

EFFECT OF SELECTED AUDITORY
PRESENTATION CONDITIONS OF A
PICTURE SONG-BOOK ON PRESCHOOL
CHILDREN'S WORD RECALL

BY S. DAVIS


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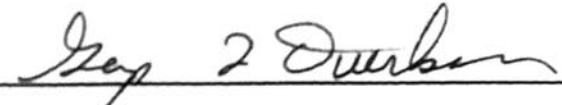
by

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B. A. Clarke College, 1986

Submitted to the Department of Music and Dance and the
Faculty of the Graduate School of the University of Kansas in
partial fulfillment of the requirements for the degree of Master
of Music Education.


Professor in Charge




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For the Department

August 29, 1994
Date thesis accepted

ABSTRACT

This study investigated the effectiveness of rhythmic, melodic, and story style lyric cues with and without visual prompts on preschool children's ability to recall preselected vocabulary words contained in the text of the song and to investigate the effectiveness of a commercial product that contains visual and melodic cues as mnemonic strategies. Seventy-two preschool children from six different day care centers in the Topeka, Kansas suburban area participated in the study. The subjects ranged in age from three to six years. The mean age was five years and included thirty-two females and forty males. Subjects were presented at random one of three test presentation conditions. Each subject listened to an audio-cassette recording containing either musical, rhythmic, or story-like text accompanied with or without visuals. Subjects were asked to listen to the recording accompanied with or without visuals two times in succession. Immediately following the presentation of the text, two tests were administered to each individual. The first test determined which of the preselected words the subject could recall freely. The second test involved recalling the preselected word that came at the end of each sentence of the text or what is termed "closure technique." A 2 (prompt presence or absence) x 3 (lyric conditions) factorial analysis of variance was used to compare the preschool children's recall scores of the forty-eight preselected words during melodic, rhythmic, and story style lyric conditions with and without visual prompts. In

addition, treatment presentation conditions were compared with and without visual prompts. Score 1 consisted of words remembered during free recall. Score 2 consisted of words recalled using a clozure technique.

Results indicated a significant main effect occurred at the .05 level when visuals were used for score 2 (clozure technique), but not for score 1 (free recall). Results from the cell means indicate that story-like text accompanied with visuals may enhance recall of words more effectively than text accompanied without visuals. The melodic and rhythmic presentation conditions enhanced recall better without visuals than with visuals. No statistical significance was found when visuals were not used during any of the three treatment conditions for either the free recall test or the clozure technique test. Results suggest that commercially made picture songbooks may be an effective tool in the preschool classroom, but may not be the most effective means in enhancing recall of specific words. How a song is organized, in addition to the quality of the visuals and subject matter, may influence how information is processed by a young child. Parents, teachers, and others interested in determining what methods are appropriate for preschool-aged children to learn and retain information will benefit by continued research in this area.

ACKNOWLEDGEMENTS

My deepest appreciation goes out to Dr. Alice-Ann Darrow for serving as my thesis advisor. Her support, encouragement, and never-ending belief in me enabled me to complete this project. I would also like to share my gratitude to the other members who served on my committee, Dr. Chris Johnson and Dr. George Duerksen. Their suggestions and encouragement were also greatly appreciated. Thanks also goes to Dr. Radocy who helped me in the preliminary stages of my project. I could not have finished this project long distance without the patience of Lois Elmer who was there for me during my last minute dilemmas.

Many thanks go out to the day care facilitators who were so cooperative and the parents of my students who helped make this project a reality.

I can not thank my friend Diane enough for her support and encouragement, my crazy GTA friends, and my other loyal friends in Kansas who stuck with me through thick and thin.

Finally, I can not close without thanking my precious family who have supported me in whatever I have set out to do in life, especially my brother Steve, who provided the voice on the musical example tapes for this study. Also thanks to his friend, Rick, who accompanied Steve on the tapes. Last but not least, thanks to my boyfriend Dave who could always make me laugh.

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Chapter I

Introduction

Memory is involved in many aspects of a child's development and appears to become more effective with age. It is not a skill that stands alone; it is part of cognition which includes both a child's intellect and social experiences (Flavell, 1971). Different kinds of memory behavior exist. The recognition of objects involves one memory process, while memorizing for an exam involves another. Some memory processes involve automatic behavior or "motor memory," as when one "instinctively" shuts the car door. Flavell (1971) stated:

Memory is in good part just applied cognition. That is, what we call "memory processes" seem largely to be just the same old, familiar, cognitive processes, but as they are applied to a particular class of problems. In other words, memory seems mostly to be just a matter of the head doing its characteristic "thing" while coping with the specific task of storing or retrieving factual information, ideas, and other cognitive contents.

Some researchers believe a child's intellect is in direct relationship to the memory process. Piaget and others have attempted to understand the development and growth of a child's intellect. Piagetian theory is a stage theory which views human intelligence as

moving through successively higher stages from sensori-motor to operational thinking (Zimmerman, 1984). The Piagetian method is used to understand the reasons and rules that underlie children's beliefs, opinions, and approaches to solving problems and can in turn influence the memory process (Seifert & Hoffnung, 1987). Gardner (1983) stated that Piaget's account of child development still remains the theory against which all other formulations continue to be judged.

Current research appears to support Piaget's theory of child development. One view complementing Piaget's theory is the information-processing approach to cognitive development (Lefrancois, 1973). This approach contains three fundamental components: the knowledge base and its creation, the processes and strategies by which information becomes part of the knowledge base or is retrieved from the base, and the emergence of the child's awareness of self as a player in what Flavell (1985) has termed the "game of cognition." The information-processing approach model of memory appears to be useful for looking at the developmental progression of memory because it leads to a number of predictions about infant and child memory that can be tested directly (Lefrancois, 1973).

Though various information-processing theories exist, all theories focus on the precise, detailed features of steps involved in mental activities. One such theory described the human information processing model in terms of three types of storage: sensory memory, short-term memory, and long-term memory (Atkinson & Shiffrin,

1971). According to this model, when a person is presented with a problem, he or she first takes in information about features in the immediate environment through the senses which include our vision, hearing, taste, smell, and touch.

Information obtained through vision or "visual memory" is the ability to recall a visual image of objects, forms, symbols, and movements. Iconic or visual memory lasts less than a second (Sperling, 1960). Visual information that is stored in memory is used to retrieve and compare present with past visual experiences. Responses to items in the visual environment can then be organized, interpreted and contributed to the total learning process (Tansley, 1986). Sequential memory, another component of visual and auditory memory, involves remembering of the order of letters in words and of words in sentences (Tansley, 1986). Echoic or auditory memory is another form of sensory memory in which the recollection of items heard first or last is a primary example which typically lasts fewer than 4 seconds (Darwin, Turvey, & Crowder, 1972). In both infancy and adulthood, preperceptual auditory or "echoic" storage contributes to auditory perception (Cowan, Suomi, & Morse, 1982). Selected information from this sensory experience transfers to short-term memory. The information gained through the senses is kept briefly in short-term sensory storage in the brain. Information stored in sensory memory fades quickly unless further processing takes place.

Short-term memory, the second type of storage in information processing, is used to briefly store new information and to process it. Miller (1956) found that information in short-term memory is usually small, ranging from five to nine individual items or "chunks" of information. Other examples of short-term memory include recalling the beginning of a sentence, or glancing at the sky and knowing there are two, four or even seven birds, but having to guess at the number of birds beyond seven. Short-term memory apparently depends on rehearsal or repetition. Without repetition, short-term memory will disappear rapidly. According to Poling, Schlinger, Starin, & Blakely (1990), information typically remains in short-term memory for 15 to 30 seconds.

Working memory is similar to short-term memory. This process focuses attention on information already in the brain rather than new incoming information. A person solving an addition problem in their head is one example of working memory while memorizing a phone number temporarily is another example of working memory. Any type of information that is not to be saved takes place in the working memory process. The contents of working memory may be saved permanently in long-term memory.

In order to store information in long-term memory, various cognitive strategies need to take place (Seifert & Hoffnung, 1987). These strategies may include rehearsing and organizing. Rehearsing may involve repeating a series of numbers over and over until

retrieval can take place at any time. Organization may involve grouping material such as ideas out of a chapter in a textbook that had been read repeatedly. Chunking is another example of an organization strategy. One might organize an initially unrelated list of words pencil, cow, eraser, chicken, computer, and house into three categories or "chunks" of information such as dwellings, animals and office equipment. Children may have difficulty in categorizing information depending on their developmental level. For example, memorizing a series of unrelated numbers without using a device to organize them may prove difficult for some children. Certainly, children with any kind of developmental or learning disability may have greater difficulty organizing unrelated items.

Norman (1982) wrote that "to remember is to have managed three things successfully: the acquisition, retention, and retrieval of information. Failure to remember means failure at managing one of those three things" (p. 2). It appears the most difficult task is the retrieval of information. People often have difficulty remembering (Seifert & Hoffnung, 1987); thus, researchers have tried to find devices that help facilitate the memory process in both children and adults. Some facilitators may include the use of rhythm, music and/or visual prompts. According to Sloboda (1985), songs and rhythmic poems contribute a great deal to non-literate cultures and how information is remembered. Prickett and Moore (1991) found that music or rhythm assisted recall and recognition in Alzheimer's patients. In addition to

music and rhythm, visual prompts have also proven to be an effective memory facilitator for both children and adults in a variety of settings. Bransford and Johnson (1973), found that comprehension and recall of information was largely enhanced when appropriate pictures accompanied textbooks.

Very young children are rarely taught the use of strategies to facilitate their memory process. It would seem beneficial to introduce preschool children to a variety of materials and techniques that will help facilitate memory and learning information in the classroom. Music, rhythm, and visual cues are possible facilitators that enhance the memory process and in turn assist children in learning new information.

Commercial products that attempt to utilize one or more of the above mentioned facilitators are part of a growing industry. McCullaugh (1986) predicted the need for media products in the children's market. It may be useful then to test some specific products and their effectiveness on children's memory. Information from such research may be valuable for both teachers who use the products in their classrooms and those who produce commercial products for the child market. In addition, much of the research involving children has been conducted in an unnatural setting, such as a laboratory; and consequently, yielded inconclusive results (Myers & Perlmutter, 1978). Researchers suggest testing children in their own environments, such as the school or home, to achieve more meaningful results.

The purpose of this study is to (1) examine the effectiveness of rhythmic, melodic and story style lyric cues with and without visual prompts on preschool children's ability to recall song lyrics, and (2) to investigate the effectiveness of a commercial product that contains visual and melodic cues as mnemonic strategies. This study will also explore the use of a typical preschool setting for young children's recall of selected words.

Chapter II

Review of Literature

The following section reviews research involving factors that contribute to children's memory functions, and research related to the effectiveness of music, rhythm, and visual prompts on children's memory.

The Development of Memory in Children

Developing strategies to recall words may be an important component in the memory process of very young children. Children demonstrate substantial differences in their memory abilities. Piagetian theory of children's memory and cognitive development is one of the more comprehensive models of such differences (Inhelder, 1969; Piaget & Inhelder, 1973). Piaget's cognitive theory of development places emphasis on developmental stages that are closely tied to maturation (Seifert & Hoffnung, 1987). Piaget's cognitive stages include the sensori-motor, preoperational, concrete operational and formal operational. The child experiences the sensori-motor stage from birth to two years of age in which coordination of sensory and motor activity, and achievement of object permanence takes place. During the preoperational stage from two to seven years, the child develops the use of language and symbolic representation and has an egocentric view of the world. The concrete operational stage from seven to eleven years of age is when the child uses logical operations to solve concrete problems. The last stage, formal operational from ages

11 to adulthood, involves the systematic solution of actual and hypothetical problems using abstract symbols. In a 1973 study, Piaget and Inhelder focused on the way in which memory processes may change as the child progresses through these stages of development. In addition, they investigated how information is stored in memory.

They contended:

The mnemonic code, far from being fixed and unchangeable, is structured and restructured along with general development. Such a restructuring of the code takes place in close dependence on the schemes of intelligence. The clearest indication of this is the observation of different types of memory organization in accordance with the age level of a child so that a *longer interval of retention without any new presentation, far from causing a deterioration of memory, may actually improve it* (Inhelder, 1969, p. 361, emphasis added).

Brown et al. (1983) contended that children do not completely lack learning strategies; however, they often do not use them. Three- or four-year old children will frequently point to or label objects and words in a book but may not do it consistently (Seifert & Hoffnung 1987). Miller (1983) noted a common belief that preschool children have poor memories; it seems however that very young children simply have difficulty discriminating the situations that involve automatic memory versus those requiring the use of mnemonic strategies (Yendovitskaya, 1971).

A number of researchers investigated factors related to memory abilities among children. Stevenson, Parker, and Wilkinson (1975) tested 255 five-year-olds on various memory tasks, including digit span, recall of stories and the recall of pictures. Various measures of memory were correlated and results indicated that less than half of the relations were significant. The investigators concluded that if a child performed well on recalling digits, this may not predict success in recalling a story.

Kail and Siegal (1977) attributed differences in memory to the child's gender. Males and females, aged 8, 11, and 19 years, were presented a grid consisting of 12 boxes in which some of the boxes contained letters. Subjects were asked to recall the letters in one condition, and spatial information (where the letters appeared in the grid) in another condition. Males consistently recalled the letter positions better than the letter names. Females exhibited the opposite recall pattern.

In addition to gender, a child's growth and development may also affect memory. Flavell and Wellman (1977) conducted a series of experiments on children's awareness of memory or "metamemory," meaning a young child must learn that some situations require the need to remember and some do not. They stated:

Among the important things a growing person may learn is to be attuned to and responsive to those occasions when it is adaptive either to try to retrieve something right now or to

prepare himself and/or his environment for effective future retrieval.

Flavell and Wellman concluded that older children recognize information previously learned more efficiently than younger children because older children are more aware of the need to memorize and thus, employ the strategies necessary to remember. In addition, older children seem to do better at predicting how well they will recall information because they understand more clearly that categorization facilitates memory.

