during the singing of *Down by the Bay* than the reading of *Down by the Station* on Day 1.

• Classes 3 and 4 participated more in movements when the song picture book *Down by the Station* was read to them.

• More children joined in doing actions each time *Down by the Bay* was sung in Class 4.

**Teachers’ observations and recordings of student’s comments during the vocabulary lessons when the song picture books were being read and sung.** Each of the four classroom teachers recorded what their students said to answer the question, “What is_____?” for each of the ten targeted words for each song picture book. The students’ comments and the teachers’ and researcher’s observations when the song picture book was being read and sung will be discussed in the following three areas: students attending to the story, students answering questions, and students engaged in movements. Group A, Classes 1 and 2, were read *Down by the Bay* and sang along to *Down by the Station*. Group B, Classes 3 and 4, were read *Down by the Station* and sang along to *Down by the Bay*.

**Students attending to *Down by the Bay* being read.** Children in Group A were interested in this book and attended well to the story being read both times on Day 1. In Class 1, on both days of reading the story, the same three children did not look in the direction of the reading or participate in speaking when questions were asked about the ten targeted words. In Class 2, all children were attentive to the story being read.

The second day that *Down by the Bay* was read, children were still very interested in the book. Six children in Class 2 were not marked as attending because they were not looking at the researcher reading or did not raise their hand to participate in discussion. They were looking
away from the book and pictures, but were not disruptive in any way. It is interesting to note that when they were individually assessed they did learn new words from the story even though they did not appear to be attending.

**Students attending to Down by the Station being read.** Children in Group B were very interested in the pictures and what was happening to the baby animals in the story. On Day 2, during the third and fourth time that the story was being read, children were very focused on each page that the researcher showed them and noticed more and more details in each of the pictures.

In Class 3, the students discovered that the illustrator gave a clue on the previous page about which animal at the zoo would be seen next. For example, one child who can read said, “The sign says, ‘Seal Island,’ so seals will be on the next page.” The pattern was continued for all the animals at the zoo and the class enjoyed predicting aloud what animal would be shown when the page was turned.

Another child observed that the red balloon was on every page. This child’s comment engaged the entire class in looking for and locating the balloon on each page as the story continued to be read. One child realized that the author had the balloon appear to lead the way to the zoo. She commented, “I think the engine driver follows the balloon to the zoo.”

Children talked about the feelings of the animals with which they could identify. One student remarked, “The mother seal looks sad. Why, do you think?” A classmate answered the question: “The baby seal is going on the train.” Children related to the farewells by the baby animals; this led to a discussion of saying good-bye to their own families when they are leaving to go to school.

Class 3 had just had a field trip to the zoo the day before and as the story was read they
recalled which animals they had seen. One child said, “The kids are just like our class jumping off the school bus.”

Children in Class 4 noticed writing on different signs and asked what they said. Class 4 also asked questions while the story was being read that prompted their classmates to answer and participate in the lesson such as, “Why does the balloon look so little?” and “Where did the monkey get the balloon?”

Another child in Class 4 noticed that the baby elephant (calf) drank water from the pond and then squirted it so that the zookeeper on the train put up her umbrella. He said, “Watch what the elephant does with the water.” Again, this helped other children in the class attend to the story and look to see what would happen.

After the fourth reading, more details were noticed and commented on by both classes. Class 4 discussed how the penguin must have been feeling when he fell into the crocodile pool. “The penguin is sweating; he’s so scared!” One child transferred her own experiences about safety rules on a moving vehicle onto the animals saying, “The mom and dad are mad ’cause the penguin should be sitting and he’s standing.” Another child thought differently and said, “I think the mom and dad are sad ’cause the seal is about to climb into the danger zone.”

The crocodiles, circling the animals when the train fell into their pool, got the most reaction. Children cried in unison, “UH OH!” along with the exact words of the story. When the baby animals were rescued, one child said, “The crocodile is crying. He’s not going to get anything to eat!”

Class 4 also noticed that a child in the story at the zoo was in a wheelchair and wondered aloud about why this might be. Children shared stories of people that they knew in wheelchairs who were mostly grandparents. One child had broken a leg and talked about that. The teacher in
this class took notes on ideas for further discussion that the story generated. She told her class that they would read and talk more about this topic.

**Students answering questions when *Down by the Bay* was read.** In Group A on Day 1, more students responded to questions asked about the ten targeted words the second time the words were discussed. One possible explanation is that the students felt more comfortable to answer when the lesson was being repeated. It might also be the case that they understood the word meaning better after having heard its meaning discussed and having heard it read in context a second time. For the purpose of the study, the researcher only called upon students who raised their hand to participate on their own. For other lessons, students are all given the chance to answer or they can choose to say pass.

There was a noticeable difference in the way the children described the new words in *Down by the Bay* than *Down by the Station*. Because children were familiar with the structure and format of the lessons in learning new words, they tended to share more information about what they knew about the targeted word. Instead of a phrase or short response to describe the targeted words, many children spoke in sentences and told a short story about each picture. They noticed details and commented on them. For example, one child said, “Whales don’t really have polka-dotted tails. They do have spouts.” Another child told the class, “Whales have big tails. They are the biggest animal. No other animal can be bigger. They are the biggest creature in the world!” Other children related stories about going on whale watching boat trips with their families. Each word generated lots of discussion among the children in the two classes.

Children also had a lot of information to share about watermelon. To many of them it is a familiar or favorite fruit. They knew the following details about it: “Watermelon makes you healthy.” “It has seeds.” “It grows on vines and can get this big” (shows with arms a giant
shape).

Again, the children answered each other’s questions. _Down by the Bay_ is a story that has many rhyming words. At the end, there is a made up word, “bapple.” One child asked, “What’s a bapple?” Two different children answered, “It’s not a real word, just a rhyme.” Another child said, “Like your name, Vincenzo, Bincenzo!”

On Day 2, children in both Class 1 and Class 2 continued to share ideas they knew about the ten targeted words. They were able to provide new definitions and new insights with each additional reading of the song picture book.

_Students answering questions when Down by the Station was read._ In Group B, students in Class 3 provided brief definitions of the ten targeted words on Day 1. They spoke in phrases or one-word responses. After the second reading, almost every student in this class participated in answering a question, noticing a detail in the illustrations or asking their own question about one of the pictures. In Class 3, there was one child who did not participate at all in the discussion. He spoke English as a Second Language. In Class 4, two typically developing children did not participate verbally, but still seemed interested in what was being said.

Students in Class 4 were more descriptive in sharing what they knew about the targeted words. One child had acquired a lot of information about animals and shared where they lived and what they ate. This prompted other children to remember things that they had learned and to talk about their ideas with the class.

The responses of the children and their interest in the story increased the level of discussion the following day when the story was read again for the third and fourth time. On Day 2, when the researcher pointed to each targeted vocabulary word to review the meaning, a large majority of the students in both classes answered the questions. In both classrooms lots of
discussion had already taken place the previous day and the children seemed eager to continue the discussion.

In both Class 3 and Class 4, children spoke in complete sentences to share their ideas on the second day of discussion. This time when the questions were asked, some children not only gave the name of the targeted word and described what it was, but related it to a part of the story. For example, a child said, “A joey is a baby kangaroo. It’s small. It’s jumping like the mother kangaroo.” Another child commented, “That’s a tiger. It’s big. The dad tiger looks sleepy.”

**Students engaged in movements when Down by the Bay was read.** In Group A, one child in Class 1 had learned motions to the story in preschool. She moved in certain ways and did different hand motions for the words “bay”, “watermelons”, “grow”, “home”, and the phrase “dare not go.” Other children watched her actions and copied her movements. Some children watched but did not participate in the actions as the story was reread.

In Class 2, fewer children did movements to the story as it was being read. Children participating with actions pretended to comb their hair and use their hands to make moose antlers.

Children remembered the actions that they had done the day before for the different words and used them again as the story was being read to them on Day 2. Additional children joined in doing the movements, copying their classmates, in both classrooms.

**Students engaged in movements when Down by the Station was read.** In Group B, the children in Class 3 did not initiate any movements while the story was being read either time on the first day. In comparison, Class 4 was very involved and moved like the different animals in the book almost immediately. More children became animated, imitating one another and copying each other’s movements. Class 4 had heard the first verse of *Down by the Station* in a
music class and this might have motivated them to engage quickly with the story.

The rhythm of the reading, the illustrations, and children’s knowledge about animals’ motions generated lots of movement from both Class 3 and Class 4, especially on Day 2. Children acted like the animals, jumping like kangaroos and pretending to have trunks like elephants. They pulled an imaginary lever, as the train engineer in the story would have. They waved good-bye when the baby animals did as they were leaving their families to go to the children’s zoo. Children put their hands up to their mouths to show fear when the animals fell in the crocodile pond. One child clapped when the zookeeper’s umbrella became a boat and rescued the animals.

_Students attending to Down by the Station being sung._ On Day 1, students in Group A joined in singing almost right away as the researcher started to sing the book. The music teacher had taught them a version of the first verse so it was familiar to them. _Down by the Station_ follows a pattern and has a refrain that remains constant throughout the story. A different animal and animal baby is introduced on each page. The repetition of words is satisfying to young children, reinforcing the language of the story. Children had the opportunity to look at the ten targeted words that were posted and hear them while the story was being sung.

More children sang along the second time the song picture book was sung. This may have occurred for the following reasons:

- The words were more familiar to them, since they had heard the song once already.
- The vocabulary words had already been discussed.
- There was more interest in the story the second time.

Children who were not singing were still attending to the story by hearing the words and looking at the book. There were two children who were not looking at all and were distracted by
themselves or other things in the room.

The second day in Class 1, more children sang along with the story the second time that the story was sung, but not as many as the previous day. Children who were sitting closest to the posted pictures of the targeted words tended to look at those rather than at the researcher and the book. Class 2 was very engaged both times the story picture book was sung on the second day. Almost everyone was interested in a part of the story in which a section of the train gets disconnected and some of the animals fall into a crocodile pond labeled with a DANGER sign that has been partially destroyed by crocodile bites. Luckily, a zookeeper falls into the pond, too, and uses an umbrella as a boat to save herself and all the animals.

**Students attending to Down by the Bay being sung.** In Group B, on Day 1, more children joined in singing the song the second time that it was sung in both classes. Class 4 was more involved with the singing. Children in both classes who were not singing along were sitting quietly looking at the book being sung by the researcher.

On Day 2, Class 3 attended to the singing and had children singing along, but Class 4 had 100% participation in singing along with *Down by the Bay* both times that it was sung. A few more children joined in singing in Class 3 the second time that the song was sung.

**Students answering questions when Down by the Station was sung.** In Group A, many of the students in Class 1 participated in the discussion of the new vocabulary words both times that the words were discussed on Day 1. This conversation gave most students a chance to speak and connect more with the pictures and words of the vocabulary lesson. Not as many children discussed the words in Class 2, but there was some participation. Children shared their ideas about a targeted word and could hear others’ ideas about the same word. Providing this opportunity for young children to talk, and including all the children who volunteer the chance to
answer, allows for rich language descriptions and allows children to learn from each other different definitions for the same word. For example, when the researcher asked, “What is a train station?” there were multiple answers. One child replied, “Where you get the tickets.” Another child answered, “Where the train passes through.” Another child shared with the class that “it’s a place where passengers get on.” Still another child told a story about going to a train station “where people can get tickets for their family to go to New York.” She recalled a couple of memorable events that had taken place on a train trip that she had taken.

The second day the number of students in Class 1 who answered questions that were asked about the targeted words was exactly the same number as the first day. The same three children in Class 1 did not raise their hand to respond either day. Two of those children speak English as a Second Language.

In Class 2, one more child participated in answering questions on the second day. Although not as many children participated verbally in this class as in Class 1, there was still quite a bit of discussion since the children who did participate had more than one comment about the different targeted words. One child wondered if the penguin in the story was singing. Another child responded to her, saying, “like an opera singer.” This class had just gone on a field trip, riding the commuter rail train from a station near their school into Boston. They made connections from the book to their own experiences sharing ideas such as, “We saw a lot of pufferbellies at South Station,” and, “Our station was big, big, bigger!” The children also identified with things about the animals, saying, “I have flamingoes on my shirt,” and, “I have a toy panda.”

This time, in both classrooms, the answers to the questions were different, but still accurate. Children were adding ideas to the original ones shared and heard the day before.
Children had listened and seen what happened in the story and this helped them to formulate new ideas about the words presented. This time the train station was a place “where you can go to pay a person to get on the train,” or “where you can get off the train.”

After the fourth time that the story was sung/read, children noticed more details in the illustrations and their comments became lengthier. For example, one child noticed a panda was in front of the elephant and wondered if they might be friends. Another child noticed that a school bus was bringing children to the zoo where the animals were also going. Children were able to understand and use words that had not been part of their vocabulary. For example, most children did not know the targeted word “lever”, but were able to talk about it on the second day and describe a lever as “something you pull to control the train” or that is used “to help the train stop or go to pick up people.” Children in both classrooms noticed more about the story on the second day and asked questions about the story and illustrations such as, “Is there a balloon on each page?”

Children also learned from each other as they asked questions and another child in the room answered. Some examples of these interactions are: “Why does the conductor have three clocks?” “One for the hour, minutes and seconds”; “Is the ticket man different than the man driving the train?” “One is a conductor and one is an engineer.” One child in Class 2 knew many different parts of a train, which he shared with the class. He asked if anyone knew the name of a different part (smokestack) that he did not know. More vocabulary words than the ten targeted words were heard and discussed because children were given plenty of time and encouragement to speak about their previous knowledge and experiences and participate fully in the lesson.

*Students answering questions when Down by the Bay was sung.* In Group B, many children in both classes volunteered ideas about the new words whether the story was read or
sung, but fewer when the story was sung. However, *Down by the Bay* being sung generated more comments about children’s own experiences and knowledge than the discussion that took place when *Down by the Station* was read. The illustrations in *Down by the Bay* were silly ones and children focused their remarks and observations on what they saw in the pictures, especially those with which they could identify.

For example, in Class 3, children spoke about specific characteristics of the targeted words. A “watermelon” was green, a “goose” was white, and a “moose” was big and brown. Children told about their own experiences with the pictures, such as, “I love to eat juicy watermelon,” or, “My mother really likes moose. We saw one in our backyard.”

One child informed us, “llamas have little feet with hooves on them.” This started a discussion among the children about other animals that had hooves or paws or feet. This was a tangent that generated lots of “brainstorming” and gave the class the opportunity to think of and name many animals and then categorize them by what type of feet they had.

Another child questioned why the mother in the story was trying to swat a fly with a “bug whacker” outside. Her classmates discussed how different insects could bother you inside your house or outside in your yard. Lots of discussion and use of language was generated by this class looking at the pictures and answering the questions about the targeted words.

In Class 4, children who answered questions spoke in sentences and had accurate information to share about each targeted word. They discussed different ideas about the same new words. Children described watermelon as “a type of fruit.” They supplemented each others’ ideas. One child said, “Watermelon has white, little seeds, you can plant.” Another child added, “There are two kinds of seeds, white and black.”

Children learned from each other as they provided more information about the targeted
words. An example of this was when the targeted words “moose” and “whale” were discussed. One child shared that moose had horns. Another child offered, “those horns are called antlers and they are hard.” Some ideas were simple, such as, “Moose like to go in the woods,” and “whales eat fish.” Other thoughts on the same word reflected children’s different levels of knowledge and understanding. One child related, “Eventually, when the moose gets older, they lose their antlers and grow new ones.” Another child knew that moose means “to cut off” in an Indian language because of the way moose eat bark and twigs off trees. Other children related where whales live (“in water”, “where it’s really really deep”), what they eat (“fish”, “plankton”), what they do (“blow water from their spouts”), and that people hunt them in different countries. Each child who chose to speak gave information that they had learned from their experiences.

On Day 2, both classes had a significant amount of children participate in answering the questions about what each of the ten targeted words meant. As the children commented on the pictures and the new words, opportunities arose to learn more vocabulary from the researcher, teacher, and other children. For example, one child asked, “Do whales have teeth?” The researcher explained that some smaller whales, like beluga whales, do have teeth. Some whales, called baleen whales, don’t have teeth. The researcher related what baleen looked like and how it worked for the whale when eating. Another child made a comment about the “yellow hair lady” in the story. The teacher of Class 3 explained that this color hair is called blonde. Children in the class with blonde hair were named. A child in the class told us that “whales squirt out water.” Another child added, ”It’s called a spout.”

The illustrator of *Down by the Bay* drew the animals doing silly actions that would not really be possible, such as a goose kissing a moose or llamas wearing pajamas. A few children
had not yet developed an awareness of what is real and what is fantasy. One child said, “I never saw a fly wearing glasses.” Another child asked, “Do bears really comb their hair?” The researcher realized the amount of explanation needed to help some children understand, regardless of whether a story is being read to or sung with them. There is a wide difference of comprehension among kindergarten students that teachers need to be aware of and address.

**Students engaged in movements when Down by the Station was sung.** In Group A, the first time the story was sung on Day 1, just a few children in both classrooms moved to the music. These movements included nodding a head, moving from side to side, and looking at the pictures of the ten targeted words that were posted.

The second time the story was sung on Day 1, more children in both classrooms were involved. Children were swaying to the song, pulling the imaginary lever, flapping their arms, and acting out animal movements such as pretending to be a flamingo, seal, or crocodile, and pointing to the pictures of the ten targeted words that were posted. Class 1 participated more in movement than Class 2.

The second day more children were moving to the story as it was sung and they were singing along right from the beginning of the lesson. Both times that the story was sung that day, children showed movements such as pretending to pull on the train lever, moving their arms and legs as they sang, tapping on the rug, and pointing towards the posted picture of the animal when the researcher was showing that page in the song picture book. Children noticed that there was a red balloon on every page and enjoyed finding it, pointing to where it was on each of the pages as they sang along and commenting, “There’s the balloon! It’s so small because it’s so far away.”

**Students engaged in movement when Down by the Bay was sung.** In Group B, children
in both classes sang along with the story but did not do many actions to the words as they were being sung. Both classes had more children participating with actions the second time the story was sung on the first day. Children who were singing and moving were nodding their heads to the beat of the music, rocking in place as they sat on the rug, hooking arms with the person next to them, and swaying.

Although the song picture book was conducive to movement, most children in both of these classes did not initiate many actions on their own. It would be interesting to see what the children’s responses would have been like if the researcher had taught different actions to accompany the words prior to the lesson. There were children who did hand gestures on their own for the words “watermelon”, “grow”, “home”, “moose”, “tie”, and “comb”. Other children saw their actions and imitated them. Children also tapped the rug with their hands or feet as the song was sung.

**Classroom teachers’ perceptions.** An interview was held with each teacher after the vocabulary lessons were taught. Group A teachers were those who taught Class 1 and Class 2, where *Down by the Station* was sung first and *Down by the Bay* was read next. They responded as follows:

Teacher of Class 1: The teacher of Class 1 made the following observations:

- New vocabulary words were presented first with my class by singing with them in *Down by the Station*. Even though the second book, *Down by the Bay*, was read to them, the rhythm of it and the other story having been sung to them may have led the children to sing it in their heads.

- My students liked the *Down by the Station* song and more of my students seemed more focused and engaged when the story was sung with them. Two children did not seem
interested in the song. They say all the time that they do not like music when we sing in
class or when it is time for music class.

- My class listened and attended to *Down by the Bay*. Motivation to learn new words
  seemed to be there for both stories.

- Displaying the targeted vocabulary words with pictures on a bulletin board for both
  stories seemed to involve the class doubly, since they could watch the book and the
  pictures. The children watched the story being read and looked at the pictures that were
  shown and seemed to be involved more with the lessons.

- The visuals were great in both books. Although my students who speak English as a
  Second Language did not participate in the group discussion, I felt that they did try to
  sing along. It was interesting that one child started the movements to *Down by the Bay*
  and so many other children followed her actions and copied them.

Teacher of Class 2: The teacher of Class 2 made the following observations:

- My class seemed more focused looking at the book and the researcher when the song
  picture book *Down by the Bay* was being read to them.

- When the song picture book *Down by the Station* was sung with them, they were not
  looking at the book as much. They were looking at other children in the class, and
  engaged in doing different motions and copying the movements that some of the children
  were doing.

- The books that were chosen and the singing really helped my students. When others
  were singing, some students who usually don’t participate did join in and get more
  involved.

- Repetition is important in helping children learn. Reading or singing the book four times
with them in two days’ time was intense. I’m curious to see if that helps them remember and learn the vocabulary words. It would be interesting to discover if they still knew the words four weeks later or over another period in time.

Group B teachers were those who taught Class 3 and Class 4, where *Down by the Station* was read first and *Down by the Bay* was sung next. They responded as follows:

Teacher of Class 3: The teacher of Class 3 made the following observations:

- My class seemed totally engaged with the new vocabulary words in both books. The discussion was rich. The children seemed motivated to share their ideas and engage in the lessons.
- More was noticed in the illustrations and more was talked about by the fourth time the story was sung or read.
- Children were given the time to share their ideas. Everyone who wanted to speak was given the chance to talk. All comments were valued.
- The repetition of the stories and questions helped them become familiar with the new words. They could respond to what their classmates were observing and saying.
- They seemed to be very comfortable with the stories by the fourth reading/singing.
- When the song picture book *Down by the Station* was read to my class, there was less movement. My students were attentive to both stories and had comments for both sets of targeted vocabulary words.
- When the song picture book *Down by the Bay* was sung with them, students were swaying. After the second singing, my class seemed more comfortable and talkative. They seemed to talk more about the vocabulary words and notice more details in the pictures. They were engaged in the discussion and motivated to share their views with
one another. The discussion was rich as different students’ ideas generated related responses from their classmates. More of their thoughts came out during the second time the song picture book was sung.