In summary, it appears that differences in memory abilities may not only be attributed to the developmental level of the child, but also to factors such as age and gender. The use of mnemonic strategies may enable children to remember information more efficiently regardless of the above mentioned factors. Some researchers believe even preschool age children can use mnemonic strategies to recall information

Mnemonic Strategies

Mnemonic strategies are devices people use to help them remember certain materials. Webster's New World Dictionary, (1956) describes *mnemonics* as "the science or art of improving the memory" (p. 481) Individuals often develop a particular strategy to organize or rehearse information when faced with a memory problem. Preparing a shopping list and writing a note and placing it on the door both exemplify mnemonic strategies. Bellezza (1981) suggested the young

learner who has difficulty using mnemonic strategies should be given memory aids or strategies to assist retention.

Wellman, Ritter, and Flavell (1975) discovered that preschool children often use simple mnemonic strategies to store information. Three- year old children were told a story about a dog which involved using four cups as props. A toy dog was placed under one of the cups or "doghouse," and the child was told to remember where the dog was while the experimenter left to get some more props. Observers noticed that the children touched and looked at the cup the dog was placed under more than the other cups. Touching and looking at the cup, a mnemonic strategy, was associated by the preschoolers with retention of location.

Appel, Cooper, McCarrell, Sims-Knight, Yussen and Flavell (1972) provided two sets of pictures to four-, seven-, and 11- year olds. Instructions to remember were given with one set, and the other instructions were to look at the pictures. Children were asked to recall the pictures under both conditions. Only the 11- year olds used mnemonic strategies such as rehearsal and therefore recalled information more efficiently than the four- and seven- year olds. The four-year olds responded in the same way under both instructions and the seven-year olds recalled information twice as often when direct instruction was given to remember the pictures.

People often employ verbal rehearsal as a strategy to remember a series of items. Flavell, Beach, and Chinsky (1966) showed seven

pictures to children, aged 5, 7, and 10 years. They asked children to recall, either immediately or after 15 seconds, two to five of the pictures. Results indicated that children would rehearse verbally and regularly at about seven years of age. Apparently, 5- to 6- year olds do not rehearse on their own, 7- year olds begin to rehearse, and by age 10, children become more spontaneous in verbal rehearsing.

Another type of rehearsing is called maintenance rehearsal. Maintenance rehearsal is the cyclic repetition of information to maintain it in short-term storage and assists in recalling information accurately at any time during rehearsal (Craik & Lockhart, 1972). This type of rehearsal does not affect long-term memory unless used often enough to enhance coding necessary for long-term storage.

Kail (1979) speculated, as did Brown et al. (1983), that children may have the ability to use rehearsal strategies to enhance recall but have not been taught to do so. Using two mnemonic strategies such as labelling items of information and rehearsing those items simultaneously may lead to more accurate retention. Rehearsal seems to be the best of the two strategies that provide the necessary practice needed for retrieval, as well as providing information about the specific order of the items to be remembered.

Brown (1975) contended preschoolers may recognize familiar people and places and reconstruct meaningful events without knowingly using mnemonic strategies. He stated that making information meaningful to the young child increases the possibility of

the child retaining that information. The child may require mnemonic strategies only when memorizing novel information.

Kreutzer, Leonard, and Flavell (1975) investigated pairing meaningful information with the use of mnemonic strategies. The investigators presented the children with realistic memory problems such as the following:

What if you were invited to a birthday party for a friend. How could you make sure you remembered the party? How many different ways can you think of?

Only half of the kindergarten children suggested writing a note. In contrast, older children thought of writing a note and placing it where they would see it daily. Thus, younger children may have difficulty with internal mnemonics (strategies used themselves) and rely more on external mnemonics (verbal reminders from parents). On the other hand, younger children may have the internal strategies necessary to remember, however, may not be developmentally ready to employ such strategies (Stevenson, 1972). Accounts of how young children remember information or a sequence of events contribute to the growing research regarding children and their retrieval of information. The efficiency with which a child retrieves information may be connected to the child's environment.

The majority of research conducted with children today takes place in a laboratory setting. Neisser (1982) contended that research results conducted in laboratory settings are very inconclusive.

Discoveries made in the laboratory setting have been made only on theoretical terms and not on meaningful data that would provide sufficient insight to influence the child's future behavior. When a child does not perform well in a particular study conducted in the laboratory the investigator may question whether the child either (1) did not understand or (2) simply was not motivated to perform the task because they were out of their natural environment (preschool classroom or home). Myers and Perlmutter (1978) also believed that recall tasks performed in the laboratory produced poor results with children aged two to four years. Research involving the preschool child's ability to remember has not been observed in a variety of settings. Thus, there is a growing trend in early childhood research to conduct memory experiments in settings that are familiar and natural to the child (Istomina, 1975; Murphy & Brown, 1975). The most realistic environment for the very young child is in the preschool classroom.

Istomina's (1982) research illustrates children's ability to use their memory in natural settings more effectively than in the laboratory settings. Three- to seven- year old children were given a list of items to purchase from a playstore. The children then were asked what items they purchased after the task was accomplished. In the laboratory, children were asked to remember a list of words similar to the ones involved in the playhouse. Every three seconds words were presented to the kindergartners. After a pause of 60 to 90 seconds, the

children were asked to recall as many words as possible. The kindergartners involved in the play shopping game recalled words twice as well as the children in the laboratory setting. Istomina speculated that performance of the kindergartners in a more natural environment influenced how well they could remember the series of events.

Rhythm and Memory

Rhythm may also be used as a facilitator to enhance children's memory. A number of children's texts contain statements supporting the value both music and rhythm have for enhancing the memory process. Rowen, Byrne, and Winter (1980), stated:

Rhythm has an almost magical quality in helping memory function and responses become more automatic . . . Rote counting can be practiced in a more interesting format by using many songs designed for such purposes. (p. 164)

Other investigators have also reported that there is a relationship between rhythm and memory. They found that rhythm may be used as a mnemonic technique to facilitate learning and retention of nonmusical information. Neisser (1969) observed that subjects given a string of digits to memorize used a rhythmic or metric structure to assist in memorization. Ryan (1969) further reported college students used temporal grouping strategies to assist in the memorization of nine-digit sequences. The technique significantly reduced the number of errors in short-term recall. Prickett (1974) reported that young

children increased their recall of seven-digit sequences significantly when items were grouped in a rhythmic pattern.

Hicks (1987) conducted a study using rhythm as a mnemonic device to assist in the memory of preschool children. Rap music rhythms (words spoken rhythmically) were presented to three- and four- year old African-American and Hispanic American children. The content of the rap rhythms involved unfamiliar names of body parts. All presentations employed audio-visual instructional tapes. One tape presented the information about body parts through rap rhythms. The other tape presented the information via conversational speech (story like). Results indicated that the group receiving the information via rap named significantly more body parts than the group receiving it through conversational speech. Hicks speculated that the rap presentations stimulated the urban preschool child who typically is exposed to this kind of music, thus it is more familiar to the child and led the child to "self-initiated practice." (p. 23) Any self-initiated practice thus would act as a facilitator for learning. Hicks wrote, "We argue that it is the rhythm . . . that served to attract the attention of and served as the motivator to the urban preschool child to engage in the learning process." (p. 21)

Music and Memory

In addition to rhythm, some researchers have evaluated the use of music to enhance recall or recognition. Melody may make the words to a song more meaningful and thus facilitate the memory

process. The relationship between words and song and how they relate to memory has been researched by Serafine, Crowder, and Repp (1984), who suggested there may be three ways a listener might attempt to store a song's words and melody in memory. *Independent storage* assumes that tunes and text are stored separately, meaning that a listener could recognize the melody regardless of the words attached to it. *Integrated storage* or the integration of words and melody enables the listener to remember the words because of the melody or remember the melody because of the words. A third strategy, *wholistic storage*, is when the listener remembers the song as a whole. The listener then would need to have both words and song present before putting the song into memory.

Several researchers have investigated "wholistic storage." Rubin (1977) investigated college student's long-term recall of song lyrics. Subjects wrote the lyrics to the "Star Spangled Banner" under one of three conditions: (1) correct music cue or instrumental version of "The Star Spangled Banner" played repeatedly; (2) incorrect music cue or instrumental version of "The Stars and Stripes Forever" played repeatedly; and (3) no cue (silence). Under the three conditions the subjects recalled an average of 52, 28, and 32 of the 80 words respectively. It appeared that when the correct music was used as a cue, lyric recall significantly increased while incorrect music or no music decreased subject's ability to recall words.

Research on music and memory has also been conducted with geriatric clients. The use of music to aid the memory of Alzheimer's patients was investigated by Prickett & Moore (1991). Ten patients diagnosed as having probable Alzheimer's disease were tested for recall of both sung and spoken material. Each subject underwent 20 minutes of assessment for three sessions. Familiar sung and spoken material was presented at each session. The sessions also included the presentation of new material both sung and spoken. The sessions were videotaped and patients were evaluated on how many words they recalled correctly. Results indicated the patients recalled significantly more words to the songs than they recalled spoken words.

Smith (1991) supported the use of familiar music to aid recall tasks of older adults. He used popular songs from the 1940's and 1950's. One of the groups consisted of subjects from a retirement center who listened to six song segments. Subjects consisted of adult day care participants or nursing home residents who completed an abbreviated assessment composed of three of the six song segments. Recall performance was not significantly different between songs designated as familiar and those that were considered less familiar. Significant differences were found between group responses for each of the three songs used in the abbreviated assessment. Mean rank scores were significantly different for the two-phrase familiar song and the two-phrase unfamiliar song. A post hoc analysis indicated that other factors such as tempo, length of seconds per word, and total number of words

may be more closely associated with lyric recall than the familiarity of the song.

Bartlett and Snelus (1980) investigated lifespan memory for popular songs. Middle-aged and elderly subjects were given melodic and verbal cues (titles) for popular songs ranging from 1921 to 1974. When a cue was recognized, the subjects attempted to recall the lyrics and estimated when the song was last heard. The "last-heard" responses of all subjects were highly correlated with the actual "year-of" popularity. The results further indicated that the recall of lyrics was higher in response to melodies than in response to titles. Subjects making "time-of" popularity judgements were more accurate when the music was recognized even when the lyrics were not recalled. It was suggested by the investigators that lifespan memory for popular songs exists and that temporal judgements are based on episodic memory (recalling songs popular during their lifetime) for information.

Morton, Kershner, and Siegal (1990) investigated therapeutic applications of music on problems related to the memory and attention of adolescents. Sixteen right-handed males aged 10 to 12 years of age were given a verbal dichotic listening task (monosyllabic digits) which was preceded by both exposure to music and exposure to silence. Results indicated that prior exposure to the music increased subjects' memory capacity and reduced distractibility.

Music and its elements also appear to facilitate the recall abilities of children with mental retardation. Isern (1959) tested ten children

with mental retardation on their ability to remember the content of a story or the content of a song. The story and song were selected on the basis of difficulty of text, familiarity of the content to the subjects, numbers of characters depicted in the story and song and the number of actions the characters performed. Both story and song contained five verses about an animal and an action that accompanied the animal. The experimenter used a check list to evaluate what the subjects remembered. A song was presented to the subjects during a music session and not discussed afterwards. Two days later, the subjects were asked what they remembered. Two weeks lapsed before the story was presented. The same procedure was used to test for retention of material. Data indicated that seven of the ten subjects remembered more information about the song than they did about the story. Isern contended that music and/or its rhythm may have served as an organizer of material for the individual at the time of presentation.

Lathom (1971) investigated the use of repetitive song lyrics, rhythms, and melodies as mnemonic strategies for children with mental retardation. Three songs were chosen by an expert of children's music based on repetition of its musical phrases, lyrics, rhythms, and harmonic patterns. Another expert chose three stories and three poems that were also of a repetitive nature. The retention test was divided into three parts: recall, chaining, and verbal concepts. Each subject was tested individually to determine the amount of information recalled about the song, story, or poem. Results indicated

that the songs and poems which included a high degree of organization and repetition increased probability of recall. It seemed that organized information was more predictable and easier to classify into memory. The mean scores indicated that the groups retained songs better than either the spoken stories or poems. The redundancy of the song may have led to better retainment of information.

Staples (1968) investigated using music as the facilitator in the paired-associated learning and retention of students with mild mental retardation. Subjects heard nonsense syllables paired with words presented under one of three conditions. Subjects experiencing the melodic condition heard the pairs sung in a two- to four-measure melody. In the rhythmic condition, subjects heard the pairs chanted to the same rhythm contained in the melodic condition. Control subjects heard the pair read in a normal speaking voice. The subjects would then hear one of the syllables and tried to recall the associated word. Results indicated significantly higher recall scores were obtained from the experimental group utilizing iso-rhythmic facilitators than from the control group or the melodic group.

Music has also been used as a facilitator for memory with learning disabled children. Gfeller (1983) investigated the effectiveness of melodic-rhythmic mnemonics as an aid to short-term memory (using 30 learning disabled and 30 non-learning disabled male students). All subjects were involved in two experiments conducted over a three day period. The first experiment consisted of a pre-test, a

single rehearsal of the memory task, and a post-test. Variables examined during the post-test included group membership (learning disabled or non-learning disabled) and the effects of the rehearsal mode (musical or verbal) on retention. Results from the first experiment indicated significantly greater recall for both non-learning disabled subject membership and verbal rehearsal. There was no significant interaction effect involving rehearsal mode. In the second experiment, four additional memory tasks were completed by the subjects and the effects of group membership, rehearsal mode, teaching method (repetition versus repetition with modeling and cuing) and time were examined. Results indicated that musical rehearsal, when paired with modeling and cuing, significantly enhanced retention of information for both groups.

Chazin and Newschatz (1990) tested the effects of song as a mnemonic strategy on the recall of unfamiliar scientific information using two samples of subjects ranging in age from 8 to 21 years. The two groups received information about minerals, either in song or lecture format. Subjects were tested for free recall immediately after the presentations and again a week later. Results for immediate recall indicated subjects in the song condition recalled significantly more names of minerals than individuals in the lecture group. Results of tests given one week later indicated the mnemonic device did not show a significant effect in recall over time.