Teacher of Class 4: The teacher of Class 4 felt her class was more engaged when *Down by the Bay* was sung, which was not actually the case. From her observations, she stated the following:

- My class has a better attention span in the morning when *Down by the Station* was read to them. They are less fidgety. *Down by the Bay* was sung with them in the afternoon and I find that doing music lessons in the afternoon works best with this class.

- The class seemed to get more excited about the new words after the story had been sung with them. They noticed a lot of details in the story. Having the visuals from the story (the ten targeted words) posted and displayed right there all during the lesson involved the children in pointing and commenting more about what they saw.

- The class participated a lot with both stories, but there was more movement and discussion with the story with music. Children find a rhythm with music. When children are singing together, there’s a sense of community that they are sharing in the same activity together.

**Significant commonalities.** Teachers from all four classrooms commented that both song picture books that the researcher picked for learning new vocabulary words were motivating to their students, held their attention, and promoted participation. Posting the pictures from the song picture books helped students focus on the words to be learned. Students engaged more in discussion after each successive reading and benefited from the repetition that took place. Students who usually do not participate on their own did join in when the song picture
books were sung.

**Significant differences.** The students in Class 4 became more involved than those in the other three classes when the song picture books were either read to them or when they sang along. When the researcher commented to the teacher about her class participating 100% with the lesson being read or sung, she replied, “My class usually attends well because rules for listening are reinforced daily. They often hear me say, ‘You learn so much by listening. You will know what to do if you listen.’”

The teachers in Class 3 and Class 4 teach listening strategies to their students and have expectations for children when stories are being read that are repeatedly reinforced. These include the following: Good listeners look in the direction of the speaker, think about what they are hearing, keep their lips closed and hands and feet quiet, and sit up straight. Both teachers read chapter books daily to their students, which help young children to develop attending and listening skills. Both teachers also emphasize looking at the pictures in books to notice details and to gain information. This additional training by these two teachers made a difference in their classes’ attention to the song picture books and to their responses as shown in Table 6.

**Amount of vocabulary words learned in relation to students’ participation in attending/singing and discussion by group.** The researcher analyzed the data regarding which students participated in the lessons either by attending to or singing along with the song picture books and which students joined in discussions about the targeted vocabulary words. The researcher noted whether the amount of vocabulary words that students learned had a relationship to their involvement and contributions to the lessons. The results by group are as follows:

**Group A: Class 1 and Class 2.** When the post-assessment was done, all of the children
in Group A had learned new vocabulary words. The amount of new words learned varied. The three students in Class 1 and the one child in Class 2 who speak English as a Second Language followed this pattern. For example, one child had previously known four of the words and learned six new ones. On the other extreme, one child had known two words and had only learned one new one. The child who learned the least was not always attending to the lesson and did not participate in the discussion. This may have been because of his limited knowledge of English or because he had a hearing impairment. Even with the visuals and repetition, it might have been difficult for him to participate.

Students who have been identified as being developmentally delayed with language also varied in the amount of new words that they learned. There was not a consistency in whether reading or singing produced better results. Having the story read helped one child learn more words, but having the story sung helped another child learn more words.

For the rest of Class 1 and Class 2, children who learned more new words were more vocal when the targeted words were being discussed and were more attentive to the reading and had joined in when the story was being sung.

It was interesting to note that some students participated in the vocabulary lessons taught by the researcher who usually do not respond during other literacy activities.

**Group B: Class 3 and Class 4.** More children in these two classes participated in the discussion and attended to the lessons. This can partially be attributed to the particular children in the class, since the lessons were presented in exactly the same way to all four classes. The varying focus of the teachers in practicing and reinforcing listening skills is also a factor to consider.

Children in these classes also varied with the amount of new words that they learned.
There did not seem to be a correlation between the children who participated in the discussion and the number of words that were learned. For example, some children who were active participants in the discussions that took place forgot the name of the new word, but could describe its use or tell another attribute about it. Other children heard the new word differently than it was pronounced, such as “lether” for the word “lever”. A couple of students made a connection that a baby kangaroo was a person’s name, but instead of calling it a “joey”, called it a “jack.” One child remembered the person in the class who had answered the question, “What is a joey?” and called a baby kangaroo that child’s name.

**Summary of data collection and analysis.** An analysis of the data, as shown in Table 6, resulted in a different outcome than the researcher’s hypothesis assumed. Students showed more engagement and participation in discussions when the song picture book was read to them. Differences in both the song picture books chosen for the research study and in the method of reading vs. singing along may have accounted for this.

Some possible reasons for the refutation of the hypotheses are as follows:

- Both stories were unfamiliar to students. This particular group of children might prefer to listen and be read to more than singing along to a new story.
- Stories are typically read to them and this is a familiar and comfortable way of learning for them.
- The researcher is a more engaging reader than singer.
- The song picture books may illicit more or fewer movement responses by the nature of their illustrations, words, and experiences to which young children can relate.

The four teachers and researcher observed the following while the students were being taught the new vocabulary words:
• Listening strategies are effective when expected by the teacher and repeatedly reinforced.
• More details of the song picture books were noticed and commented on by students with each successive sing along and reading.
• Children’s observations, comments, and participation helped to engage and motivate other students in the class.
• Children related their own feelings and experiences with both stories when they were either sung or read.

Research Question #3: To what extent do young children, as self-reported, believe that singing along to a song picture book helped them to learn the ten targeted vocabulary words of a lesson?

The third research question is as follows: To what extent do young children, as self-reported, believe that singing along to a song picture book helped them to learn the ten targeted vocabulary words of a lesson? The researcher’s hypothesis was:

When asked, students will answer that they enjoyed reading along to both stories, but that they liked singing along to the story and moving as a way of learning vocabulary words more than without the use of music and singing along.

Student interviews. After the song picture books Down by the Station and Down by the Bay were read/sung in all four classrooms two times each, students met individually with the researcher to share their ideas about the lessons. The following questions from the student interview (Appendix G) were asked:

• We learned new words in both these books. Did you like one book better than the other?
• Which one?
• Why?
• We learned new words in both of these books. One of them I read, and the other we sang together. What did you like better, (a) when I read the book to you or (b) when we sang the book together?

• Why did you like (a) or (b) better?

• We were learning new words when we read or sang these books. Do you think that you learned the new words better by listening to the story or by singing along with the story?

• Why?

The results from the seventy-one children who were initially part of the research study are presented in Tables 7 and 8:

Table 7

Prefeference for One Book Over the Other

<table>
<thead>
<tr>
<th>Preference for a Book</th>
<th>Liked Both Books</th>
</tr>
</thead>
<tbody>
<tr>
<td>59 Students</td>
<td>12 Students</td>
</tr>
</tbody>
</table>

Table 8

Story Liked Best

<table>
<thead>
<tr>
<th>Down by the Station</th>
<th>Down by the Bay</th>
<th>Liked Both Stories</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 Students</td>
<td>35 Students</td>
<td>12 Students</td>
</tr>
</tbody>
</table>

*Story that students liked best and why.* The researcher enjoyed talking with each child individually and hearing their ideas. In everyday teaching situations, time is not often taken to have students reflect on their learning or talk about their preferences. Below is a representative sample of statements that were made by students regarding why they liked one song picture book
more than the other. More than one student repeated some statements about the stories.

*Children who preferred one story over the other:*

**Down by the Station**

- “It had my favorite animals. I love baby animals.”
- “I like trains. My grandmother takes me for rides on the train to Boston. We have fun!”
- “There’s a balloon on every page.”
- “We went to the zoo and they did too!”
- “I liked the danger when they were in the pool with the alligators!”

**Down by the Bay by Raffi**

- “It was silly.”
- “I love that book. I love all the words.”
- “It had funny pictures.”
- “It rhymed and we did movements to it.”
- “It had watermelon in it; my favorite fruit.”

*Children who reported liking both stories equally:*

**Down by the Station**

- “It had a train and an elephant.”
- “I liked the panda.”
- “I liked the balloon.”
• “I liked the ‘Puff! Puff!’ part.”

• “I liked that the train was going to the zoo. We learned the names of baby animals and where they live.”

_Down by the Bay_

• “It was great. It had a bear combing his hair.”

• “It was musical and fun.”

• “I liked that it was really fun and that it had a song.”

• “I liked the silly rhymes.”

• “Did you ever see a whale with a polka-dotted tail? That’s kinda silly, don’t you think?”

Next, the researcher said to students, “We learned new words in both of these books. One of them I read, and the other we sang together. What did you like better, (a) when I read the book to you or (b) when we sang the book together?” Table 9 presents the results of students’ answers.

Table 9

<table>
<thead>
<tr>
<th>Liked Book Being Read</th>
<th>Liked Singing Along</th>
<th>Liked Both</th>
</tr>
</thead>
<tbody>
<tr>
<td>13 Students</td>
<td>57 Students</td>
<td>1 Student</td>
</tr>
</tbody>
</table>

Next, students were asked, “Why did you like (a) having the book read to you or (b) singing the book together better?” The following is a representative sample of the student responses:
Students liked book being read and why.

- “I don’t usually like to sing. I really don’t like singing stuff.”
- “It’s easier for me to think about and understand it better. Singing is more confusing.”
- “I can hear the words.”
- “It’s fun to be read to.”
- “I could learn the words easier because it goes more slower. Singing is faster.”

Students liked singing along to the book and why.

- “It was happy and fun. The whole class sang. I like singing together and doing stuff together.”
- “Singing is cool. I love to sing.”
- “We all got to sing and it sounded a lot better than reading.”
- “It was a really fun song and I like the tune.”
- “It was quicker and I did the movements.”

Students liked both being read to and singing along and why.

- (Shrugs) “I don’t know. I just like to have a story read and I like to sing, too.”
- “We were learning new words when we read or sung these books.”

Next, the researcher asked, “Do you think that you learned the new words better by listening to the story or by singing along with the story?” Table 10 provides the results to this question.
Table 10

<table>
<thead>
<tr>
<th>Learn Better by Listening</th>
<th>Learn Better by Singing Along</th>
<th>Learn Better by Both Listening and Singing Along</th>
</tr>
</thead>
<tbody>
<tr>
<td>35 Students</td>
<td>30 Students</td>
<td>6 Students</td>
</tr>
</tbody>
</table>

Although more students enjoyed singing along with the song picture book, more students felt that they learned better by listening to a story being read to them. Below is a representative sample of comments from students explaining why they felt they learned better by listening, by singing along or by both.

**Students learn better by listening and why.**

- “Listening helps you to learn to read. It is smart and really fun to listen. Good listeners know what to do.”

- “I like listening. You can hear the words more easy ’cause it goes slower. It’s more calm. Singing goes faster and you can’t hear all the words.”

- “It’s easier to understand when people read because you can listen. You go by the pages slower. You can hear the words more easy.”

- “The story is talking to you. To me it’s not rushing like a song. It is loud and clear. Songs are faster and unclear.”

- “Singing is fast. Reading is slow. You can hear it better and remember it better.”

- “I don’t really sing well and I don’t like music.”
**Students learn better by singing along and why.**

- “I’m a better singer than reader!”
- “It’s easy when you sing and just very fun!”
- “I really like singing and we all got to sing together.”
- “Because you can talk!”
- “I feel better when I sing.”
- “We can all hear the words because we’re all singing it.”

**Students learn better by both listening and singing along and why.** Six children responded that they learned better by both listening and singing along, but were unable to say why and just shrugged or said they didn’t know or hadn’t thought about it before. Two children who were able to put their thoughts into words said the following:

- “I learn more when I do both together, listen and sing ’cause I like both.”
- “I like singing a lot, but I also like listening.”

**Summary of student interview findings.** Fifty-nine of the seventy-one students who were part of the research study had a preference for one song picture book over the other. Twelve students liked both song picture books.

Students were able to share their ideas about which book they liked best and why. Thirty-five students liked *Down by the Bay* best while twenty-four students liked *Down by the Station* best. Children who liked *Down by the Bay* enjoyed the silly pictures and rhymes. Students also mentioned that it had a song and was fun. Children who liked *Down by the Station* liked the baby animals, the zoo, and the train and could identify with some of the experiences. Some children were intrigued by the element of danger and looking for a balloon on every page.

When asked if they preferred being read to or singing along with a song picture book, an
overwhelming fifty-seven children responded that they liked singing along. Twelve children enjoyed being read to and one child liked both. Students who liked to sing along mentioned that singing was quick, happy, and fun. They liked the tune, hearing everyone in the class singing together, and doing the movements of a song. Students who liked having the song picture book read to them shared the ideas that it’s fun to be read to and that they could hear the words because reading goes more slowly.

The researcher found the answers to the last question very interesting. Students were asked if they thought they learned new words better by listening to the story or by singing along with the story. Thirty-five students thought that they learned better by listening to a story read to them than by singing along. The answers that students shared were ones that the researcher had not thought of before and were quite astute from kindergarten students. Children commented that listening is smart and helps you learn how to read. They said that a reader turns the pages more slowly and you can hear all the words when they are read. Reading is a story talking to you and you can listen and hear the words loud and clear. The researcher wonders if children don’t realize at times that they’re learning when they sing. Thirty students thought they learned better when a story was sung because they knew how to sing, but not how to read. They could hear the words because the whole class was singing together. Six students felt they learned best when they sang along and when they listened to a story being read to them because they liked doing both.

**Summary of Results**

Data was gathered and analyzed for this study to answer three research questions. This resulted in the quantitative and qualitative findings that have been discussed.
Use of singing along to increase vocabulary acquisition. The first research question was: To what extent does kindergarten children’s singing along with a song picture book increase their vocabulary acquisition? After analyzing the data, a summary of the researcher’s findings is as follows:

- Students learned new vocabulary words when the song picture book was read and when it was sung.
- The number of words that students knew at the post-assessment increased significantly from the pre-assessment with the song picture book being read or sung.
- Students in both Group A and Group B knew more of the ten targeted words in the song picture book *Down by the Bay* than in *Down by the Station* during the pre-assessment.
- Students in Group B knew more vocabulary words before and after the lessons presented than the students in Group A, regardless of whether the song picture book was read or sung.
- Students did not acquire significantly more words when new vocabulary words were introduced with music or when they were singing along with a song picture book. In fact, with most of the twenty targeted words, more words were learned when the story was read.

Student engagement. The second research question was: To what extent does using music and singing along to a song picture book with a focus on vocabulary acquisition increase student engagement? A summary of the researcher’s findings is as follows:

- The repetition of words that were being sung in both the stories reinforced the language of the story, helped children to learn the targeted words, and increased their participation.
- Posting the targeted words for children to look at while the story was being sung resulted
More children sang along each additional time that the song picture book was sung. The level of engagement also increased each time the story was sung. By the fourth time of singing along, most of the children were engaged in moving or doing actions to the new words.

After the fourth time that the story was sung, children noticed more details in the illustrations and their comments became lengthier during the discussion time.

Children saw actions of their classmates in response to the story being sung and copied each other’s movements.

Children learned from each other as they asked questions and other children in the classroom answered their inquiries. Providing time for children to speak to each other increased their engagement.

Some teachers felt that music engaged their students more in the lessons and in sharing their ideas.

Use of singing along to learn vocabulary words. The third research question was: To what extent do young children, as self-reported, believe that using music and singing along to a song picture book helped them to learn the ten targeted vocabulary words of a lesson? A summary of the researcher’s results is as follows:

- Children were able to understand and use words that had not been part of their vocabulary prior to the lessons being taught.
- Although more students enjoyed singing along with the song picture book, more students felt that they learned better by listening to a story being read to them.
• Of the children who felt that they learned better by singing, ideas varied as to why this was. Some of the comments given were:
  - “I’m a better singer than reader!”
  - “It’s easy when you sing and just very fun!”
  - “I really like singing and we all got to sing together.”
  - “Because you can talk!”
  - “I feel better when I sing.”
  - “We can all hear the words because we’re all singing it.”

**Chapter 5: Discussion of Findings; Implications for Educational Practice**

The purpose of this study was to determine if singing along to song picture books increases the acquisition of vocabulary words with kindergarten students. An experiment was designed to answer the following three research questions:

• To what extent does kindergarten children’s singing along with a song picture book increase their vocabulary acquisition?

• To what extent does students’ singing along with a song picture book increase student engagement?

• To what extent do young children believe that singing along to a song picture book helps them to learn new words in a vocabulary lesson?

**Discussion of Findings**

The following discussion attempts to interpret the results from the study in relationship to the theoretical review, literature review, research design, and research findings from the previous chapters. Each research question and hypothesis will be answered as it pertains to the outcomes of the classroom lessons, teachers’ and researcher’s observations, and students’ interview
responses. The significance of the findings and the implications for future educational practice in the teaching of vocabulary with kindergarten students based on the research results will also be presented. Other teachers of young children might consider this study helpful in providing strategies to teach students new words.

**Discussion of the Findings in Relationship to the Theoretical Frameworks**

Two theories informed my research: Developmental Theory and Information Processing Theory. These theories provided direction for the study as well as recent findings about the brain and how music affects the brain in the development of vocabulary. The theories emphasize learning, memory, and language and the connections that young children make as they develop. Music is integrally related to all of these brain processes. Research suggests that music might serve as a significant modality that supports children’s vocabulary acquisition as well as develops other important social and academic learning skills.

**Developmental theory.** In accordance with the developmental theories of Piaget, Vygotsky, and Bruner and of the Neo-Piagetians, Case and Fischer, discussed in Chapter 2, the young children in this research study did learn through repeated opportunities to use language. Students interacted with their peers and shared their ideas about the targeted vocabulary words in the two song picture books, *Down by the Station* and *Down by the Bay*. Vygotsky believed that collaboration with others was a source of cognitive development and that humans develop their intellectual functioning through activity. Students in the research study proved Vygotsky’s belief to be true with their participation in singing along to the song picture books and in attending to them when they were read. Students contributed to conversations about the targeted vocabulary words in each song picture book, added their own ideas to those of their classmates, and presented more detailed descriptions with each successive reading or singing of the story.
Bruner’s theory stresses that active learning is the basis for understanding and that students should be given experiences that connect prior schemata with new information. In this research study, students were provided activities to listen to targeted vocabulary words being read and being sung and to actively participate in their learning through discussion, movement, and song. Students were read to or sang along with song picture books that had topics and pictures about which they had some prior knowledge. Engaging students in different ways to use language taught them more about the new words, helped them to make valuable connections, and helped them to develop their thinking. Children discover relationships between concepts they already know through active engagement and experiences (Clabaugh, 2009).

Students in this research study did relate the targeted vocabulary words in each of the song picture books to their own feelings and experiences. After listening to the song picture book being read or singing along with it, children related their own stories about events that happened in their own lives, such as taking a ride on a train or visiting the zoo. Children were involved in discussing with one another their ideas that were generated from the song picture book being read or sung.

With each additional reading or singing of the story, students noticed more details in the song picture books and more comments were made about the targeted words using complete sentences and rich, descriptive language. The targeted words created a lot of discussion in each class. Children provided different definitions each time the song picture book was sung or read. Children learned from each other and added to each other’s insights during the discussions of the new vocabulary words.

**Information processing theory and brain research.** The information processing theory related to current brain research also served as a basis for this research study. Information
processing studies the flow of information through the cognitive system. Information processing theorists Miller (2002), Torgeson (1986), Stanovich (1986), and Brown (1975) discuss the importance of planning appropriate educational approaches and curriculum strategies to help young children process, remember, and retrieve information. Of interest to the researcher were current studies about the brain related to best classroom practice in teaching young children and curriculum methods to support students’ language development and vocabulary acquisition. The researcher also wondered about the potential benefit of music and singing in the classroom to help young children learn new vocabulary words. Students in kindergarten classes are at various stages of development with their language and vocabulary skills. The individual differences in students’ knowledge and learning styles were evident in this study. Some children were familiar with the targeted words and able to speak about them the very first time the vocabulary lesson was taught while others became more engaged when the lesson was presented the second, third, or fourth time. It is evident that all the kindergarten students benefited from the four times that they sang along with or had the song picture books read to them, since they were able to learn many of the new words that were taught to them during the vocabulary lessons.

From the data that was collected, students benefited from combining the curriculum strategies of displaying the ten targeted words from each song picture book, reading or singing the story four times, and providing opportunities to talk about the new vocabulary words and share their ideas. Students remembered what they had learned. Of the 69 students in the research study, 59 (75%) knew at least 9 of the 10 targeted vocabulary words in each book independent of whether it was read or sung. Of the 45 students who knew only 4 or fewer words in *Down by the Station*, all but 6 of the students (87%) learned at least 5 new words. Of the 14
students who knew 4 or fewer words in *Down by the Bay*, all but 2 (85%) learned at least 5 new words.

The developmental theory and the information processing theory are both related to current brain research, which discusses the effects of enriched classroom environments on behavior and brain development. Findings from the current neuroscientific research can provide us with important insights into how children learn and have strong implications for classroom practice. Studies indicate that ideal classroom settings provide students with meaningful opportunities to relate what they are learning to what they already know. Learning is enhanced when the environment allows students to discuss their thinking out loud and to bounce their ideas off their peers (Caine, 1997). The researcher designed the vocabulary lessons to provide students with optimal learning. The song picture books chosen had familiar experiences and items that were of interest to young children such as trains, animals, silly pictures, and balloons. The researcher provided an atmosphere for this study in which students could share their ideas with one another and learn from each other. The findings from this study supported the current brain research that students involved and engaged with activities that have meaning strongly increase their learning capabilities.