Closely related to the present study is that of Connor (1991). Connor investigated the effectiveness of music as a memory aid in preschool children. Seventy-three preschoolers from six different day care centers were tested under one of four conditions: (1) Musical audio cassette format, (2) rhythmic-verbal format, (3) conversational-verbal format, and (4) control group. Song materials used for the study were commercial products advertised to teach cognitive skills to preschoolers. Song content consisted of information related to "opposites" and "months of the year." After listening and rehearsing with the tape, subjects were asked to respond verbally to questions appropriate to the subject matter of the songs. Results indicated that subjects exposed to the rhythmic-verbal presentation recalled significantly more information than the musical presentation group, and that all three experimental presentation groups recalled more information than the control group. Results further indicated no significant differences for recall between 3-, 4-, and 5-year-old subjects in each of the groups.

Visual Prompts and Memory

Visual cues have been utilized to assist in the retrieval process of memory. Pictures that accompany text content have been found to facilitate recall of that content (Haring & Fry, 1979; Levie & Lentz, 1982; Levin, 1981; Levin & Lesgold, 1978; Readence & Moore, 1980; Schallert, 1980). Little is known, however, about the characteristics of the visuals that enhance learning or recall.

Evertson and Wicker (1974) found that objects and color photographs were more effective than line-drawings for children in nursery school and the first grade on a paired-associates learning task. Holyoak, Hogeterp, and Yuille (1972) found that kindergartners and third graders recall performance increased when line-drawings were used as opposed to color photographs. Levin, Bender and Pressley (1979) tested second- and fifth- grade children on their abilities to recall central, thematic information and incidental details contained in sentences. Results indicated that subjects who were shown cartoon-like pictures recalled more of each type of information than those who were not presented with pictures.

Some research has revealed that children at various age levels prefer different types of pictures. Myatt and Carter (1979) discovered the following observations about picture preference and memory after review of the literature:

- a) Most children, regardless of age, prefer colored pictures that appear realistic to a black-and-white picture.
- b) Most children seem to choose a color or black-and-white photograph over other illustrations.
- c) Children, at all grade levels, consistently prefer realism in form and color.
- d) Young children seem to prefer simple rather than complex pictures.

- e) Older children seem to prefer complex rather than simple pictures.

Myatt and Carter (1979) conducted a study of picture preference with kindergartners and children in the grades: first, second, third, fifth, ninth, and eleventh. Six different picture styles were presented to the children. Strong picture preference was not evident with the kindergarten or first graders. Children in the second grade and beyond, however, appeared to have strong preferences for picture types. In order of preference, children in grades 3, 5, 9, and 11 chose photographs, full line-drawings, colorful pictures, collages, simple line-drawings, and lastly, cartoons.

Photographs and pictures may vary in a variety of ways. Pictures may depict either static situations or dynamic events. Each object in a picture may be partially or fully displayed. Partial representations occur when a portion of the object extends beyond the boundaries of the picture (Baine, 1986). Some research suggest that interpretation of the picture may be influenced by whether the picture is fully or partially displayed. Partial picture effects were investigated by Miller and Pressley (1987) in two experiments. Subjects were presented a sentence specifying a subject, an action, and a direct object with the instrument used to carry out the action not specified in the sentence (e.g., The workman dug a hole in the ground). In one condition, subjects only received the implicit sentence. In a second condition, subjects were

presented with the implicit sentence plus the partial picture illustrating the action in the sentence minus the implied instrument. It was hoped that recall would be enhanced given the implied instrument as a cue accompanied by the partial picture. The technique facilitated the memory of the six to seven- year olds, but did not affect the memory of the preschoolers.

Guttman, Levin, and Pressley (1977) hypothesized that pictures do not have to tell the whole story to be facilitative. A partial or incomplete picture was devised to represent prose content. Subjects in the partial picture condition were given the instruction to "form mental images." One of the initial sentences in a prose passage was as follows: "One evening Sue's family sat down to eat a big turkey for dinner." The fully illustrated picture depicted this sentence as a family of four seated around a table with a turkey on a platter in the center of the table. The partially illustrated picture depicted the same family in essentially the same manner, except now the head of one family blocked the viewer's observation of the turkey. The question would then be "What did Sue's family eat for dinner one evening." The correct answer, "the turkey," was not represented in the picture. Results indicated that fully illustrated pictures clearly facilitated recall.

Higgins (1980) investigated several studies in which line-drawings or photographs depicting dogs were truncated by the border, meaning only a portion of the animal was present. At times, a portion of some of the animals was obscured by other objects in the picture.

Children aged four, five, six and seven were asked questions about the capabilities of the objects in the pictures to evaluate how the children interpreted the pictures. Literalism, appeared to vary across age levels. A picture was considered to have been interpreted literally if he or she thought a partially represented animal had fewer capabilities than a fully represented animal. Four-year-olds displayed the least amount of literalism while five-year-olds displayed the most. Six-year-olds were less literal than five-year-olds. There was no significant difference in the four- and seven-year-olds. In summary, many children may derive from pictures information that is significantly different from information the picture was designed to communicate.

Though fully illustrated pictures appear more effective, Guttman, Levin, and Pressley (1977) contended that partial pictures may provide imagery "prompts" for the omitted information and should be used as opposed to no pictures. Levin (1976) and Pressley (1977), however, believed that young children do not capitalize on these imagery prompts. Higbee (1979) suggested that imagery containing detail enhances recall. A subject should be told not only to imagine a dog eating in front of his doghouse, but to imagine a certain kind of dog eating in front of a certain kind of doghouse. Other researchers have supported these suggestions (Bower, 1972; Delin, 1969; Ernest, 1977; Holmes & Murray, 1974).

Lorayne and Lucas (1974) suggested letting subjects create their own images rather than giving them prepared images via pictures.

Young children, however, may have difficulty imaging, thereby making supplied pictures necessary (Reese, 1977). Reese found many studies that resulted in children recalling information significantly better when supplied with pictorial images. The studies corroborated the work of other researchers (Levin & Lesgold, 1978; Levin 1981; Levie & Lentz, 1982).

Developmental factors of children may also influence the differential effects of objects, pictures and line-drawings upon memory (Baine, 1986). Baine contended it is unlikely that preschool children have had experience with the types of line-drawings and black-and-white photographs that researchers frequently use. It is in kindergarten where children begin to practice with a variety of pictures. Pressley (1977) believed very little experience is necessary to learn the rules relevant to interpret pictures. Siegal (1978) contended picture literacy is analogous to reading comprehension. A child must learn to interpret symbolic information according to a set of rules. Children need to learn that pictures represent a form of a referent. Miller, (1973) and Serpell (1976) stated that some cultures do not have pictures nor do they comprehend that a picture can represent a person or object. Results from cross-cultural studies have revealed that responses to pictures are not automatic and are a product of learning.

In an early study by Vurpillot (1968) and more recently, Mackworth and Bruner (1970), children seemed to read pictures inefficiently. Five-year-old children appeared to spend far less time

than adults did looking at the informative or more important parts of a picture. In addition, children's attention seemed to become so attached to detail that their visual tracking averages only two-thirds that of adults. The children evaluated were unable to examine details centrally and to simultaneously monitor their peripheral fields for stimuli that might be candidates for closer inspection (Mackworth & Bruner, 1970).

Young children seem to be more affected by contextual factors of the pictures when participating in systematic scanning or when classifying information. Children between the ages of 3 and 11 years gradually improve in their abilities to scan pictures (Ross & Ross, 1981). The finding that context can affect the scanning behavior of young children suggest that manipulation of context could not only be effective in improving the scanning behavior of normal children, but also in aiding children with mental retardation.

A Travers and Alvarado (1970) study showed there is a tendency for children to fixate on a detail in a picture that is often of irrelevant significance. Children were repeatedly presented with the same pictures. After each presentation, the children were asked what they had seen. Repeatedly the children were found to focus on one particular object in the picture and failed to observe other items. Failure to recognize other items may interfere with what is remembered.

The numerous presentation of pictures may also influence memory of children. Brown and Scott (1971) tested four-year-old children on recognition tasks. Pictures shown twice were recognized 94 percent of the time after a single day and 75 percent after one month. Pictures seen only once were recognized 84 percent after one day, 75 percent after one week and 56 percent after one month.

Pictures, frequently used to accompany stories can serve several purposes. Pictures may heighten motivation and interest, help summarize the content of the prose, focus the viewer on important features of the content, enhance imagery, and increase comprehension, review, encoding and retrieval (Baine, 1986). Narrative prose recall was enhanced by pictures with children in grades K, 2, and 3 (Guttman, Levin & Pressley, 1977). Levin and Berry (1980) researched the effect of cartoon-type line-drawings on the immediate and delayed recall of non-fictional prose by children in grade four. The pictures seemed to have enhanced the recall of information that was depicted and reduced the recall of unillustrated information.

Levin and Lesgold (1978) reviewed the research literature describing the effects of pictures or visual prompts on prose recall. Their review was restricted to fictional, narrative passages that were presented orally to children where the content of the pictures overlapped that of the story. In all studies, learning was demonstrated by factual recall. Levin and Lesgold found an enormous amount of support for the use of pictures. One supportive study was carried out

by Guttman, Levin, and Pressley (1977). Guttman et al. found that across grades kindergarten, two and three, children correctly responded to 80 percent of the short-answer questions when pictures accompanied oral narrative. Similar results were reported by Lesgold, DeGood and Levin (1977). Their subject sample, consisting of children in the first grade, recalled 68 percent of short-answer questions with pictures and 47 percent without pictures.

A study by Kau and Winer (1987) study further supported using pictures to accompany words. The incidental memory of children aged 3, 4, and 5 was tested. Incidental memory usually requires subjects to recall information presented to them under varying conditions. In this particular study, four variables were examined: (1) orienting to meaningful vs. acoustic aspects of stimuli, (2) use of words with pictures, (3) requiring affirmative vs negative responses, and (4) age. Results indicated recall improved with age. In addition, words plus pictures enhanced recall over just the words alone for all ages.

Haring and Fry (1979) tested fourth and sixth graders on their written recall of text material when pictures overlapped the narrative passages. Written recall was tested immediately following completion of reading and again five days later. On both tests, children who had been shown pictures (line-drawings) recalled significantly more information than those not presented with pictures.

Levin and Lesgold (1978) also suggested that pictures presented with prose may be important. They found in reviewing various

studies that pictures had been presented in the following ways: (1) simultaneously with the text, (2) following each sentence, (3) following each passage, (4) as slides on a screen, and (5) as plastic cutouts on a background board. In all instances, the pictures improved recall. In addition, it was found that the pictures facilitated recall for (1) males and females, (2) from grades 6-12, (3) from middle class white populations, (4) from lower class black populations, and (5) individuals who were either educable mentally retarded or those of normal intelligence.

Relationship Between Singing and Reading

Vocabulary development is an important part of preschool education. Word recall is a prerequisite skill to learning the actual meaning of words. With the growing evidence that many gains may be made when music is paired with reading, it is not surprising that more and more commercial products are being produced. In turn, music educators are making these commercial products a part of their classrooms. There are a growing number of products manufactured to assist in the learning of vocabulary. Large books, that contain large print and pictures and often accompany a taped song, are growing in popularity among both preschool and elementary school teachers.

Students who are exposed to language through literature "develop strategies for making sense out of print. . . in the process they develop phonic rules and come to 'know' words and what they mean in a variety of contexts" (Goodman, 1986). Smith (1988) further stated

that children develop insight into the fact that print material is meaningful. Children who learn to read early typically had some adult read to them regularly (Durkin, 1966; Doake, 1986; Teale, 1984).

Reading to preschool children so that they will benefit academically later is becoming a growing school of thought (Anderson, 1985; Butler & Clay, 1979; Doake, 1986; Flood, 1977; Heath, 1986; Holdaway, 1979; Martinez & Roser, 1985; Smith, 1988; Teale, 1987).

Results from Soiferman's (1991) study supported parents reading to their low-achieving school-aged children. Fourteen parents were instructed once a week for eight weeks. The parents used the techniques they learned while reading to their children everyday. Results indicated significant gains in word recognition, comprehension and student attitudes toward reading. Students were found to read more both in and out of the classroom.

Ridout (1990) used songs to teach reading and writing while developing a Reading/Singing strategy. This strategy was designed to promote vocabulary learning, word recognition, writing, and comprehension skills. Eight steps are involved in the Reading/Singing Strategy. These steps include: motivating the children so they will anticipate the lesson; introduction of special vocabulary in the song; setting a purpose for the children to read/sing the words of the song; reading the song's words; singing the song; asking questions pertaining to the song; singing the song again; incorporating skills/strategies into the lesson; extending the lesson.

Picture books with musical themes may include everything from musical instruments, singing, and performing, to the history of composers and their music. Many books contain nonmusical themes but use music as a tool to teach that information. For example, social studies concepts may be explored through singing and dancing songs of a culture (Lamme, 1990).

Summary and Implications

Research results suggest that mnemonic strategies utilizing rhythm, music, and/or pictures may enhance preschool children's ability to recall words. In addition, some researchers strongly suggest testing preschoolers in their own natural environment for more meaningful results. This study will examine one commercial product currently on the market entitled, The Singing-Reading Connection, by Raffi (1989). The presentation of the product will be varied. The investigator will compare word recall of preschoolers presented in a story-like format, a rhythmic format, and music format with and without visual prompts. The following research questions will be evaluated:

1. Is there a significant difference in recall scores when stimuli material is presented in a melodic, rhythmic, or story-like format with visual prompts?
2. Is there a significant difference in recall scores when stimuli material is presented in a melodic, rhythmic, or story-like format without visual prompts?