One result from brain research is the acknowledgement that no two brains are alike and that no two children learn in an identical way. Children need to be taught how to think for themselves. One way to do this is to allow children to talk to one another and to question and teach each other. One has to understand a concept to teach it (Diamond, 1998). The positive findings from this study of young children learning targeted vocabulary words proved the advantage of providing children time to discuss presented information among themselves. Another outcome that has been addressed by brain researchers is the role that emotion plays in
learning. The stronger the emotion connected with an experience, the stronger the memory of that experience (Le Doux, 1996). When emotional input is added into a learning experience, that experience is made more meaningful. The brain deems the information more important and retention is increased. The researcher wondered if music would have that effect on the students in the study and if they would acquire more vocabulary words when music and singing along was introduced.

Effects of music. Howard Gardner challenges teachers and students to be creative in teaching and learning and to present curriculum material in a way that is relevant to the individual child (1999). Music is one of the multiple intelligences that he feels can be used to enhance learning, including helping young children gain knowledge of vocabulary words and remember information that is presented to them. Woodall and Zeimbroski (2002) agree that music plays an important role in language and literacy development. Neuroscientists are studying and scanning activity in the brain, where music is experienced, to try to understand what neurons music triggers and how music can alter our biochemistry (Zimmer, 2010).

The researcher encouraged students in four kindergarten classrooms to sing along to a song picture book as a way to learn new vocabulary words. Social connections were encouraged as the children in each class sang along together and conversed together about the targeted words they were learning. The rhythm of the text and the rhymes presented in both *Down by the Station* and *Down by the Bay*, as well as the colorful illustrations of animals and familiar experiences that were shown to students as they sang along, were motivational and meaningful to them and helped them to learn the targeted vocabulary words.

Discussion of the Findings in Relationship to the Literature Review

The questions that guided my literature review were as follows:
1. How does vocabulary develop in young children?

2. What are best practices for teaching vocabulary to young children?

3. How does music enhance student learning?

4. How does music affect the brain and the development of vocabulary?

5. How can song picture books support vocabulary development?

The research study provided answers to each of these questions as follows:

**Vocabulary development in young children.** The sixty-nine children who were part of the research study had different levels of language skills, demonstrated in their ability to respond when asked to describe each of the twenty-targeted words in *Down by the Station* and *Down by the Bay*. These levels of skill varied from children responding with one or two words, to short phrases, to complete sentences. There were only a few students who did not respond at all during the four vocabulary lessons. These were children who spoke English as a Second Language. They attended to the lessons, but did not raise their hand to answer questions about the targeted words or make comments about their classmates’ answers.

Evidence documents that children enter school with substantial disparities in the depth and breadth of their vocabulary knowledge. This has been confirmed by data collected over fifteen years at the school where the researcher teaches as well as by studies done by others interested in this significant gap already present with kindergarten students, such as the National Reading Panel (2000) and the Early Childhood Head Start Task Force (2002). This was apparent in this research study. The number of words that students knew before and after the vocabulary lessons were taught did vary. There were targeted words used in the study that were part of many kindergarteners’ vocabularies while other targeted words were not. It was interesting to
note which words were already part of the kindergarteners’ vocabulary and which words were new for most of the students. Words in *Down by the Station* such as “station”, “lever”, “calf”, “chick”, and “cub” were not known to many of the students before the vocabulary lessons, while words such as “tiger”, “kangaroo”, and “flamingo” were known. Words in *Down by the Bay* such as “bay”, “llamas”, and “goose” were not known by many students before the vocabulary lessons, while “watermelon”, “moose”, and “whale” were known. Table 4 presented the data indicating how many students in each group knew each word prior to and after each song picture book was either sung along with or read. The research study results showed that the same number of students learned some of the targeted vocabulary words whether the story was read or sung.

The findings from this study concur with the research found in the literature review that intensive interventions with young children must begin early in their schooling, when the highest rate of vocabulary growth occurs, and must employ evidence-based practices that reduce learning gaps in language development (Farkas & Beron, 2004). Programs need to provide a deliberate attempt for frequent practice, multiple exposures to words, and systematic opportunities to use vocabulary. The researcher and the four classroom teachers whose students were part of this research study noted that young children do learn vocabulary words through active participation, use in meaningful contexts, and repetition. To facilitate vocabulary development, teachers need to examine the way they interact with young children.

The findings from this study show how necessary meaningful language interaction is for children's learning. Language is supported through an adult and child talking with one another. Children who are asked open-ended questions, encouraged to expand on their language, and provided with feedback to their comments and questions have more opportunities to talk and use
language, and therefore are more likely to develop language. Children learn language, and particularly vocabulary, by being exposed to it in meaningful contexts and by having to use it in purposeful and functional ways (Adger, Hoyle, & Dickinson, 2004).

**Current practices used in schools for teaching vocabulary to young children.** The teaching methods used in this research study for helping young children learn new vocabulary words were ones that engaged them actively in listening, singing along, sharing ideas with their classmates, and movement. The researcher designed the vocabulary lessons by using the following methods found in the literature review that had been regarded as best practices for helping young children to learn vocabulary: accessing prior knowledge, building upon ideas that are familiar, and creating new experiences for understanding. The lessons in this study had children participating and actively involved, which helped to reinforce what was being taught. Students sang and acted out targeted unknown vocabulary words and became engaged in their learning, which helped them to remember definitions and word meanings. The researcher found that repeating the song and activity a few times, as suggested by Medina (2002), supported understanding of the meaning of the words.

Children need to be guided in their construction of knowledge. The researcher found that reading and singing along with the song picture books provided students opportunities to explain the vocabulary words in the context of meaningful stories. Children shared their ideas and experiences orally with others as a way to learn the new vocabulary words. By listening to their own talk, as well as to the talk of others, children developed their understanding of themselves and their world. Mercer wrote, “individually and collectively, we use language to transform experience into knowledge and understanding” (1995). Posting the vocabulary words in the
classroom with the same picture found in the story reminded the children of the new vocabulary words that were being presented.

**Use of singing along to enhance student learning.** Children sang along with the song picture books to learn the new vocabulary words. The researcher thought that the singing modality would enhance student learning and help them learn more new vocabulary words. Table 2 showed the results for the sixty-nine students remaining in the research study, broken down by group, book, and whether the story was read to or sung with the students.

The number of words that students knew after reading or singing along with the song picture books increased for both groups. Group A went from knowing an average of 3.7 words to an average of 8.8 words in *Down by the Station* after singing along with the song picture book, and went from knowing an average of 5.1 words to an average of 9.3 words in *Down by the Bay* after reading along with the song picture book. Group B went from knowing an average of 4.5 words to an average of 9.1 words in *Down by the Station* after reading along with the song picture book, and went from knowing an average of 6.1 words to an average of 9.4 words in *Down by the Bay* after singing along with the song picture book.

To determine whether there was a significant difference between groups in number of words acquired either reading or singing along with a song picture book, an analysis of covariance test was used. The ANCOVA was used to determine whether a group acquired more words singing along with a song picture book or having a book read to them, using the number of words known prior to reading or singing along as the covariate. In short, the number of words known after either being read to or having sung along with a song picture book was not statistically significant for either group or book. For *Down by the Station*, there was no significant difference between Group A and Group B, $F(1,66)=0.00$, $p=.987$. For *Down by the*
Bay, there was also no significant difference between Group A and Group B, $F(1,66)=1.99, p=.163$. Students in both Group A and Group B learned new vocabulary words whether the song picture book was read or sung.

Singing along was naturally integrated in the language lessons presented for this research study to develop and to extend vocabulary and comprehension skills. The results of the study showed that students did learn the targeted words presented when singing along was part of the lesson. The use of singing along helped young children listen and attend to the song picture books, engage them in movement and sharing their ideas with their classmates, and remember the words presented.

**Music, brain research, and vocabulary development.** The researcher was interested to know the effects of music in relation to current brain research and the difference it would make for young children in developing their vocabulary. The brain generates new neural connections and pathways when it is challenged with learning opportunities. This creative power of the brain is released when human beings are in environments that are positive, nurturing, and stimulating and that encourage action and interaction. The researcher presented the targeted vocabulary words through the use of music because brain research indicates that music can positively influence brain performance and cites music as being essential to academic and emotional development. The findings from the research study indicated that kindergarten students did learn new vocabulary words through the use of music. Looking at Table 5, 100% of all students learned at least three of the ten targeted words from each song picture book when the story was sung. The percentage of students in both groups learning the targeted words was significant when a song picture book was sung to them four times.
**The use of song picture books to support vocabulary development.** The researcher decided to use song picture books as part of this study because from her past teaching experiences, kindergarten students enjoy the stories, attend well when they sing along with them, and become actively engaged in their learning. Stephen Krashen (1989) has found that meaning is critical to the acquisition of vocabulary. In this research study, the repetition of the words in the song picture books, the illustrations, and the opportunities to act out and move in ways that the new vocabulary words suggested all provided students with extra-linguistic support and helped them to acquire new words. Singing along with the song picture books had a positive effect on the kindergarten students and supported their vocabulary development. Students and teachers involved with this study both spoke about the pleasure of singing together as a community and how much fun singing can be.

Some comments that students made were as follows:

- “It’s easy when you sing and just very fun!”
- “I really like singing and we all got to sing together.”
- “It was happy and fun. The whole class sang. I like singing together and doing stuff together.”
- “Singing is cool. I love to sing.”

Some comments that teachers made were as follows:

- The class seemed to get more excited about the new words after the story had been sung with them. They noticed a lot of details in the story. Having the visuals from the story (the ten targeted words) posted and displayed right there all during the lesson involved the children in pointing and commenting more about what they saw.
- The class participated a lot with both stories, but there was more movement and
discussion with the story with music. Children find a rhythm with music. When children
are singing together, there’s a sense of community that they are sharing in the same
activity together.

The results from this research study showed a significant gain in the number of targeted
words young children learned when song picture books were sung with them as shown in Figure
1 and Tables 2-5. Developmentally appropriate strategies for teaching young children new
vocabulary words made a difference in their learning.

**Discussion of the Findings in Relationship to the Research Design**

The design of this research study was focused around three research questions and
hypotheses. Each research question will be answered and each hypothesis will be discussed in
relation to the outcomes of the classroom lessons, the teachers’ and researcher’s observations, or
the students’ interview responses. The researcher’s first research question and hypothesis was:

**Research Question # 1: To what extent does kindergarten children’s singing along with a
song picture book increase their vocabulary acquisition?**

**Hypothesis A.** *Students who are introduced to vocabulary words with a song picture
book through the use of music and singing along will acquire more vocabulary words than
students introduced to vocabulary words in a song picture book without the use of music and
singing.*

Classroom lessons were designed so that students would have a song picture book read to
them and a different song picture book sung with them. Students were divided into two groups,
Group A and Group B. Group A consisted of Class 1 and Class 2. Group B consisted of Class 3
and Class 4. There were 37 students in Group A and 34 students in Group B. Two students from
Group A, identified as children with significant special needs and spending most of their school
day in a substantially separate program, learned only one new word whether the song picture book was read or sung and their scores were eliminated from the analysis. Group A then consisted of 35 students.

Students were assessed before and after the vocabulary lessons were presented on twenty targeted vocabulary words; ten words from *Down by the Station* and ten words from *Down by the Bay*. Figure 1 showed that 71 students involved with the research study learned a different number of the targeted vocabulary words when the song picture books were read to them than when they sang along. Results from the study showed that of the 69 students left in the study, all acquired a significant amount of vocabulary words when singing along with a song picture book. The new words learned varied by group. After singing along with the song picture book *Down by the Station*, Group A went from knowing a mean of 3.7 words to a mean of 8.8 words. After singing along with the song picture book *Down by the Bay*, Group B went from knowing a mean of 6.1 words to a mean of 9.4 words. The mean number of words known pre- and post-singing along with each song picture book by class was as follows:

- Group A, *Down by the Station* sung, Class 1 went from 3.3 words to 8.8 words
- Group A, *Down by the Station* sung, Class 2 went from 4.1 words to 8.8 words
- Group B, *Down by the Bay* sung, Class 3 went from 5.8 words to 9.0 words
- Group B, *Down by the Bay* sung, Class 4 went from 6.3 words to 9.6 words.

- Of the 69 students, 59 (75%) knew at least 9 of the 10 targeted vocabulary words in each book after the lessons, independent of whether the book was read or sung.

The study showed different results than the researcher’s hypothesis predicted. Students who were introduced to vocabulary words with a song picture book through the use of music and singing along did not acquire more vocabulary words than students introduced to vocabulary
words in a song picture book without the use of music and singing along. As shown in Tables 2 and 3, there was no significant difference in young children learning the targeted vocabulary words when the song picture book was sung along with or read.

This result surprised the researcher, who assumed that since many students seem to enjoy singing in their learning process that they would naturally learn more through that modality. In fact, when students were interviewed about their preference for having a story read to them or singing along, 57/71 students, as shown in Table 9, preferred singing along better. However, more students believed that they learned better when they listened to a story. Students remarked that they could understand the words better when the song picture book was read. They could hear the words and see the pictures better because the researcher was going slower when she was reading. These comments by students were valuable insights to the researcher. In future lessons, the researcher will adjust her teaching so that all students can understand the words that are being presented and will consider both reading and singing along as valuable ways for young children to learn.

**Research Question # 2: To what extent does singing along to a song picture book with a focus on vocabulary acquisition increase student engagement?**

**Hypothesis B.** Classroom teachers will observe more engagement among students when learning new vocabulary words in a song picture book when music and a sing along are included as part of the lesson than without. Teachers will notice that children are attending to the story, answering questions asked about the targeted words, and actively participating in the story by singing the words to the song, moving to the music, and/or acting out the words to the vocabulary lesson when music and singing along are used as a learning modality.

The four teachers whose students were part of this research study completed observation
sheets (Appendices, H and I) as *Down by the Station* and *Down by the Bay* was either read or sung in their classrooms. For each of the four times that the lesson was presented, the teachers recorded which students attended to the song picture books when they were read and sung, which students answered questions about the targeted words, and which students actively participated in the stories by singing along, moving, or acting out the words in the vocabulary lessons. Teachers were also interviewed about their students’ participation after the lessons took place (Appendix J).

As shown in Table 6, teachers did notice children attending to the story, answering questions asked about the targeted words, actively participating in the story by singing the words to the song, moving to the music, and/or acting out the words to the vocabulary lesson when music and singing along was used as a learning modality. In particular, Class 4 had 100% participation in singing along on the second day that *Down by the Bay* was sung with them both times the lesson was presented. However, classroom teachers did not observe more engagement among students when music and a sing along was included as part of the lesson than without. In fact, the very first time that the song picture book was read or sung, all teachers indicated more attention when the story was read. The second time that the song picture book was read or sung there was less of a difference in the number of students who were attending. Each of the four times that either song picture book was read or sung, more students attended when the story was read.

The researcher suggests that the reason fewer students were less attentive the first time the song picture book was sung is because the tune was unfamiliar to the students. Teachers recorded students as attending who were singing along with the song or looking at the researcher as she read the story. The words in the song picture books were very repetitive and some...
children began singing along almost immediately. Other children listened, but did not sing along until the second, third, or fourth time the lesson was presented. Some children did not sing along at all. Later in the study, when students were interviewed, some of their answers provided information about why they may not have sung along. Students responded that they couldn’t understand the words when they were sung because the song went too fast. Other students remarked that they don’t like to sing. For students who feel that singing is too fast, it might be helpful for the teacher to present the lesson first by reading the words so that they can be better understood by all. The researcher wonders if some children might have responded differently to the song picture books if the stories that were read or sung along with had been presented in their music classes. Maybe if the expectation was that there would be singing, the students’ attention, responses, and participation with the song picture books would be increased.

Concerning students answering questions when the song picture books was read to them or when they sang along, teachers’ observations varied by class. Class 1 participated more in discussion when the song picture book *Down by the Bay* was being sung with them. More children in Classes 3 and 4 participated in answering questions about the ten targeted words each time that the song picture book *Down by the Station* was read to them than when *Down by the Bay* was sung with them. With all classes, more discussion took place on Day 2, the fourth time that the new words were presented, whether the song picture book was read or sung.

Again, the children involved in the study and their responses to the lessons presented varied from classroom to classroom. Each classroom was made up of different individuals with varied personalities and diverse ways of learning and interacting with each other. In this research study, Class 4 responded unlike the other three classes in how all the students attended to the lessons, answered the questions about the targeted words, and engaged in movements
whether the song picture book was read to or sung with them. Class 4 was a talkative, active
group of children whose ideas stimulated each other to remember and share more information.

Regarding students engagement in movements, once children began to move in response
to the song picture books, their actions continued at the same rate or increased each time the
lesson was presented. Some groups of children were not as active as others or did not respond
with movement when stories were read to or sung with them. This was shown by Class 2, which
did not have many children engaged in a lot of movement either time that a song picture book
was read to or sung with them.

The teachers and the researcher noticed that if one child started moving to the song
picture book, other children would watch them and then imitate their actions. One child in Class
1 was able to engage many students to follow her actions and copy what she did as the song
picture book *Down by the Bay* was read. The researcher did not teach any movements to the
song picture books as part of this research study. Nor did the researcher say to the students, “As
I read the story or as we sing along to the story, you may act out the movements of the animals or
move to the pictures.” The students initiated any actions that occurred themselves, as a reaction
to what they were hearing. The results of students engaged with movement might have increased
if the researcher had taught motions to go along with each targeted vocabulary word or given
verbal permission to act out the words as part of the lessons presented.

Observations made by each classroom teacher when interviewed after the lessons had
taken place (Appendix J) confirmed that students were attending to the lessons, answering
questions asked about the targeted words, and actively participating in the story by singing the
words to the song, moving to the music, and/or acting out the words to the vocabulary lesson
when music and singing along is used as a learning modality. However, the part of the
researcher’s hypothesis that predicted that classroom teachers will observe more engagement among students when learning new vocabulary words in a song picture book when music and a sing along is included as part of the lesson than without was not proven true by this research study. Two teachers felt that more of their students seemed more focused and engaged and answered questions with more details when the song picture book was sung with them, but when the data was analyzed this was not the case. Another teacher felt her students attended better and seemed more involved with the lessons when the song picture books were read to her class. Another teacher felt that both modalities were motivating to her students and that they participated with the reading and singing along equally well. In these interviews, the teachers gave their best insights about what they saw from their students when the lessons were presented. As with any interviews, questions could arise about each teacher’s individual bias toward lessons taught with or without the use of music and singing along, stemming from her interest in music and the amount of singing she uses in her own teaching.

The results of the research study regarding the first part of the hypothesis that classroom teachers will observe more engagement among students when learning new vocabulary words in a song picture book when music and a sing along is included as part of the lesson than without was different than the researcher expected. Students in this study showed more engagement when the song picture book was read to them. In a future study, changing the setting of where the lesson is taught, providing different verbal directions and expectations to the students, and teaching specific actions for students to perform for targeted vocabulary words might result in an increase of engagement when music and a sing along are included as part of a lesson.

Research Question # 3: To what extent do young children, as self-reported, believe that singing along to a song picture book helped them to learn the ten targeted vocabulary
words of a lesson?

**Hypothesis C.** *When asked, students will answer that they enjoyed having both stories read to them, but that they liked singing along to the stories and moving as a way of learning vocabulary words more than without the use of music and singing along.*

Students’ interview responses provided the researcher with relevant information about how young children prefer to acquire new vocabulary words. The responses that students gave about the lessons were simple but powerful indicators of this group of children’s preferences and why. Students did answer that they liked having both song picture books presented to them. As shown in Tables 7, fifty-nine students had a preference for one of the books and twelve students liked both. Table 8 indicated that thirty-five students liked *Down by the Bay* whether it was read or sung to them and twenty-four students liked *Down by the Station*. Twelve students liked both stories. Students’ preferences centered on experiences with which they could identify in the song picture books, such as train rides, going to the zoo, love of animals, liking rhymes, favorite fruits, etc.

Students proved the third hypothesis to be true. In Table 9, fifty-seven students indicated that they liked singing along together to learn new words better than having a book read to them. Thirteen students liked having a book read to them to learn new words and one student liked both ways of learning.

When asked why, some students responded that they liked singing along because “It’s happy and fun and everyone is singing together,” and because “we all got to sing and it sounded a lot better than reading.” Students who liked to sing along also mentioned that singing was quick, cool and something that they loved to do. They liked the tune, hearing everyone in the class singing together, and doing the movements of a song. Students who liked having the song
picture book read to them shared the ideas that it’s fun to be read to and that they could hear the words because reading goes slower.

What was interesting to the researcher was that even though more students enjoyed singing along to learn new vocabulary words, thirty-five students felt that they actually learn new words better when they listen than when they sing along. Thirty students answered that they learned better by singing along and six students felt that they learned better by doing both, as shown in Table 10.

The researcher wondered if students might not realize that they are learning when they are singing and having fun. Teachers might reinforce this notion with instructions about listening; some students’ ideas mirrored what teachers might have said to them, such as, “Listening helps you to learn to read. It is smart and really fun to listen. Good listeners know what to do.” For other students, having a story read to them might align best with their learning style as reflected by the ideas of these students: “I like listening. You can hear the words more easy ’cause it goes slower. It’s more calm. Singing goes faster and you can’t hear all the words,”; “It’s easier to understand when people read because you can listen. You go by the pages slower. You can hear the words more easy”; and “The story is talking to you. To me it’s not rushing like a song. It is loud and clear. Songs are faster and unclear.” Students who felt that they learned new words better by singing along with the story rather than listening to a story being read answered, “I’m a better singer than reader!”; ”Because you can talk.”; ”We can all hear the words because we’re all singing it.”