3. Is there a significant difference in recall scores among the three treatment groups with and without visual prompts?

Chapter III

Methodology

Subjects

Subjects for the study were 72 preschool children from six different day care centers in the Topeka, Kansas suburban area. Subjects ranged in age from three to six years. The mean age was five years and included 32 females and 40 males. Socioeconomic status of the subjects ranged from low to upper middle class at each of the day care centers; however, one facility used in the study provided services for a higher number (54%) of "at-risk" children than did the other facilities. Teacher-student ratio at the day care centers was approximately 1:12. Music programming in each facility ranged from no regularly scheduled music to music everyday though not by a trained music teacher. Commercially made tapes were used on days when music was part of the routine by the classroom teacher at all of the facilities. Five out of the six day care centers implemented a developmental approach to programming while one center strictly used the Montessori method. Each subject's parent or guardian returned a permission form describing the study's purpose and procedures before they were allowed to participate (See Appendix A).

Instructional Materials

A pilot study was conducted to determine the most appropriate song to be used in the current study. Three songs were tested with ten preschool aged subjects and one of the three appeared to be more

engaging both pictorially and musically. Three audio-cassettes were recorded by a male vocalist. Each audio-cassette recording was an adaptation of Raffi's original song "Down By The Bay" (1989). The audio-cassettes containing the melodic, rhythmic, and story-like presentations accompanied the visual prompts and no visual prompt conditions. An accompanying song card set, 11 by 17 inches in size, from Raffi at School: The- Singing Reading Connection (1989) series was used to accompany the audio-cassette recordings for three of the conditions (See Appendix B). Educational Network granted permission to use the song and the Song Card sets in the study (See Appendix C). The song contains 226 words however; only 48 words were preselected for recall. The words were selected after consultation with teachers at the various day care centers on the basis of age appropriateness of text and coordination of text with pictures.

Procedure

The song presentation order was random. Upon entering the testing room, subjects were asked to choose a card from a stack of cards that were numbered from one to six. These card numbers determined the presentation condition that would be administered during testing. Subjects selecting cards one through three would hear the text of the song presented melodically, rhythmically or story-like accompanied with the song cards containing the pictures of the text. Subjects selecting cards four through six would hear the text of the song presented melodically, rhythmically, or story-like without the song

cards. Each presentation condition was heard two times in succession and took approximately six minutes. After the second presentation, each subject was asked to try to recall any of the preselected words contained in the melodic, rhythmic, or story-like presentation condition either by free recall in which the researcher would ask the subject "Which words of the song or story can you remember? Can you say them for me?" or by using the clozure technique (Darrow, 1988) in which the subjects were asked to "Please fill in the missing words: Down by the _____ where the watermelons _____.

Subjects' responses were recorded on audio-cassette. All subjects followed the same procedures during each of the treatment conditions with the researcher using the materials and presentation style appropriate for the corresponding condition. To account for 100% reliability, total number of preselected words recalled by each subject during the free recall and clozure tests were calculated on paper (See Appendix D) after evaluation of the audio-cassette recordings. Raw data scores can be found in Appendix E. Based on these data, the following null hypotheses were either accepted or rejected, with a preselected alpha of .05:

H₀1: There will be no significant differences among the scores for words recalled by subjects in each of the three treatment groups with visual prompts.

H₁¹: There will be significant differences among the scores for words recalled by subjects in each of the three treatment groups with visual prompts.

H₀²: There will be no significant differences among the scores for words recalled by subjects in each of the three treatment groups without visual prompts.

H₁²: There will be significant differences among the scores for words recalled by subjects in each of the three treatment groups without visual prompts.

H₀³: There will be no significant differences among the scores for words recalled in each of the three treatment groups with and without visual prompts.

H₁³: There will be significant differences among the scores for words recalled in each of the three treatment groups with and without visual prompts.

Chapter IV

Results

The purpose of this study was to examine the effectiveness of a commercially made product containing a popular children's song adapted to a rhythmic, melodic and story-like format accompanied by visuals as a method to assist preschool aged children in the recall of preselected words. The independent variables were: (1) the style of presentation of information to each child - melodic, rhythmic, and story-like both with and without visuals. The dependent variable was the number of items recalled in each of the three presentation groups either by free recall or the clozure technique. The researcher used a 2 (prompt presence or absence) x 3 (lyric conditions) factorial analysis of variance to compare scores of the preschool children during melodic, rhythmic, and story-like conditions with and without visual prompts and among the treatment groups.

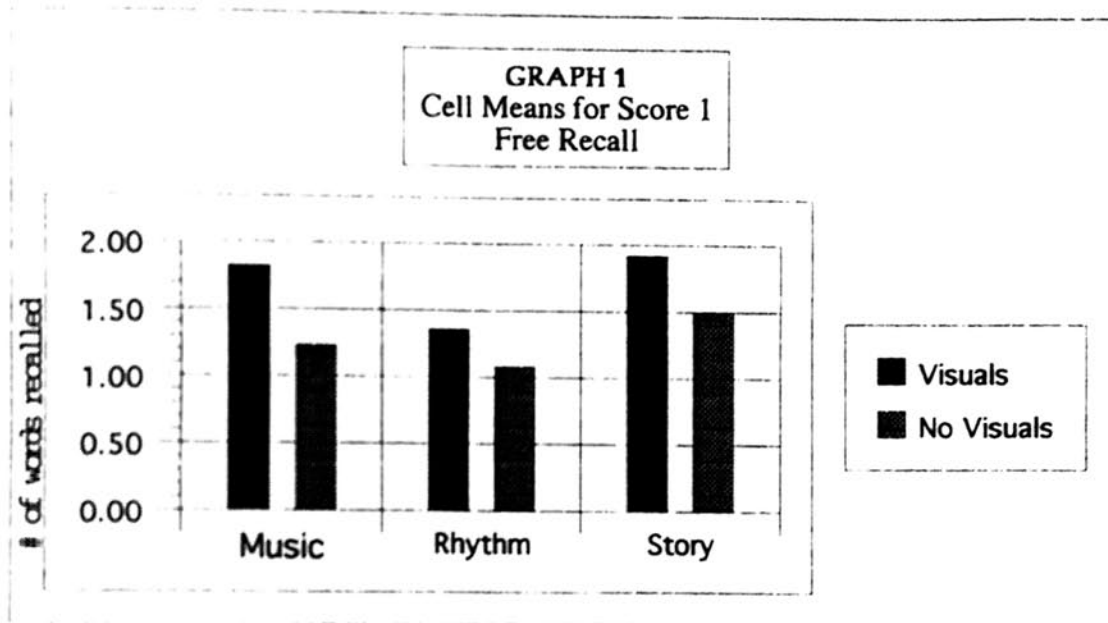
All null hypotheses failed to be rejected at the .05 level except for the third null hypothesis in regard to score 2 (clozure technique). Results are displayed in Table 1. A significant main effect did occur at the .05 level for score 2 when visuals and no visual conditions were compared.

Table 1

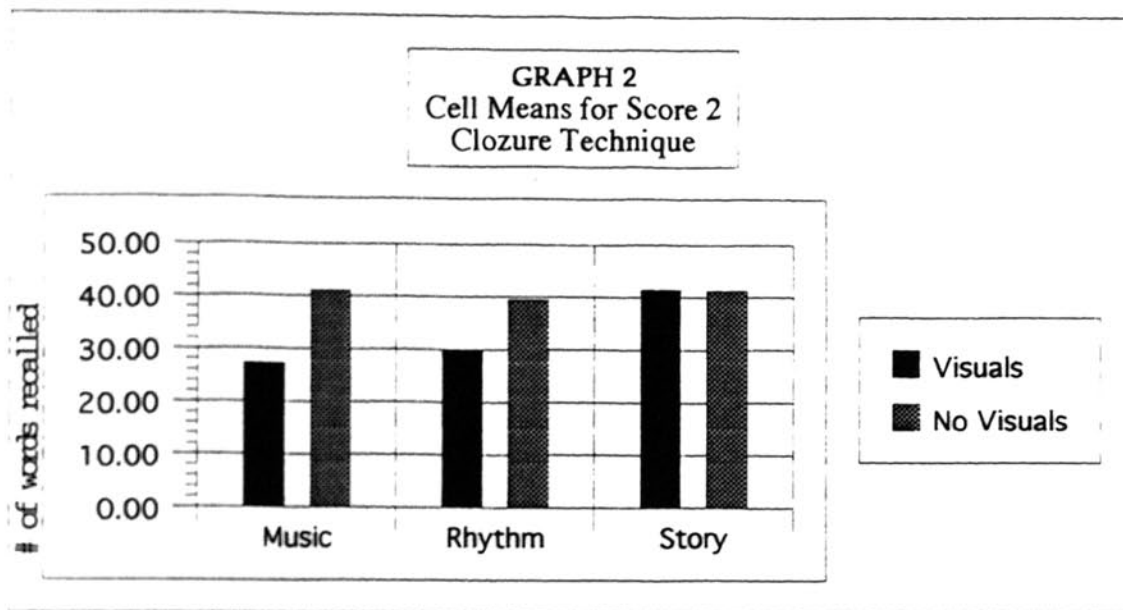
Summary Table of Analyses of Variance with Group Presentation Style and Visuals as the Independent Variables and Recall Score 2 as the Dependent Variable

Source	SS	df	ms	F	p
Main Effects	1723.45	3	574.48	4.15	.009
Visual	1050.76	1	1050.76	7.59	.008*
Treatment	739.33	2	369.66	2.67	.076
2-Way Interaction					
VIS/TX	619.98	2	309.99	2.24	.114
Explained	2343.43	5	468.68	3.38	.009
Residual	9126.34	66	138.27		
Total	11469.77	71	161.54		

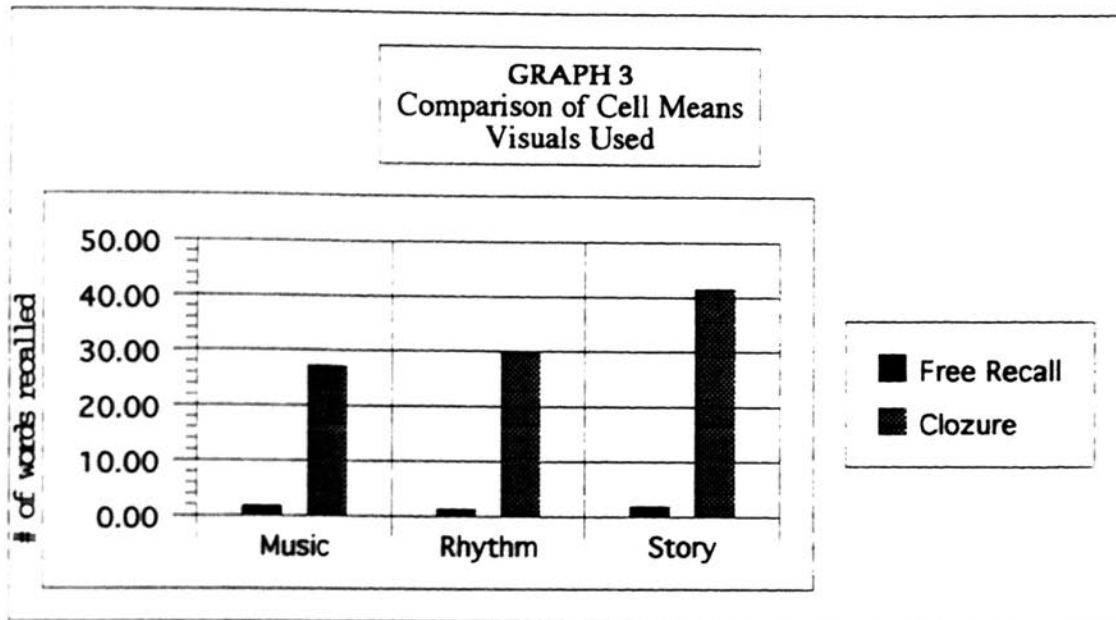
(p < .05)



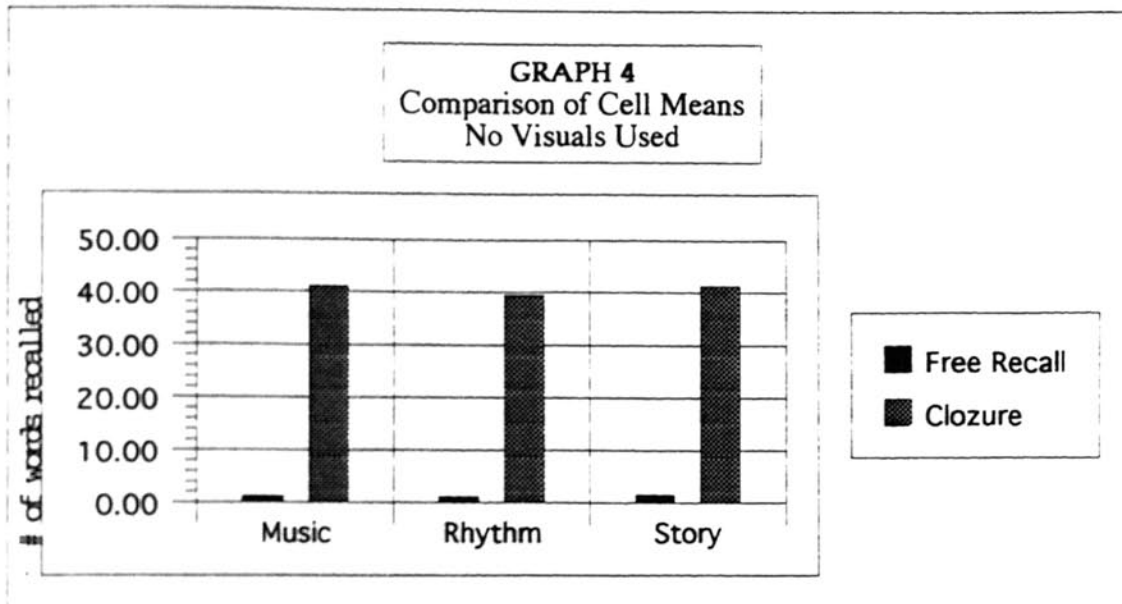
Graph 1 compares cell means for score 1 (free recall) when visuals and no visuals were utilized during treatment presentations. The results indicate that in all three conditions, the use of visuals enhanced free recall. The story-like presentation paired with visuals seemed to enhance free recall of words more than when melodic or rhythmic elements were paired with visuals.



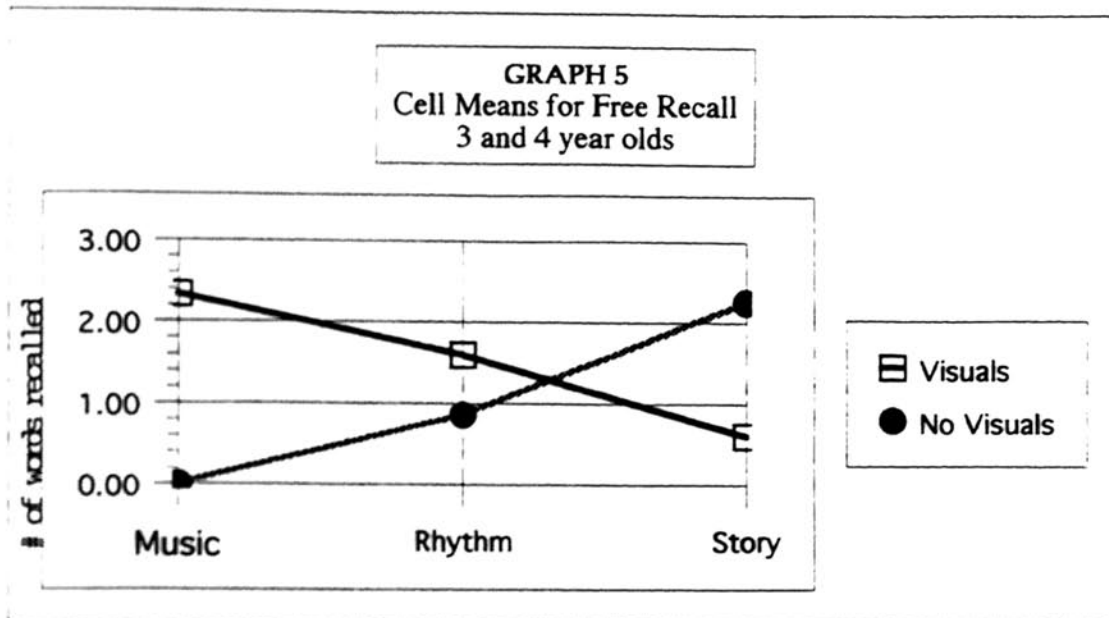
Graph 2 compares cell means for score 2 (clozure technique) when visuals and no visuals were used during treatment presentations. Visuals had no effect on recall scores when the story-like condition was presented. The melodic and rhythmic presentation conditions had more of an effect on recall scores without visuals.



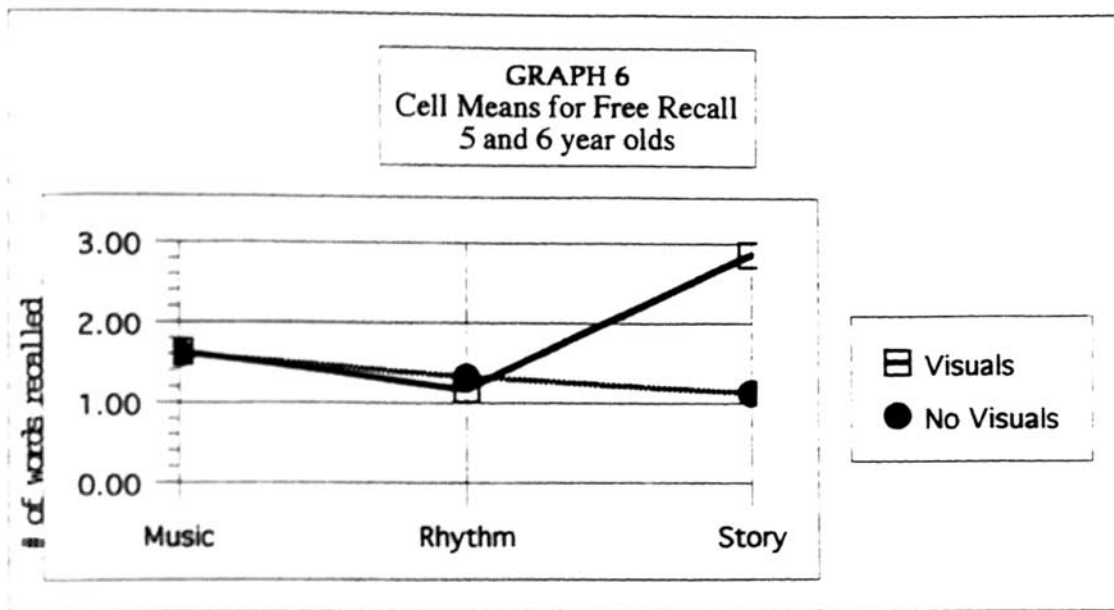
Graph 3 compares the cell means for score 1 (free recall) and 2 (clozure technique) when visuals were presented during the melodic, rhythmic, or story-like conditions. Results of the clozure test indicate a greater increase in the number of words recalled than in the free recall test when visuals were used during all three conditions. The story-like presentation condition seemed to enhance recall more effectively than either the rhythmic or music conditions when visuals were used.



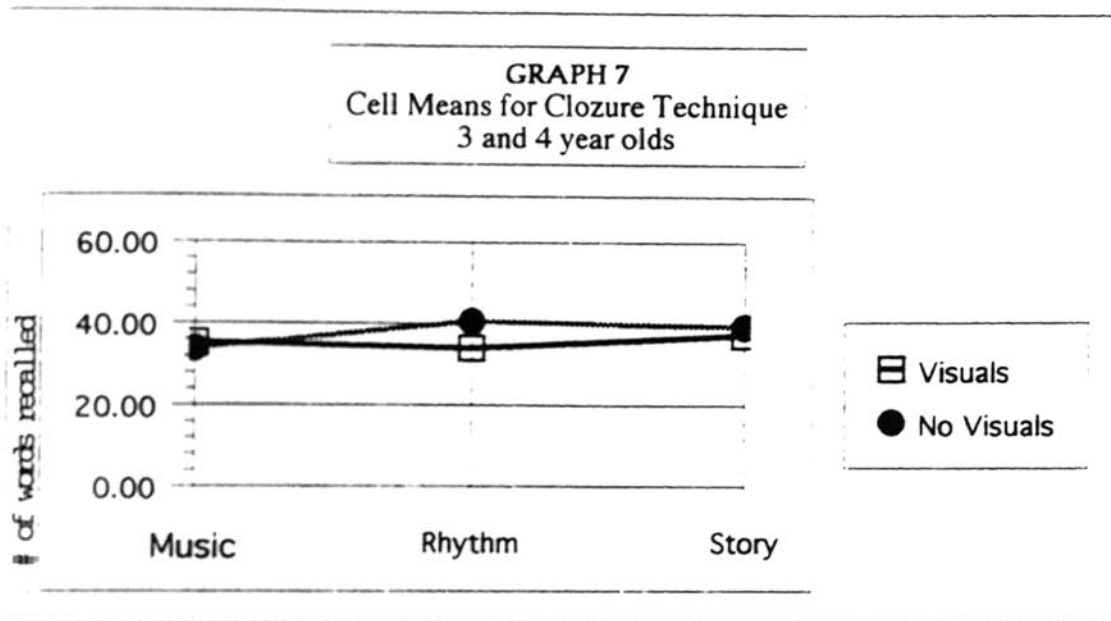
Graph 4 compares the cell means for score 1 (free recall) and 2 (clozure technique) when visuals were not presented during the treatment conditions. Results indicate that treatment conditions may have not had as much of an effect on recall as the clozure test itself. Approximately the same number of words were recalled in all three conditions in both the free recall test and the clozure test when no visuals were used.



Graph 5 is included not to represent statistical significance because age was not a factor among the research questions, but to show trends among preschool age groups for possible future research. The results represented in Graph 5 seem to indicate that for score 1, the melodic presentations accompanied with visuals enhanced free recall of words better among 3- and 4-year olds than either the rhythmic or story-like conditions accompanied with visuals. When no visuals were used, the melodic condition seemed to produce the fewest number of words recalled while the story-like condition produced the greatest number of words recalled.

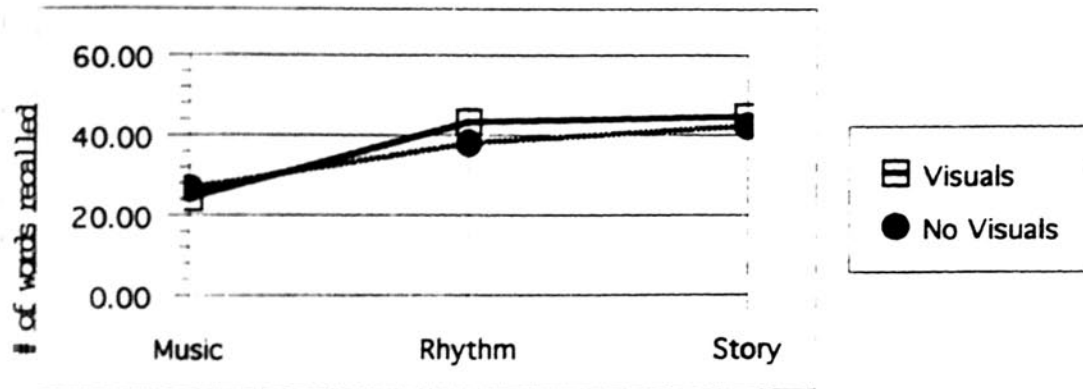


Graph 6 shows results when free recall was used in testing recall among 5- and 6-year olds. The results indicate that the story-like condition accompanied with visual prompts enhanced free recall better than either the melodic or rhythmic conditions accompanied with visual prompts. The melodic and rhythmic presentations accompanied with visuals prompted approximately the same number of words during recall whether or not visuals were used.



Graph 7 shows results when clozure technique was used in testing recall among the 3- and 4- year olds. Little difference occurred between the melodic and story-like conditions whether or not visual prompts were used. The rhythmic condition, however, enhanced recall of words better than either the melodic or story-like conditions without the use of visual prompts among the 3- and 4- year olds.

GRAPH 8
Cell Means for Clozure Technique
5 and 6 year olds



Graph 8 shows results when the clozure technique was used in testing recall among the 5- and 6- year olds. The story-like condition seemed to enhance recall slightly better than either the melodic or rhythmic conditions whether or not visuals were used. Following closely in recall was the rhythmic condition followed by the melodic presentation condition.

Chapter V

Discussion and Summary

The purpose of this study was to examine the effectiveness of a commercially made product that was adapted rhythmically, melodically and story-like accompanied with and without visual prompts on preschool children's ability to recall song lyrics. Results revealed only one statistical difference, which was found in clozure technique scores when visuals were compared to no visuals across treatments. Cell means for free recall and clozure technique scores indicate that text presented in a story-like manner accompanied with visuals may enhance recall of words more than text presented without visuals. In addition, the melodic and rhythmic presentation conditions enhanced recall of words more effectively without visuals. This finding is in agreement with Connor's (1991) study in which melodic, rhythmic and story-like presentation styles were effective in recalling preselected words. Discussing these findings in relation to similar findings from past research on the use of music, rhythm, and visuals prompts as mnemonic devices to enhance recall may help in the interpreting the data.

Hicks (1987) found that rhythmic presentation conditions were more effective in facilitating recall of specific information. Efficient functioning of memory relies on organization. Encoding and retrieval cues are also vital in how information is processed and recalled.

In this study, though not statistically significant, the melodic and rhythmic presentation conditions without the use of visuals were more effective in enhancing recall of the preselected words than with the visual prompts. These results are also similar to those of Lathom (1971) who found that songs and poems which contained a high degree of organization and repetition increased probability of recall. Chazin and Newschatz (1990) also found that subjects exposed to information sung recalled more names of minerals than subjects given the information in a lecture format.

In addition to melody and rhythm, visual prompts played a role in enhancing recall scores across treatments. This finding is similar to the findings of Haring and Fry (1979), Levie and Lentz (1982), Readence and Moore (1980) who found pictures that accompany text facilitate recall of that content. The color pictures used to accompany the melodic, rhythmic, and story-like presentation conditions may have heightened motivation and interest or helped summarize the content of the prose. The researcher noted subjects exposed to the treatment conditions involving the visual prompts, fixated on the picture song cards depicting the text. Levin and Berry (1980) also found subjects exposed to cartoon-type line drawings recalled more prose than those not exposed to the drawings.

The recall technique known as "clozure" also helped the children recall specific words during testing. The researcher observed the children having difficulty when asked for free recall of song, rap, or

story-like lyrics. When the investigator utilized clozure technique during the individual testing of the children, recall increased. Therefore, clozure technique is recommended as a strategy for enhancing recall.

In addition, melodic phrases of the song were organized using specific animals and actions that rhymed. When subjects were asked to recall a specific animal, the rhyming action word accompanying the animal was also recalled. This is consistent with Lathom's (1971) study in which songs, stories and poems containing a high degree of organization and melodic or verbal repetition increased probability of recall. In addition, it should be noted the clozure test in and of itself was organized into rhythmic patterns and repetitions which may explain why scores from this test were higher than scores from the free recall test.

Trends among the different age groups of preschoolers seem to indicate that music when accompanied with visuals enhanced free recall better among the 3- and 4-year olds than either the rhythm or story-like conditions when paired with visuals. For the 5- and 6- year-olds, however, free recall of words were enhanced by the story condition paired with visuals. These results are in keeping with Guttman, Levine and Pressley (1977) who found that narrative prose recall was enhanced by pictures with children in grades K, 2 and 3. Levine and Lesgold (1978) also found that prose recall was enhanced when pictures of the story overlapped the narrative passages read

orally. Finally, the use of the clozure technique enhanced recall of words more effectively than using free recall across all age groups.