Significance of the Findings

This practice-based research employed both quantitative and qualitative data and appropriate quantitative and qualitative analyses. This mixed method research approach was
chosen in order to determine whether the way that new vocabulary words are presented to
kindergarten students makes a difference in their learning. As a result of conducting this
research study, several key findings have been realized:

• Kindergarten students acquired a significant amount of vocabulary words when singing
  along with a song picture book. However, there was no significant difference in young
children learning targeted vocabulary words when a song picture book was sung along
with or read to them. Singing along and reading, when used together, have a strong
impact on young children’s vocabulary acquisition.

• Singing along provided a way for children who usually don’t participate verbally to feel
  comfortable to join in and become part of the group. No one child was singled out when
students sang along together with a song picture book.

• Repetition is important in helping children learn. Reading or singing along with the book
  four times in two days was a significant factor in kindergarten students acquiring targeted
vocabulary words.

• When given the time and opportunity to share their ideas, kindergarten students taught
  each other and the teachers information about the targeted vocabulary words, by their
own observations and remarks.

• The use of posting visuals for the targeted vocabulary words aided students in learning
  the new words.

Conclusion

Based on the theoretical frameworks, literature review, statistical findings, and interviews
from the four classroom teachers and students, several implications can be made by the
researcher concerning vocabulary development, music, and the use of song picture books in classrooms with young children.

First, more research needs to be done in the area of vocabulary development. It is an essential component of reading, but needs a specific focus, measurable objectives, criteria for word selection, a scope and sequence, and explicit teaching suggestions.

Second, professional development in the area of vocabulary development would benefit teachers who want to be more effective in helping young children develop vocabulary skills. An instructional regime that provides teaching strategies for frequent practice, multiple exposures to words, and systematic opportunities for use of those words is necessary. To learn new vocabulary words students need to do more than repeat the word after the teacher or hear the word once in a story. Strategies that have been proven to develop vocabulary include using new words in meaningful contexts, providing opportunities for children’s active participation, and the use of concrete props.

Third, to foster language and vocabulary development, the nature of teacher-child interactions and the way in which vocabulary is presented and reinforced are critical factors in children’s learning (Penno, Wilkinson, & Moore, 2002). Teachers need to present and explain words and purposively use the words throughout the day in multiple and different classroom activities. Children need to hear, understand, and use vocabulary words in meaningful ways. Opportunities to scaffold children’s language are often natural, unplanned events. Conversations that support children’s language and develop vocabulary are often part of the natural rhythm of the classroom, interwoven with children’s individual interests and observations.

In this research study, students were provided activities to listen to targeted vocabulary words being read and being sung and to actively participate in their learning through discussion,
movement, and song. Students were read to or sang along with song picture books that had topics and pictures with which they had some prior knowledge. Engaging students in different ways to use language taught them more about the new words, helped them to make valuable connections, and helped them to develop their thinking.

Fourth, research has shown that developing children’s vocabulary skills can be challenging. It is the quality and skill of the teacher who is implementing the curriculum that will have the most significant impact on children (Darling-Hammond & Bransford, 2005). One of the primary problems is that teachers do not typically talk and engage young children in conversations that expand and develop their language (Dickinson, 2002). Specifically, teachers tend to spend a good deal of time giving directions and, when discussing content, often ask children questions that require only one or two words in response, while also providing just one or two words in response to children’s questions and ideas (Zucker, Justice, Piasta, & Kaderavek, 2010). Changing how teachers talk with children can be difficult (Bond & Wasik, 2009). For example, in their efforts to manage many children at once, teachers must engage in a considerable amount of “business talk” in classrooms, telling children what to do and what not to do (Dickinson & Caswell, 2007). Sometimes, this managerial conversation decreases opportunities for more meaningful discussion about content. Also, teachers may not be comfortable with children talking. A quiet classroom is often equated with a well-managed, organized, “good” classroom. The result is that children have limited opportunities to learn and use language in meaningful ways.

Music and song picture books support emergent literacy by building on familiarity and enjoyment, providing repetition, expanding vocabulary, teaching story structures, promoting critical thinking, and fostering creative expression (Jalongo & Ribblett, 1997). Scholars agree
that music integrated into the curriculum is beneficial for students. Students’ brains retain
information when exposed to music as part of the learning experience. Research suggests that
music can actually alter brain waves in young children and make the brain more receptive to
learning. Stimulating the brain through multi-sensory learning and integrating music into the
curriculum can be helpful to students. Studies show that music fosters communication, wellness,
and bonding across all cultures. Music is one multiple intelligence that enhances learning,
including helping young children learn basic vocabulary and remember information that is
presented to them. Singing in learning is encouraged as a way to develop better language, social,
listening and memory skills as well as to build confidence. Singing develops a child’s self-
esteeem, promotes teamwork irrespective of age, gender, and background, celebrates diversity,
facilitates self-expression, and is just plain fun. These beliefs are confirmed by statements made
by the students in my research study:

- “I’m a better singer than reader!”
- “It’s easy when you sing and just very fun!”

This research study provides relevant data relating to current conversations on the topics
of vocabulary, music and brain research, use of song picture books with kindergarten students,
and implementation possibilities in the early childhood classroom. The study highlights some of
the potential benefits for kindergarten students in singing along with song picture books and
ideas for actual implementation to increase vocabulary acquisition. However, further research is
needed to develop vocabulary curriculums with specific methods for teaching young children
integrating best teaching practices for helping them learn and remember new words.
References


Appendix A

Permission Letter to Superintendent of Schools/Building Principal

April 14, 2011

Dear June and Jess,

I am currently working on my doctoral dissertation at Northeastern University. My research topic study is Vocabulary Acquisition with Kindergarten Children Using Song Picture Books.

I am requesting your permission to collect data at the Curran Center during my literacy lessons, to assess students’ vocabulary, and to interview both teachers and students about the use of music in learning new words.

In this research study, I plan to pre-test and post-test four classrooms of students, about eighty-five children, using vocabulary words from two song picture books. Lessons will be presented with and without the use of music. Teachers in the classrooms will be given an observation tool to use to record how students respond to the lessons with and without the use of music. Students will also be interviewed about what they liked about the lessons.

It is my hope that this study will demonstrate the importance of using music when planning vocabulary lessons with young children and also provide others with ideas for helping young children acquire vocabulary.

Should you have any questions regarding this study, please contact me directly. Thank you in advance for your time.

Sincerely,

Mary Joyce
Curran Center, Dedham, MA.
Kindergarten Special Needs Teacher
Doctoral Candidate, College of Professional Studies
Northeastern University, Boston, MA.
Appendix B

Dedham Public Schools
Home of America’s First Tax-Supported Free Public School

June M. Doe
Superintendent
Fax No. (781) 326-0193

Michael A. La Francesca
Assistant to the Superintendent for Business and Finance
Fax No. (781) 326-8913

Cynthia A. Kelly
Assistant Superintendent for Curriculum, Instruction and Assessment
Fax No. (781) 320-8798

Kathy E. Gaudreau
Director of Special Education
Fax No. (781) 320-8798

April 14, 2011

Ms. Andrea B. Goldstein, Coordinator
Human Subject Research Protection
Northeastern University
960 Renaissance Park, 360 Huntington Avenue
Boston, MA. 02115-5000

Dear Ms. Goldstein,

I give my permission for Mary Joyce, Kindergarten Special Needs teacher at the Curran Center in Dedham and Northeastern doctoral candidate, to conduct her research project at the Curran Center. I am aware of her interest in using music with Kindergarten students to help them acquire vocabulary words.

Please feel free to contact me if you have any further questions about students’ involvement in Mary Joyce’s research study.

Thank you.

Sincerely,

June Doe
Superintendent of the Dedham Public Schools

The Dedham School System does not discriminate on the basis of age, race, color, sexual orientation, religion, national origin or handicap in its educational activities or employment practices.

Administration Building, 100 Whiting Avenue, Dedham, MA 02026 • (781) 326-5622 • www.dedham.k12.ma.us
Appendix C

Permission from Building Principal (via prepared letter)

April 2011

Dear Parent/Guardian:

The Curran Center kindergarten special needs teacher, Mrs. Mary Joyce, has asked permission to conduct a study in Mrs. Amy Laboissonniere’s, Miss Marie Lynch’s, and Mrs. Julie Morrison’s full day kindergarten classes and in Mrs. Janice O’Connor’s half-day morning kindergarten class as part of her Northeastern University Doctor of Education Program. Students will participate in four vocabulary lessons using song picture books. A pre-test will be given to the students before the lessons and a post-test after the lessons to determine if the use of music and active participation makes a difference in a child’s learning of vocabulary words.

Benefits to the participants, as a result of the study, include listening to two different stories and being introduced to new vocabulary words. The information gained from this study could prove beneficial to young children at the Curran Center in future years.

There will be no penalty to your student if you decline the invitation for your child to participate in the research portion of the study. All information acquired from the study will be kept confidential. Activities will take place at the Curran Center during the month of May.

Please complete the attached form indicating your permission for your son/daughter to take part in this study. We ask that all completed forms be returned to your child’s teacher by the end of this week.

If you have any questions regarding the study or your child’s participation, you may contact Mrs. Joyce.

Sincerely,

Jessica Hammond, Principal
Parent Consent Form-Full research study

Northeastern University, College of Professional Studies
Investigator Name: Mary Joyce, Kindergarten Special Needs teacher, Curran Center
Title of Project: Vocabulary Acquisition With Kindergarten Children Using Song Picture Books

We are inviting your child to take part in a research study. This form will tell you about the study, but the researcher, Mrs. Joyce, has explained it to your child during a portion of his/her literacy class. Both you and your child may ask the researcher any questions that you may have. When you are ready to make a decision, you may tell the researcher if you want to participate or not. Your child does not have to participate if he/she does not want to. If he/she decides to participate, the researcher will ask you to sign this statement and will give you a copy to keep.

Why is my child being asked to take part in this research study?
We are asking your child to be in this study because he/she is a kindergarten student who is in one of the inclusion classes in which I teach literacy lessons.

Why is this research study being done?
The purpose of this research study is threefold:

- To determine whether the use of students’ singing with a song picture book increases children’s vocabulary acquisition.
- To determine if singing along to a picture book with a focus on vocabulary acquisition increase student engagement.
- To determine if young children, as self-reported, believe that singing along to a picture book helped them to learn the targeted vocabulary words of a lesson.

What will my child be asked to do?
If your child decides to take part in this study, he/she will be randomly assigned to Group A or Group B according to his/her classroom teacher. He/she will be asked to participate in the following activities:

- Activity #1 (research procedure): Students in the study will be assessed on the ten targeted vocabulary words in Set 1 and the ten-targeted vocabulary words in Set 2 before hearing the stories, *Down by the Station* and *Down by the Bay*. For the pre-test, the researcher will work with each student individually to collect the data. The actual pictures from the books will be shown to each student in order of their appearance in the book. Students will be asked to name each of the ten pictures from *Down by the Station* and each of the ten pictures from *Down by the Bay*.

- Activity #2 (routine procedure): Group A students will be shown the ten-targeted words in the story *Down by the Station* and asked to repeat them. Next the students will listen to the song picture book, *Down by the Station*, being sung. Students will be asked to repeat the vocabulary words again and then to answer
questions about what each word means. The song picture book will be sung again. Group B students will follow the same procedure, except after the ten-targeted words are shown, the book will be read to them. Students will be asked to repeat the words and then will be asked questions about what each word means. Children will then be asked to listen to the story again. The same activity will be presented to each group the next day.

- Activity #3 (research procedure): Group A and B will be assessed on the ten-targeted vocabulary words from the story.

- Activity #4 (routine procedure): A different song picture book, *Down by the Bay*, will be read or sung by the researcher with the students. Group A students will hear the story read this time and Group B students will hear the story sung. The same procedure of listening to the targeted words and repeating them will be used. Students will be asked what each word means. Students will hear the story being read or sung again. The same activity will be presented to each group the next day.

- Activity #5 (research procedure): Students will be assessed on the ten-targeted words from the second story. Students’ comments will be collected through a brief set of interview questions following their participation in the two vocabulary instruction lessons with the two different song picture books. Students will be asked to reflect on the lessons and share their ideas on which method of learning they enjoyed the most and why.

**Where will this take place and how much of my child’s time will it take?**

All activities associated with this research study will take place at the Curran Center. Assessment of the vocabulary words and the brief interview will take a few minutes and will take place at a table right outside your child’s classroom. The vocabulary lessons will be presented during the time that I teach a literacy lesson in your child’s classroom. There will be four lessons of about thirty minutes each.

**Will there be any risk or discomfort to my child?**

The Curran Center kindergarten students participating in this study will incur no risk as a result of the study. All information acquired from the assessments and interview questions will be kept confidential. No psychological harm, financial, social, or legal damages as well as physical risks will be incurred during this study.

**Will my child benefit by being in this research?**

Benefits to the participants, in the form of classroom activities (vocabulary acquisition), may be an immediate result of this study. Using music for enhanced participation and student learning could prove to benefit Curran Center students in future years.
Who will see the information about my child?
Those having access to the data during the collection process are your child’s teacher and
the researcher, Mrs. Mary Joyce. The need for confidentiality throughout the research
process will be discussed, understood, and followed by all parties. All identifiable
documentation will be destroyed after the information is recorded.
In rare instances, authorized people may request to see research information about your
child and other children in this study. This is done only to be sure that the research is
done properly. We would only permit people who are authorized by organizations such as
Northeastern University to see this information.

If my child does not want to take part in the study, what choices does he/she have?
Students wishing not to participate in the research portion of the study will not be
assessed on the targeted vocabulary words and will not be interviewed regarding the
study.

What will happen if my child suffers any harm from this research?
No special arrangements will be made for compensation or for payment for treatment
solely because of your child’s participation in this research.

Can my child stop his/her participation in this study?
Your child’s participation in this research is completely voluntary. He/she does not have
to participate if he/she does not want to. Even if he/she begins the study, he/she may quit
at any time. This study poses no reflection to your child’s kindergarten progress grade.
Therefore, there will be no penalty to their literacy grade if he/she does not participate or
if he/she decides to quit.

Who can I contact if I have questions or problems?
Questions of the research study, building activities, or classroom activities may be
directed to any of the following Dedham Public School staff members:

- Mrs. Mary Joyce, Special Needs Teacher and Researcher
- Mrs. Jessica Hammond, Curran Center Principal

Who can I contact about my child’s rights as a participant?
If you have any questions about your rights as a participant, you may contact Nan C.
Regina, Director, Human Subject Research Protection, Northeastern University, Boston,
MA. You may call anonymously if you wish.

Will my child be paid for his/her participation?
Although students will not be paid for their participation in the study, benefits in the form
of classroom activities (vocabulary acquisition), may be learned.

Will it cost my child anything to participate?
No. There will not be any cost incurred to your child.
Is there anything else I need to know?
The data, gathered by the researcher to complete her dissertation, will be used to
determine whether using music with kindergarten students to acquire vocabulary
enhances their learning. The data will be formalized into a report and used to:

- Guide others on the use of music with kindergarten students to acquire vocabulary
  words.
- Determine the effectiveness of song picture books in kindergarten students
  learning
- Determine if enhancements could be suggested in literacy curriculum at the
  Curran Center.

I agree to have my child take part in this research.

____________________________________________  ________________________
Signature of parent/guardian  Date

____________________________________________
Printed name of person above

____________________________________________  ________________________
Signature of person who explained the study
and obtained consent  Date

____________________________________________
Printed name of person above
Appendix D

Verbal Student Permission

Script will be read to student before the vocabulary pre-test.

Hi ________________!

“Today I am going to show you some pictures from two song picture books and ask you what they are. Is that okay with you?”

Script will be read to student before post-test vocabulary words are shown and before questions are asked about the books and lessons.

Hi ____________________!

“You might remember that I asked you the word for a number of pictures a while ago. I would like to do that again. Is that okay with you?” Ask the child the words.

Then, “Now I would like to ask you some questions about the two books we just read in class.” (Show the child the books.) “Would that be okay with you?”
Appendix E

Assessment Sheet for Targeted Words for *Down by the Station* by Will Hillenbrand

X Mark indicates that child names the word when the picture is shown to him/her.

Name:________________________________________     Group:_________________

Pre-test Date:__________      Post-test Date:___________

<table>
<thead>
<tr>
<th>Targeted Words</th>
<th>Pre-Test</th>
<th>Post-Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. station</td>
<td>________</td>
<td>________</td>
</tr>
<tr>
<td>2. lever</td>
<td>________</td>
<td>________</td>
</tr>
<tr>
<td>3. calf</td>
<td>________</td>
<td>________</td>
</tr>
<tr>
<td>4. flamingos</td>
<td>________</td>
<td>________</td>
</tr>
<tr>
<td>5. chick</td>
<td>________</td>
<td>________</td>
</tr>
<tr>
<td>6. cub</td>
<td>________</td>
<td>________</td>
</tr>
<tr>
<td>7. tiger</td>
<td>________</td>
<td>________</td>
</tr>
<tr>
<td>8. seal</td>
<td>________</td>
<td>________</td>
</tr>
<tr>
<td>9. kangaroo</td>
<td>________</td>
<td>________</td>
</tr>
<tr>
<td>10. joey</td>
<td>________</td>
<td>________</td>
</tr>
</tbody>
</table>

**Script for pre-test:** Today I am going to ask you to name pictures from a story you will hear in class. (Show pictures one at a time.)

**Script for post-test:** Today I am going to ask you to name some pictures from the story we read (or sang) in class. (Show pictures one at a time.)
Appendix F

Assessment Sheet for Targeted Words for *Down by the Bay* by Raffi

X Mark indicates that child names the word when the picture is shown to him/her.

<table>
<thead>
<tr>
<th>Name: ______________________________</th>
<th>Group: __________________</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-test Date: __________</td>
<td>Post-test Date: __________</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Targeted Words</th>
<th>Pre-Test</th>
<th>Post-Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. bay</td>
<td>________</td>
<td>________</td>
</tr>
<tr>
<td>2. watermelons</td>
<td>________</td>
<td>________</td>
</tr>
<tr>
<td>3. goose</td>
<td>________</td>
<td>________</td>
</tr>
<tr>
<td>4. moose</td>
<td>________</td>
<td>________</td>
</tr>
<tr>
<td>5. whale</td>
<td>________</td>
<td>________</td>
</tr>
<tr>
<td>6. polka-dot tail</td>
<td>________</td>
<td>________</td>
</tr>
<tr>
<td>7. fly</td>
<td>________</td>
<td>________</td>
</tr>
<tr>
<td>8. tie</td>
<td>________</td>
<td>________</td>
</tr>
<tr>
<td>9. comb</td>
<td>________</td>
<td>________</td>
</tr>
<tr>
<td>10. llamas</td>
<td>________</td>
<td>________</td>
</tr>
</tbody>
</table>

**Script for pre-test:** Today I am going to ask you to name pictures from a story you will hear in class. (Show pictures one at a time.)

**Script for post-test:** Today I am going to ask you to name some pictures from the story we read (or sang) in class. (Show pictures one at a time.)

**Attach Appendix G:** Student Interviews
Appendix G

Student Interviews

• We learned new words in both these books. Did you like one book better than the other?

• Which one?

• Why?

• We learned new words in both these books. One of them I read, and the other we sang together. What did you like better, when (a) I read the book to you or when (b) we sang the book together?

• Why did you like (a) or (b) better?

• We were learning new words when we read or sang these books. Do you think that you learned the new words better by listening to the story or by singing along with the story?

• Why?
Appendix H

Teacher Observation Protocol

Circle: Is the story being read or sung?

Circle: Which story? *Down by the Station* by Will Hillenbrand

*Down by the Bay* by Raffi

Group ___ Teacher _________________ # of Students in class____

Date:___________________ Circle: Day 1  Day 2

Record:

Teacher has names of students in her class on left side of paper.

Names x  Who is singing/attending  Record evidence of engagement

What are students doing?
(e.g. clapping, singing words, tapping feet, swaying etc.)
Appendix I

Teacher Recording Sheet

*Down by the Station* by Will Hillenbrand

Circle the modality:  It is being read.           It is being sung.

*Down by the Bay* by Raffi

Circle the modality:  It is being read.           It is being sung.

Group____ Teacher ____________________ # of students in class_____

Date:___________________Circle:   Day 1           Day 2

<table>
<thead>
<tr>
<th>Target Words</th>
<th>Students answering Question</th>
<th>Student</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>What is_________?</td>
<td>Definitions</td>
</tr>
<tr>
<td>1. bay</td>
<td>station</td>
<td></td>
</tr>
<tr>
<td>2. watermelons</td>
<td>lever</td>
<td></td>
</tr>
<tr>
<td>3. goose</td>
<td>calf</td>
<td></td>
</tr>
<tr>
<td>4. moose</td>
<td>flamingos</td>
<td></td>
</tr>
<tr>
<td>5. whale</td>
<td>chicks</td>
<td></td>
</tr>
<tr>
<td>6. polka-dot tail</td>
<td>cub</td>
<td></td>
</tr>
<tr>
<td>7. fly</td>
<td>tigers</td>
<td></td>
</tr>
<tr>
<td>8. tie</td>
<td>seals</td>
<td></td>
</tr>
<tr>
<td>9. comb</td>
<td>kangaroos</td>
<td></td>
</tr>
<tr>
<td>10. llamas</td>
<td>tigers</td>
<td></td>
</tr>
</tbody>
</table>
Appendix J

Interview with Four Classroom Teachers About Their Students

- What did you notice about your students when the story was being read to them?

- What did you notice about your students when the story was being sung to them?

- Was there a difference in their engagement and what evidence did you observe supporting this difference?

- Why do you feel your students reacted that way?