Implications

The results of this study indicate that commercially made picture-songbooks may be an effective teaching tool in the preschool classroom. Overall, it appears that preschool aged children can benefit from information received through musical, rhythmic and story-like means. The story-like condition seemed to enhance recall of words more than either the melodic or rhythmic conditions when visuals were used. This finding may encourage teachers to include reading books in their daily classroom activities that contain colorful pictures. In addition, the use of music and/or rhythm to accompany text may also be helpful in conveying information in the classroom.

Summary

Mnemonic devices such as music and rhythm have been used to aid recall of different types of information. In recent years there has been a surge of commercially made musical products that convey information to attract the attention of both teacher and parent. It is believed that when information is presented in a meaningful and interesting way the child will be more motivated to listen and learn; thus, information is recalled and retained. Little empirical data exists, however, to add to the credibility of such commercially made products. The primary purpose of this study was to examine the effectiveness of a musical media picture book as a method for aiding recall of preschool

aged children. Information was presented in melodic, rhythmic, and story-like format with and without pictures to determine which presentation was more effective in aiding recall. Though results of this research did not indicate a statistically significant difference between the three presentation styles for both scores, recall scores were significant for the clozure technique scores when visuals were used across treatments. The story-like style accompanied with visual prompts appeared to have played a role in producing recall of selected words. In addition, text presented melodically and rhythmically without visual prompts may also be effective in enhancing recall.

The researcher proposes that the best combination for recall is when melody, rhythm and visuals are utilized together. More subjects in each of the presentation groups is suggested for future research to determine the effectiveness of presentation styles for recall. In addition, the type of test used for obtaining recall of information also needs to be examined. In this experiment, the clozure test played an important role in enhancing recall among all the preschoolers.

Many factors need to be considered when presenting information to very young children. The information being conveyed, and quality of the musical product and the visuals used to accompany the text are just some of the factors to be considered. The commercially made product in this study is just one of many musical products on the market today. Other products may produce different results. In addition, testing was conducted only at day care centers. Testing

preschoolers attending other facilities may have produced different findings.

Additional suggestions for further research include testing for specific age and gender differences and conducting a similar experiment using children with mental retardation. Results of this study are preliminary in the examining of using music and rhythm paired with visuals to enhance recall of specific information. Parents, teachers, and others interested in determining what methods are appropriate for preschool-aged children to learn and retain information will benefit by continued research in this area.

REFERENCES

- Anderson J. R. (1985). Becoming a nation of readers: The report of the omission on reading. Washington: The National Institute of Education.
- Appel, L. F., Cooper, R. G., McCarrell, N., Sims-Knight, J., Yussen, S. R., & Flavell, J. H. (1972). The development of the distinction between perceiving and memorizing. Child Development, 43, 1365-1381.
- Atkinson, R. C., & Shiffrin, R. M. (1971). The control of short-term memory. Scientific American, 225, 82-90.
- Baine, D. (1986). Memory and Instruction. Englewood Cliffs, NJ: Educational Technology Publications.
- Bartlett, J. C. & Snelus, P. (1980). Lifespan memory for popular songs. American Journal of Psychology, 93, (3), 551-560.
- Belezza, F. S. (1981). Mnemonic devices: Classification, characteristics, and criteria. Review of Educational Research, 51, 247-275.
- Bower, G. H. (1972). Mental imagery and associative learning. In L.W. Gregg (Ed.), Cognition in learning and memory. New York: Wiley.
- Bransford, J. D., & Johnson, M. K. (1972). Contextual prerequisites for understanding: Some investigations of comprehension and recall. Journal of Verbal Learning and Verbal Behavior, 11, 717-726.

- Brown, A. L. (1975). Recognition, reconstruction and recall of narrative sequences by preoperational children. Child Development, 46, 156-166.
- Brown, A., Bransford, J., Ferrara, R., & Campione, J. (1983). Learning, remembering, and understanding. In P. Mussen (ed.), Handbook of Child Psychology (vol. 3). New York: Wiley.
- Brown, A. L., & Scott, M. S. (1971). Recognition memory for pictures in preschool children. Journal of Experimental Child Psychology, 24, 191-211.
- Butler, D. & Clay, M. (1979). Reading begins at home. Exeter: Heinemann.
- Chazin, S., & Neuschatz, J. S. (1990). Using a mnemonic to aid in the recall of unfamiliar information. Perceptual and Motor Skills, 71, 1067-1071.
- Connor, C. G. (1990). Investigation of music as an aid to memory with preschool children. Unpublished thesis, University of Kansas, Lawrence.
- Cowan, N., K. Suomi & P. A. Morse. (1982). Echoic storage in infant perception. Child Development, 53, 984-990.
- Craik, F. I. M., & Lockhart, R. (1972). Levels of processing: a framework for memory research. Journal of Verbal Learning and Verbal Behavior, 11, 671-684.
- Darrow, A. A. (1988). Clozure technique. In C. E. Furman (Ed.), Effectiveness of music therapy procedures: Documentation of

- research and clinical practice. Washington, D. C.: The National Association for Music Therapy, Inc.
- Darwin, C. J., Turvey, M. T., & Crowder, R. G. (1972). An auditory analogue of the Sperling partial-report procedure: Evidence for brief auditory storage. Cognitive Psychology, 3, 255-267.
- Delin, P. (1969). Learning and retention of English words with successive approximations to a complex mnemonic instruction. Psychonomic Science, 17, 87-88.
- Doake, D. B. (1986). Learning to read: It starts in the home. In D. Tovey & J. Kerber (Eds.), Roles in Literacy Learning. 2-9. Newark, Delaware: IRA.
- Durkin, D. (1966). Children who read early. New York: Teachers College Press.
- Ernest, C. (1977). Imagery ability and cognition: A critical review. Journal of Mental Imagery, 2, 181-216.
- Evertson, M., & Wicker, F. (1974). Pictorial concreteness and mode of elaboration in children's learning. Journal of Experimental Child Psychology, 17, 264-270.
- Flavell, J. H. (1971). First discussant's comments: What is memory development the development of? Human Development, 14, 272-278.
- Flavell, J. H., Beach, D. R., & Chinsky, J. M. (1966). Spontaneous verbal rehearsal in a memory task as a function of age. Child Development, 37, 283-299.

- Flavell, J. H. & Wellman, H. M. (1977). Developmental studies of mediated memory. In H. Reese & L. Lipsitt (eds) Advances in Child Development and Behavior, Vol. 5. New York: Academic Press.
- Flavell, J. H. (1985). Cognitive Development (2nd ed.) Englewood Cliffs, N. J. : Prentice-Hall.
- Flood, J. (1977). Parental styles in reading episodes with young children. The Reading Teacher, 30, (9), 160-166.
- Gardner, H. (1983). Frames of mind: the theory of multiple intelligence. New York: Basic Books, Inc., Publishers.
- Gfeller, K. E. (1983). Musical mnemonics as an aid to retention with normal and learning disabled students. Journal of Music Therapy, 20, 4, 179-189.
- Goodman, K. (1986). What's Whole in Whole Language? Portsmouth: Heinemann.
- Guralnik, D. B. (1956). Webster's New World Dictionary. The World Publishing Company, Cleveland & New York.
- Guttman, J., Levin, J. R., & Pressley, G. M. (1977). Pictures, partial pictures and young children's oral prose learning. Journal of Educational Psychology, 69, 473-480.
- Haring, M. J., & Frye, M. A. (1979). Effect of pictures on children's comprehension of written text. Educational Communication and Technology Journal, 27, 185-190.

- Heath, S. B. (1986). What no bedtime story means: narrative skills at home and school. In B. B. E. Schieffelin & E. Ochs (Eds.), Language socialization across cultures. 97-124. Cambridge: Cambridge University Press.
- Hicks, P. T. (1987). The relationship between an oral rhythmic style of communication (rap music) and learning in the urban preschool. San Antonio, TX: Paper presented at the Annual Meeting of the Association for Education in Journalism and Mass Communication. (ERIC Document Reproduction Service No. ED 283 200)
- Higbee, K. L. (1979). Recent research on visual mnemonics: Historical roots and educational traits. Review of Educational Research, 49, 611-629.
- Higgins, L. C. (1980). Literalism in the young child's interpretation of pictures. Educational Communication and Technology, 28, 99-119.
- Holdaway, D. (1979). The foundations of literacy. Sydney: Ashton Scholastic.
- Holmes, P., & Murray, D. (1974). Free recall of sentences as a function of imagery and predictability. Journal of Experimental Psychology, 102, 748-750.
- Holyoak, K., Hogeterp, H., & Yuille, C. (1972). The developmental comparison of verbal and pictorial mnemonics in paired associate learning. Journal of Experimental Child Psychology, 14, 53-65.

- Inhelder, B. (1969). Memory and intelligence in the child. In D. Elkind & J. Flavell (Eds.), Studies in cognitive development. New York: Oxford University Press.
- Isern, B. (1959) . The influence of music upon the memory of mentally retarded children. Unpublished thesis, University of Kansas, Lawrence.
- Istomina, Z. M. (1975). The development of voluntary memory in preschool age children. Soviet Psychology, 13, 5-64.
- Istomina, Z. M. (1982). The development of voluntary memory in children of preschool age. In U. Neisser (Ed.), Memory observed; Remembering in natural contexts. San Francisco: W. H. Freeman.
- Kail, R. (1979). The development of memory in children. San Francisco: W. H. Freeman.
- Kail, R. V., & Siegal, A. W. (1977). Sex differences in retention of verbal and spatial characteristics of stimuli. Journal of Experimental Child Psychology, 23, 341-347.
- Kau, A. S. M., & Winer, G. A. (1987). Incidental learning in young children tested with words or words plus pictures as stimuli. Journal of Experimental Child Psychology, 43, 359-366.
- Kreutzer, M., Leonard, C., & Flavell, J. (1975). An interview study of children's knowledge about memory. Monographs of the Society for Research in Child Development, 40, (1, Serial No. 159).

- Lamme, L. L. (1990). Exploring the world of music through picture books. The Reading Teacher, 44, (4), 294-300).
- Lathom, W. B. (1971). Retarded children's retention of songs, stories, and poems. Unpublished doctoral dissertation, University of Kansas, Lawrence.
- Lefrancois, G. R. (1973). An introduction to child development. Wadsworth Publishing Company.
- Lesgold, A. M., Degood, H., & Levin, J. R. (1977). Pictures and young children's prose learning: A supplementary report. Journal of Reading Behavior, 9, 353-360.
- Levie, W. H., & Lentz, R. (1982). Effects of text illustrations: A review of research. Educational Communication and Technology Journal, 30, 195-232.
- Levin, J. R. (1976). What have we learned about maximizing what children learn? In J. R. Levin & V. L. Allen (Eds.), Cognitive learning in children: Theories and strategies. New York: Academic Press.
- Levin, J. R., & Berry, J. K. (1980). Children's learning of all the news that's fit to picture. Educational Communication & Technology Journal, 28, 177-185.
- Levin, J. R. (1981). The mnemonic '80's: Keywords in the classroom. Educational Psychologist 16, 65-82.

- Levin, J. R., & Lesgold, A. M. (1978). On pictures in prose. Educational Communications and Technology Journal, 26, 233-243.
- Levin, J. R., Bender, B. G., & Pressley, M. (1979). Pictures, imagery and children's recall of central versus peripheral sentence information. Educational Communication and Technology, 27, 89-95.
- Lorayne, H., & Lucas, J. (1974). The memory book. New York: Stein and Day.
- Mackworth, N. H., & Bruner, J. S. (1970). How adults and children search and recognize pictures. Human Development, 13, 149-177.
- Martinez, M. & Roser, N. (1985). Read it again: The value of repeated readings during storytime. The Reading Teacher, 38, (8), 782-786.
- McCullaugh, J. (1986, July). Spotlight on kid vid. Billboard, pp. k1-k20.
- Miller, E. J. (1973). Cross-cultural research in the perception of pictorial materials. Psychological Bulletin, 80, 135-150.
- Miller, G. E. & Pressley, M. (1987). Partial picture effects on children's memory for sentences containing implicit information. Journal of Experimental Child Psychology, 43, 300-310.
- Miller, P. H. (1983). Theories of developmental psychology. San Francisco: W. H. Freeman.

- Miller, G. A. (1956). The magical number seven, plus or minus two: Some limits on our capacity for processing information. Psychological Review, 63, 81-97.
- Morton, L. L., J. R. Kershner, & L. S. Siegal (1990). The potential for therapeutic applications of music on problems related to memory and attention. Journal of Music Therapy, 27, 4, 195-208.
- Murphy, M. D., & Brown, A. L. (1975). Incidental learning in preschool children as a function of level of cognitive analysis. Journal of Experimental Child Psychology, 19, 509-523.
- Myatt, B., & Carter, J. M. (1979). Picture preference of children and young adults. Educational Communication and Technology Journal, 27, 45-53.
- Myers, N., & Perlmutter, M. (1978). Memory in the years from two to five. In P. Ornstein (Ed.), Memory development in children. Hillsdale, N. J.: Lawrence Erlbaum Associates.
- Neisser, U. (1969). The role of rhythm in active verbal memory: Serial intrusions. American Journal of Psychology, 82, 540-546.
- Neisser, U. (1982). Memory: What are the important questions? In U. Neisser (Ed.), Memory observed: Remembering in natural contexts. San Francisco: W. H. Freeman.
- Norman, D. A. (1982). Learning and memory. New York: W. H. Freeman.
- Piaget, J., & Inhelder, B. (1973). Memory and intelligence. New York: Basic Books.

- Poling, A., Schlinger, H., Starin, S., & Blakely, E. (1990).
Psychology: A behavioral overview. New York: Plum Press.
- Pressley, M. (1977). Imagery and children's learning: Putting the picture in developmental perspective. Review of Educational Research, 47, 585-622.
- Prickett, C. A. (1974). A comparison of two rhythm patterns as aids to digit recall. Unpublished master's thesis, Florida State University, Tallahassee.
- Prickett, C. A. & Moore, R. S. (1991). The use of music to aid memory of alzheimers patients. Journal of Music Therapy, 28, 101-110.
- Raffi. (1989). Singing-Reading Connection. Educational Network, California, Hilmar.
- Readence, J. E., & Moore, D. W. (1980). A meta-analysis of research on the effect of adjunct aids on learning from text. Paper presented at the annual convention of the American Educational Research Association, Boston.
- Reese, H. W. (1977). Imagery and associative memory. In R. Kail & J. Hagen (Eds.), Perspectives on the development of memory and cognition. Hillsdale, N. J. : Lawrence Erlbaum Associates.
- Ridout, S. R. (1990). Harmony in the classroom: using songs to teach reading and writing.

- Ross, L., & Ross, S. (1981). The visual scanning and fixation behavior of the retarded. International Review of Research in Mental Retardation, 10, 1-30.
- Rowen, B., Byrne, J., & Winter, R. (1980). The learning match: A developmental guide to teaching young children, Englewood Cliffs, NJ: Prentice Hall.
- Rubin, D. C. (1977). Very long-term memory for prose and verse. Journal of Verbal Learning and Verbal Behavior, 16, 611-621.
- Ryan, J. (1969). Grouping and short-term memory: Different means and patterns of grouping. Quarterly Journal of Experimental Psychology, 21, 137-147.
- Seifert, K. L., & Hoffnung, R. J. (1987). Child and Adolescent Development, Houghton Mifflin Company, Boston.
- Sarafine, M. L., Davidson, J., Crowder, R.G., & Repp, B. H. (1984). Integration of melody and text in memory for song. Cognition, 16, 285-303.
- Serpell, R. (1976). Culture's influence on behavior. London: Methuen.
- Shallert, D. L. (1980). The role of illustrations in reading comprehension. In R. J. Spiro, B. C. Bruce, & W. F. Brewer (Eds.), Theoretical issues in reading comprehension: Perspectives from cognitive psychology, linguistics, artificial intelligence, and education (pp. 503-524). Hillsdale, NJ: Erlbaum.

- Siegal, I. E. (1978). The development of pictorial comprehension. In R. S. Randhawa & W. E. Coffman (Eds.), Visual learning, thinking and communication. New York: Academic Press.
- Sloboda, J. (1985). The musical mind: The cognitive psychology of music. Oxford psychology series; no. 5). Oxford: Clarendon Press.
- Smith, C. (1988). The expanding role of parents. The Reading Teacher, 42, (1), 68-69.
- Smith, D. S. (1991). A comparison of group performance and song familiarity on cued recall tasks with older adults. Journal of Music Therapy, 27, (1), 2-13.
- Soiferman, L. K. (1991). The efficacy of a program for teaching parents how to read to low-achieving school-aged children to increase their word recognition and comprehension. 182 p.; M. S. Thesis, University of Manitoba (Canada).
- Sperling, G. A. (1960). The information available in brief visual presentations. Psychological Monographs, 74, 1-29.
- Staples, S. M. (1968). A paired-associates learning task utilizing music as the mediator: an exploratory study. Journal of Music Therapy, 5, 53-57.
- Stevenson, H. W., Parker, T., & Wilkinson, A. (1975). Ratings and measures of memory processes in young children. Unpublished manuscript, University of Michigan.
- Stevenson, H. W. (1972). Children's Learning. Englewood Cliffs, N.J.: Prentice-Hall.

- Tansley, A. E. (1986). *Perceptual Training: Educational Development Programs*, Communication Skill Builders, Inc.
- Teale, W. (1984). Reading to young children: Its significance for literacy development. In H. Goelman, A.A. Oberg & F. Smith (Eds.), Awakening to literacy, 110-121. Exeter, N. H.: Heinemann.
- Teale, W. (1987). Emergent Literacy: Reading and writing development in early childhood. Literacy in learning: Merging Perspectives. 36th yearbook, National Reading Conference.
- Travers, R. M. W., & Alvarado, V. (1970). The design of pictures for children in elementary school. AV Communication Review, 18, 47-64.
- Vurpillot, E. (1968). The development of scanning strategies and their relation to visual differentiation. Journal of Experimental Child Psychology, 6, 632-650.
- Wellman, H. M. (1977). The early development of intentional memory behavior. Human Development, 20, 86-101.
- Wellman, H. M., Ritter, K., & Flavell, J. H. (1975). Deliberate memory behavior in the delayed reactions of very young children. Developmental Psychology, 11, 780-787.

- Yendovitskaya, T. V. (1971). Development of memory. In A.V. Zaporozhets & D.B. Elkonin, (Eds.), The psychology of preschool children. Cambridge, Mass.: MIT Press.
- Zimmerman, M. P. (1984). State of the Art in Early Childhood Music and Research. Paper presented at Music in Early Childhood Conference at Brigham Young University, Provo, Utah.

Appendix A
Permission Form

THE UNIVERSITY OF KANSAS
Department of Art and Music Education and Music Therapy
311 Bailey Hall
Lawrence, Kansas 66045-2344
(913) 864-4784

The Music Education/Therapy Department at the University of Kansas supports the practice of protection for human subjects participating in research. The following information is provided for you to decide whether you wish your son/daughter to participate in the present study. You should be aware that even if you let your child participate, you are free to have them withdraw at any time without penalty.

It appears through past research that music and the structure of music may be used to aid aural recall and retention skills among preschool-aged children. The present study will explore the possibilities presenting subjects with different auditory conditions and testing for immediate recall. Answers to research questions may suggest a strategies that may be used by preschool classroom teachers when presenting new material to students that needs to be recalled.

Your child will volunteer to listen to a taped story that involves various animals down by the bay. The story will either be sung, rhythmically spoken, or told in a story-like format. Immediately following the presentation of the text, the researcher will administer a test to each subject that the subject can answer orally. The subject's responses will be recorded both on paper and by audio-cassette. The administration of the test will be to evaluate aural recall accuracy of preselected words.

The participation of your son/daughter is solicited although strictly voluntary. We assure you that your child's name will not be associated in any way with the research findings. The information you and your child provide will be identified by a code number, and will be destroyed after the study. has been completed. If you wish, you will be provided with information concerning your child's responses and the results of the study.

If you would like additional information concerning the study before or after it is complete, please feel free to contact me at the address or telephone listed below.

You will be given a copy of this consent form.

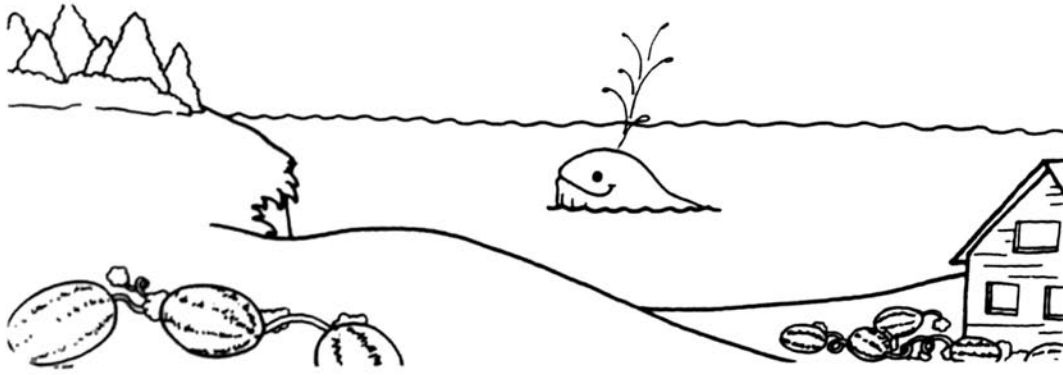
Sincerely,

Shirley Davis

Principal Investigator
311 Bailey Hall
University of Kansas
Lawrence, KS 66045
(913)/ 864-4784

Signature of Parent or Guardian of participant

Appendix B
Song Card Set

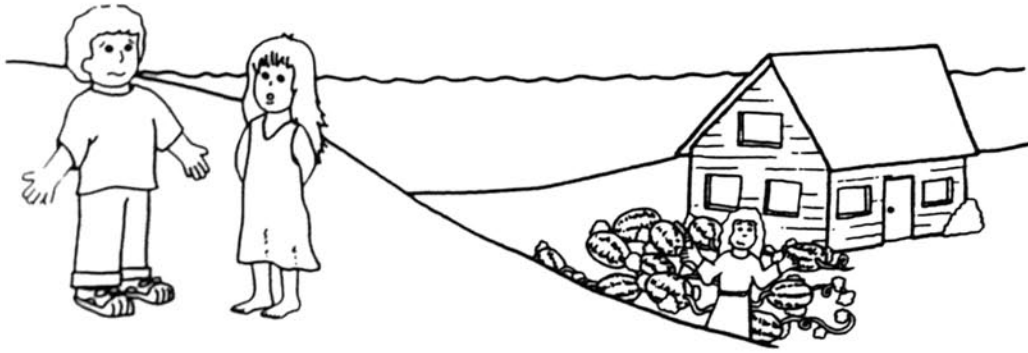


DOWN BY THE BAY

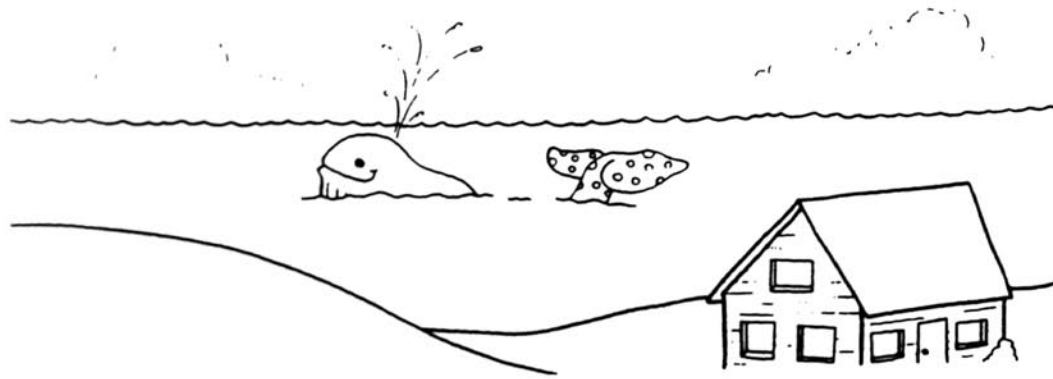
Traditional
Illustration: Dawn I. Jodanis
© 2000 by Learning 2 Go
Parent of Traditional Books, L.L.C.

From the United Nations *RIGHTS OF THE CHILD*:

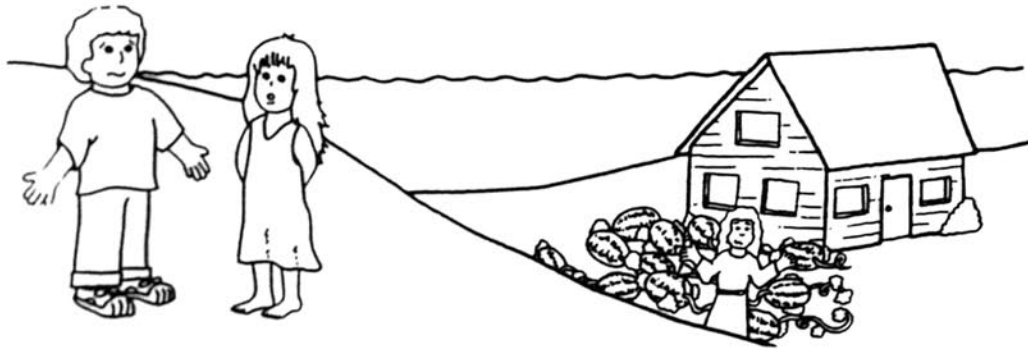
*Each child has the right:
to affection, love and understanding
to adequate nutrition
to learn to be a useful member of society
and to develop individual abilities
to be brought up in a spirit of peace
and universal brotherhood.*



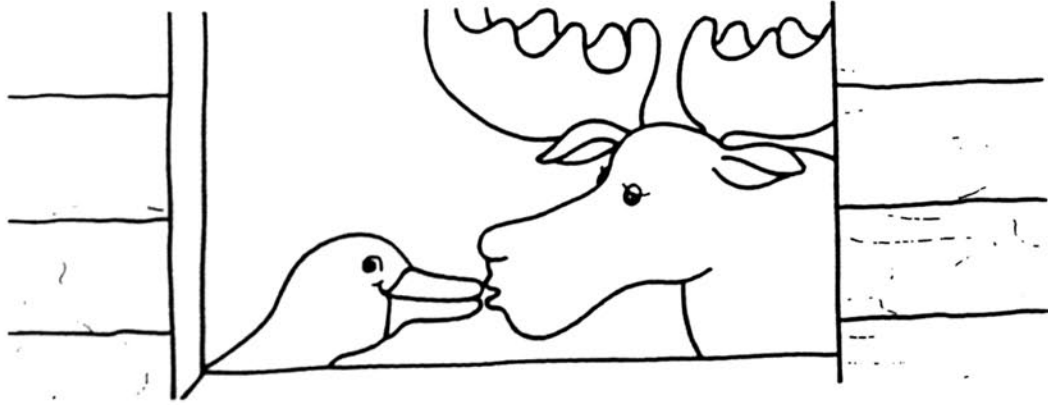
**Down by the bay, where the watermelons grow,
Back to my home I dare not go.
For if I do my mother will say,**



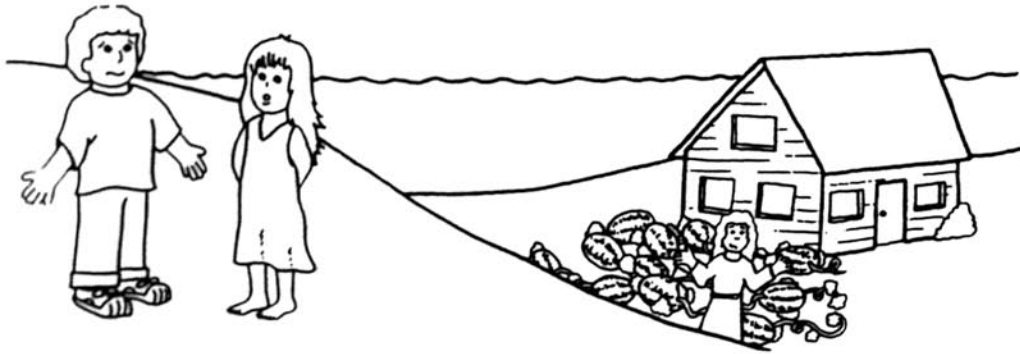
**“Did you ever see a whale
with a polka-dot tail,
Down by the bay?”**



**Down by the bay, where the watermelons grow,
Back to my home I dare not go.
For if I do my mother will say,**



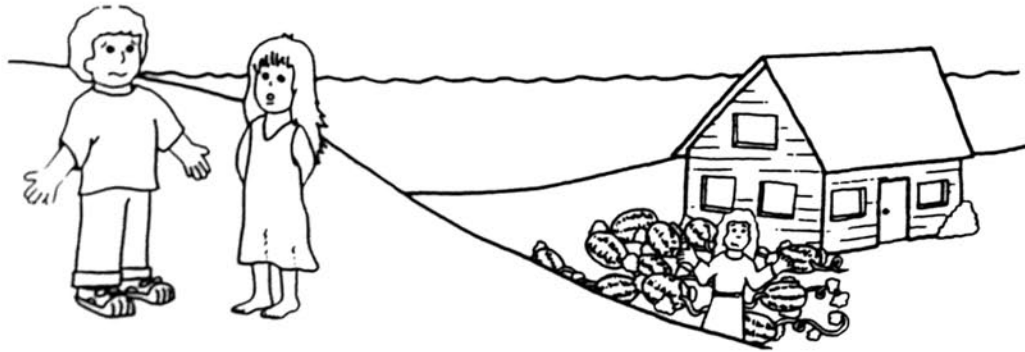
**“Did you ever see a goose
kissing a moose,
Down by the bay?”**



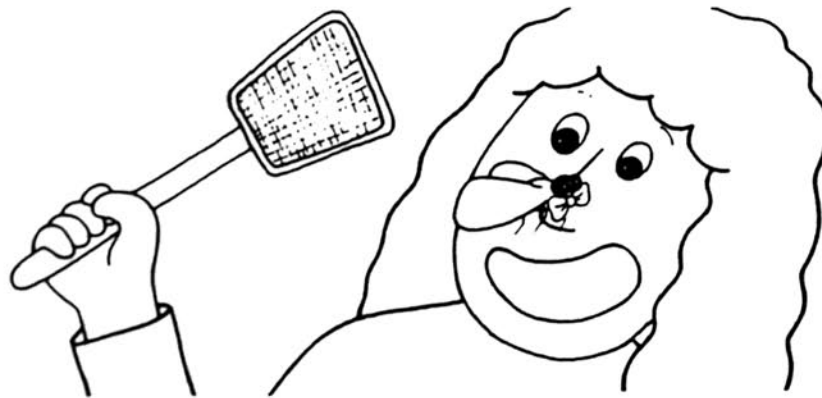
**Down by the bay, where the watermelons grow,
Back to my home I dare not go.
For if I do my mother will say,**



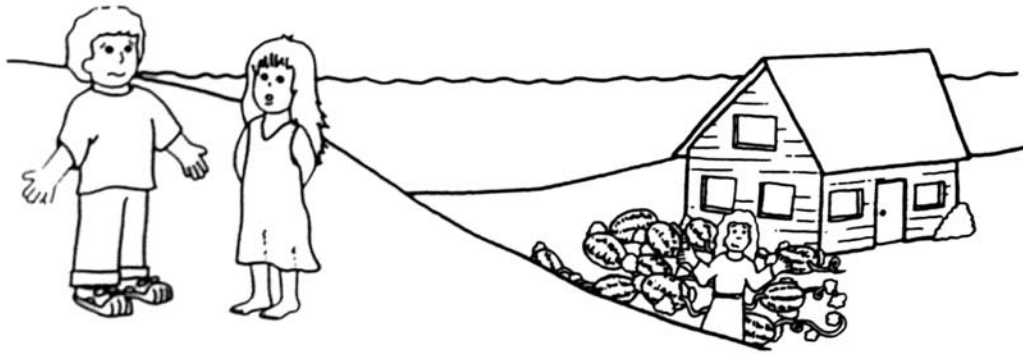
**“Did you ever see a bear
combing his hair,
Down by the bay?”**



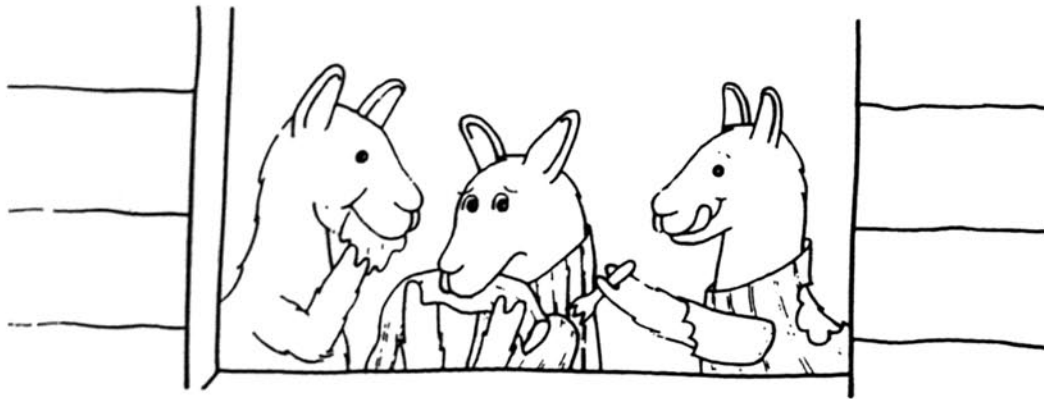
**Down by the bay, where the watermelons grow,
Back to my home I dare not go.
For if I do my mother will say,**



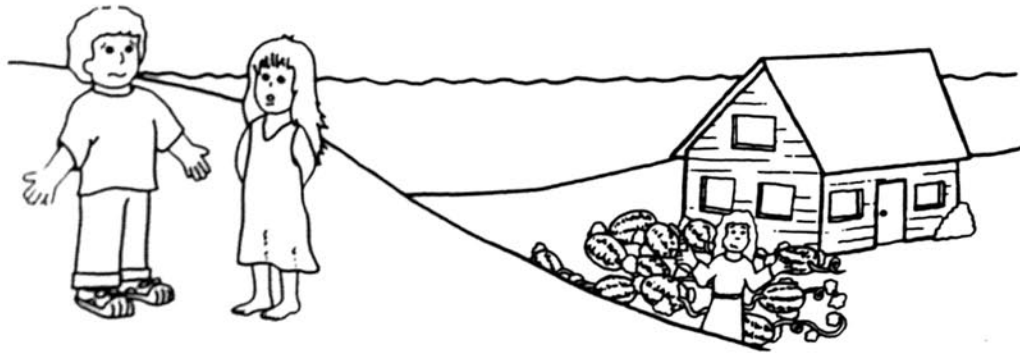
**“Did you ever see a fly
wearing a tie,
Down by the bay?”**



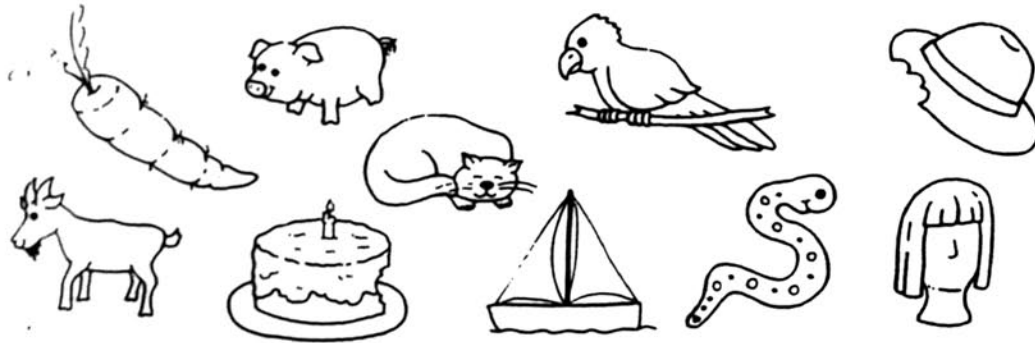
**Down by the bay, where the watermelons grow,
Back to my home I dare not go.
For if I do my mother will say,**



**“Did you ever see llamas
eating their pajamas,
Down by the bay?”**



**Down by the bay, where the watermelons grow,
Back to my home I dare not go.
For if I do my mother will say,**



**“Did you ever have a time
when you couldn’t make a rhyme,
Down by the bay?”**

Appendix C
Educational Network Permission Form

Shirley Davis
540 Fireside Dr. #15
Lawrence, Kansas 66049

June 16, 1993

Jack Handy
Educational Network
Box 426
Hilmar, California 95324

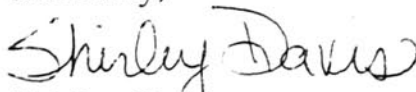
Dear Mr. Handy,

I am a music therapist and a graduate student at the University of Kansas completely a Master's Degree in Music Education and Music Therapy. As part of my degree requirements, I am writing a thesis on the effects of music on preschool children's word recall. I am particularly interested in the effects of music and rap when paired with the "Song Cards" that your company produces.

I am writing to request further information about the "Song Card" sets and would like to inquire whether the sets have ever been tested for enhancing recall with preschool children. I am also writing to request permission to use some of the "Song Card" sets in my thesis with appropriate credit given to both you and Raffi.

I look forward to hearing from you. Thank you for your time and consideration on this matter.

Sincerely,


Shirley Davis
RMT-BC

National Educational Network

Shirley Davis
540 Fireside Dr. #15
Lawrence KS 66049

Dear Ms. Davis,

In response to your letter of June 4, 1993. I'm not quite clear on what you mean by "using" Song Cards in your project. If you would like permission to copy them, our copyright allows for photocopying one copy for the purpose of including them in a research project. If you would like to cite their use and utility in the classroom setting, that of course, is fine with us.

In response to your question regarding research findings. I have asked our educational consultant for some guidance for you. She suggests that you include research into the effectiveness of predictable and patterned materials in the body of your research.

Hopefully, I have answered your questions. Please feel free to follow up with a call if I have not. We have been extremely busy this summer with workshops, but we will get back to you as soon as we possibly can.

Good luck to you on your research project.

Sincerely,



Jack Handy
Administrator

JH/sb

PO BOX 426 • HILMAR CA 95324 • 209 668 4142 • 209 668 1855 fax

Appendix D
Research Test

Research Experiment

Clozure Test

School _____ Student _____

Condition _____ M / F _____

Age _____ Socioeconomic _____

"Down By The Bay"

Down by the _____, where the _____

back to my _____ I dare not _____. For if I _____

my mother will _____

Did you ever see a goose kissing a _____

down by the _____? Down by the _____ where the _____

_____, back to my _____ I dare not _____. For if I _____

_____ my mother will _____ Did you ever see a

whale with a polka dotted _____, down by the _____? Down

by the _____ where the _____ _____, back to my _____

I dare not _____. For if I _____, my mother will _____, Did

you ever see a fly wearing a _____ down by the _____? Down

by the _____ where the _____ _____, back to my

_____ I dare not _____. For if I _____, my mother will
_____, Did you ever see a bear combing his _____ down by the
_____? Down by the _____ where the _____
back to my _____ I dare not _____. For if I _____ my
mother will _____, Did you ever see llamas eating their
_____ down by the _____?
Down by the _____ where the _____, back to my
_____ I dare not _____. For if I _____ my mother will
_____ Did you ever have a time when you couldn't make a _____
down by the _____?

Appendix E

Raw Data

Raw Data

Scores

Subject	Age	TX	VS/NVS	S=1	S=2
1	4	2	1	1	35
2	4	3	1	1	45
3	5	3	1	0	48
4	5	1	2	0	43
5	5	1	2	0	44
6	5	1	2	2	44
7	5	1	2	2	45
8	3	2	2	0	31
9	4	2	2	2	43
10	4	3	2	3	37
11	5	1	1	1	05
12	5	2	1	0	14
13	4	2	1	2	46
14	4	2	1	2	31
15	4	1	2	0	19
16	4	1	2	0	46
17	5	1	2	0	45
18	5	2	2	0	24
19	4	2	2	2	47
20	5	2	2	0	43
21	4	2	2	0	33
22	5	2	2	2	48
23	5	2	2	0	17
24	4	3	2	2	42
25	4	1	1	2	48
26	4	1	1	1	14
27	3	3	1	1	48
28	4	2	2	0	48
29	5	2	1	0	31
30	5	2	1	1	36
31	5	3	1	5	48
32	5	1	2	0	26
33	5	1	2	0	46
34	5	2	2	4	48
35	5	3	2	2	45
36	5	1	1	2	04

Raw Data (Con't)

Subject	Age	TX	VS/NV	S=1	S=2
37	5	1	1	1	16
38	5	1	1	2	37
39	5	3	1	1	41
40	5	3	1	5	36
41	5	3	1	1	44
42	5	1	2	9	48
43	5	1	2	2	47
44	5	1	2	1	44
45	4	2	2	0	34
46	5	3	2	1	14
47	5	1	1	2	46
48	4	1	1	4	44
49	4	2	1	3	40
50	6	3	1	1	47
51	4	3	1	0	39
52	5	3	1	2	48
53	4	1	2	0	37
54	5	2	2	2	48
55	4	2	2	2	48
56	3	3	2	0	32
57	6	3	2	0	48
58	5	3	2	3	42
59	6	1	1	0	06
60	5	2	1	1	23
61	5	2	1	1	08
62	5	3	2	0	46
63	5	3	2	0	48
64	5	1	1	1	32
65	5	1	1	4	48
66	5	2	1	4	48
67	5	3	2	3	48
68	4	3	2	4	46
69	5	3	2	0	47
70	3	3	1	0	24
71	3	3	1	1	30
72	3	2	1	0	17